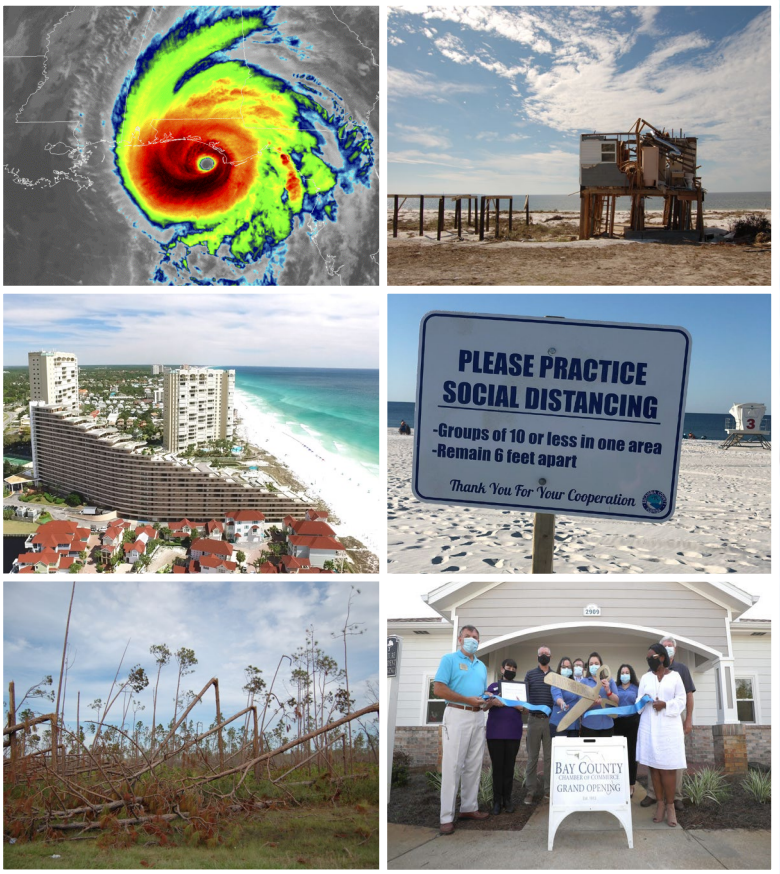
EMERALD COAST

REGIONAL ECONOMIC RESILIENCE PLAN



2019-2020

EMERALD COAST REGIONAL COUNCIL

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Section 1: Introduction

Economic resilience is the ability to prevent, withstand, and quickly recover from major disruptions to the economy. Disruptors to an area's economic base can result from many different factors, some natural and some man-made. The Emerald Coast region is no stranger to the devastating effects of hurricanes; the most recent was Hurricane Michael, a Category 5 storm that made landfall on October 10, 2018 in Bay County. Prior to Hurricane Michael, the region was affected by the 2008 Housing and Financial crisis, the 2010 Deepwater Horizon Oil Spill, and now finds itself amid the 2020 COVID-19 pandemic. Each event brings unique circumstances and challenges, and with each successive event tools are added to the resilience and recovery toolkit.

Establishing economic resilience in a local or regional economy requires the ability to anticipate risk, evaluate how that risk can impact key economic assets, and build the local and regional capacity to respond to disruptions *(U.S. Economic Development Administration*). The *Emerald Coast Regional Economic Resilience Plan* (Plan) is one more tool in the region's disaster recovery toolkit. It seeks to assist the region to establish economic resilience by providing tools that help communities anticipate and evaluate risks, as well as build capacity, by modeling the effects of natural disasters and national emergencies. The economic impact analyses were modeled using REMI (Regional Economic Models Inc.). The analyses on the economic impacts of a hurricane were based on the HAZUS models generated for this Plan by the Florida Department of Emergency Management.

The Plan includes the following:

1. An economic impact analysis of "Hurricane Impacts in Northwest Florida." The analysis was conducted by the Haas Center, at the University of West Florida;
2. An economic impact analysis of the effects of the COVID-19 pandemic on the regional economy;
3. HAZUS mapping of deterministic and probabilistic hurricanes in the region;
4. Best Practices;
5. Public outreach and stakeholder involvement;

The Emerald Coast region's primary economic assets are its military installations (and supporting industries) and the Gulf of Mexico. The Emerald Coast is home to eight of Florida's twenty-one military installations, and the Gulf of Mexico's beaches draw tourists from around the world. While military assets may be threatened by cuts in federal defense spending, the region is particularly susceptible to natural disasters, including tropical storms and hurricanes. This Plan was initially created to identify and prioritize projects, programs, and actions that can accelerate economic and social recovery, while creating resiliency and a post disaster vision.

This Plan is a result of funding provided by the U.S. Economic Development Administration (EDA) in the wake of natural disasters occurring in calendar year 2017, including Hurricane Irma which affected all counties within the Emerald Coast region. (While the region was addressing resiliency in the aftermath of Irma, Hurricane Michael made landfall in 2018.) Development of this Plan included review of economic resiliency literature, a county stakeholder survey regarding economic resilience and recovery, HAZUS modeling and economic analyses of the region's vulnerabilities, a community workshop and visits in each of the Emerald Coast region's seven counties.

Purpose & Scope

Local communities have been affected by two major events in the past several years. On October 10, 2018, Hurricane Michael made landfall as a Category 5 hurricane near the City of Mexico Beach in Bay County and moved inland across the panhandle into Alabama and Georgia. Holmes and Washington county were also impacted. On January 31, 2020, the U.S. Secretary of the Health and Human Services declared a public health emergency in response to the December 2019 detection of a novel coronavirus (later named COVID-19 by the World Health Organization) in Wuhan, China. This declaration was followed by a Presidential national emergency proclamation. Made poignant by these recent events, this Plan aims to identify strategies and projects that build resilient communities and hasten long-term economic recovery.

As an Economic Development District (EDD) designated by the U.S. Department of Commerce Economic Development Administration (EDA), the Emerald Coast Regional Council (ECRC) is responsible for maintaining the region's Comprehensive Economic Development Strategy (CEDS). The Emerald Coast Regional Economic Resilience Plan is an extension and refinement of the 2018-2022 CEDS. This Plan identifies economic resiliency "best practices" and advances proposed projects that were identified through the stakeholder engagement process. It seeks to illustrate the geographic areas that could potentially be affected by natural disasters; and the fiscal impacts of recent events (namely Hurricane Michael and the COVID-19 Pandemic) through two REMI (Regional Economic Models, Inc.) Economic Impact Analysis. The illustrations and data contained in the Plan can assist decision-makers identify the economic impacts on the local economy; and will hopefully spur communities to prioritize, develop, and implement policies and activities that build resilience into all aspects of their economy, community, and governance.

This Plan is applicable to the Emerald Coast region, which includes the seven westernmost counties in the Florida panhandle—Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington, and Bay. While informed by existing plans, the Plan is not a Local Mitigation Strategy (LMS) nor a Post Disaster Redevelopment Plan, but rather it is economic-oriented, recognizing that the economy is dependent on many elements including housing, workforce, natural resources, and infrastructure. Numerous risks associated with the hazards identified in state and county-level LMS plans pose a threat to the regional economy. Applying best practices to enhance resilient characteristics on a regional level will position the economies of communities along the Emerald Coast to better overcome the impact of inevitable disasters and emergencies. To obtain loss estimation results, ECRC partnered with the Florida Division of Emergency Management (FDEM), the University of West Florida Haas Center, and the East Central Florida Regional Planning Council. ECRC partnered with FDEM to develop deterministic and probabilistic hurricane scenarios for the region using FEMA's HAZUS modeling software. A deterministic scenario considers the impact of a single-risk scenario,

"Hazus uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations due to earthquakes, hurricanes, floods, and tsunamis. Users can then visualize the spatial relationships between populations and other more permanently fixed geographic assets or resources for the specific hazard being modeled, a crucial function in the pre-disaster planning process." (FEMA)

while a probabilistic scenario considers the associated impacts of many thousand potential storms that have tracks and intensities reflecting the full spectrum of Atlantic or Central Pacific hurricanes.

Deterministic and probabilistic models are based on different methodologies and resulting data from the two model types is not meant for comparison. Deterministic scenarios incorporate both wind and storm surge. Probabilistic models only account for wind losses. Deterministic approaches are best used when evacuation and mitigation plans are being developed for specific events, whereas probabilistic approaches are more appropriate in modeling possible outcomes of future events.

Maps were created from the model results to illustrate:

1. Deterministic Model Storm Tracks;
2. Deterministic Model Storm Tracks, Essential Facilities, and Surge;
3. Deterministic Model Building-Related Economic Loss Estimates;
4. Deterministic Model Maximum Sustained Wind Speed;
5. Probabilistic Model Storm Tracks;
6. Probabilistic Model 100-Year Return Building-Related Economic Loss Estimates.

These maps can be found in Appendix A.

Based on the HAZUS modeling, the Haas Center completed an economic impact analysis titled, *Hurricane Impacts in Northwest Florida, Impact Analysis to Inform a Comprehensive Post-Disaster Redevelopment Strategy*. An analysis was completed for each county in the region using the REMI (Regional Economic Models Inc.), Policy Insight, a widely used regional economic policy analysis model. The Analysis can be found in Appendix B.

REMI was also used to model the economic impacts of COVID-19 on the region. The latter was completed in partnership with the East Central Florida Regional Planning Council and can be found in Appendix C.

Regional and Economic Profile

1,003,498
BASE POPULATION

1.1%
2020-2025 POPULATION GROWTH RATE

$203,442
MEDIAN HOME VALUE

MEDIAN AGE
40.2

90.9%
HIGH SCHOOL GRADS OR HIGHER*

28.1%
BACHELOR'S DEGREE OR HIGHER*

*Population 25 and older

40,814
TOTAL BUSINESSES

433,995
TOTAL EMPLOYEES

2.47
AVERAGE HOUSEHOLD SIZE

STATE COLLEGES AND UNIVERSITIES

- University of West Florida (Pensacola)
- Pensacola State College (Pensacola)
- Northwest Florida State College (Niceville)
- Gulf Coast State College (Panama City)
- Florida State University Panama City

TOP INDUSTRIES BY EMPLOYMENT

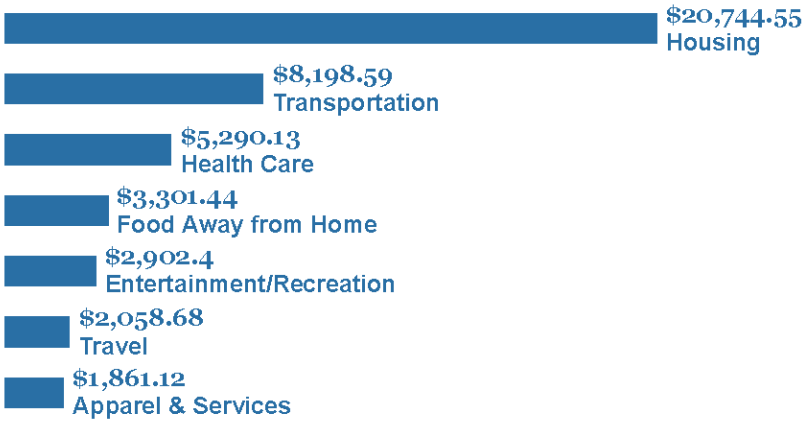
- Federal Government, Military
- Full-Service Restaurants
- Elementary and Secondary Schools (Local Government)
- Federal Government, Civilian
- Limited-Service Restaurants
- Local Government (Excluding Education and Hospitals)
- General Medical and Surgical Hospitals
- Offices of Physicians
- Credit Unions
- Elementary and Secondary Schools

62% WHITE COLLAR

20% BLUE COLLAR

18% SERVICES

SPENDING (Average Annual Dollars per Household)



7.9%
UNEMPLOYMENT RATE

$57,005
MEDIAN HOUSEHOLD INCOME

$30,705
PER CAPITA INCOME

Source: 2020/2025 Esri; Bureau of Labor Statistics, Esri; and Infogroup, Esri; UWF Haas CEnter, 2017 (Top Industries by Employment).

The Emerald Coast region is known for its two distinct assets, the beautiful beaches of the Gulf of Mexico and the military. The region is home to eight of Florida's twenty-one military installations – Tyndall Air Force Base, Naval Support Activity Panama City, Eglin Air Force Base, Hurlburt Field, Naval Air Station Whiting Field, Naval Air Station Pensacola, Corry Field, and Saufley Field. According to Enterprise Florida's Florida Defense Factbook (2020), defense activities account for 33.4% of Northwest Florida's total economy. The military provides an estimated 209,622 jobs and generates over $22.7 Billion in gross regional product (GRP), which is 33% of the region's total gross product. Though military installations are not located in every Emerald Coast county, their impact is felt throughout the region as employees commute across county lines.

Total Regional Impact *(in Millions)*	
Regional Economic Impact	$22,651.1
Percent of Economy	33.4%
Employment	209,622 Jobs
Consumption	$11,950.4
Capital Investment	$3,733.9

Source: Florida Defense Handbook, January 2020

The Gulf of Mexico's beautiful beaches draw tourists from around the world. In Northwest Florida, the tourism industry accounted for $9.7 Billion in spending and 147,000 jobs in 2018. Four counties placed within the *Top 20 Florida Counties for Visitor Spending and Total Employment/Value Added*.[1]

2018 Visitor Spending (Billions)	
#9 - Okaloosa	$2.8
#11 - Bay	$2.5
#17 - Escambia	$1.7
#20 - Walton	$1.4

Source: D.K. Shifflet, Visit Florida, Rockport Analytics, IMPLAN, Florida Office of Economic and Demographic Research (EDR)

2018 Employment (Thousands)	and Value Added (Millions)	
#11 - Bay	40	$1,891.1
#12 - Okaloosa	42.9	$1,836.9
#18 - Escambia	28.1	$1,180.9
# 20 - Walton	19.5	$1,022.6

Source: Rockport Analytics, IMPLAN, Florida Office of Economic and Demographic Research (EDR)

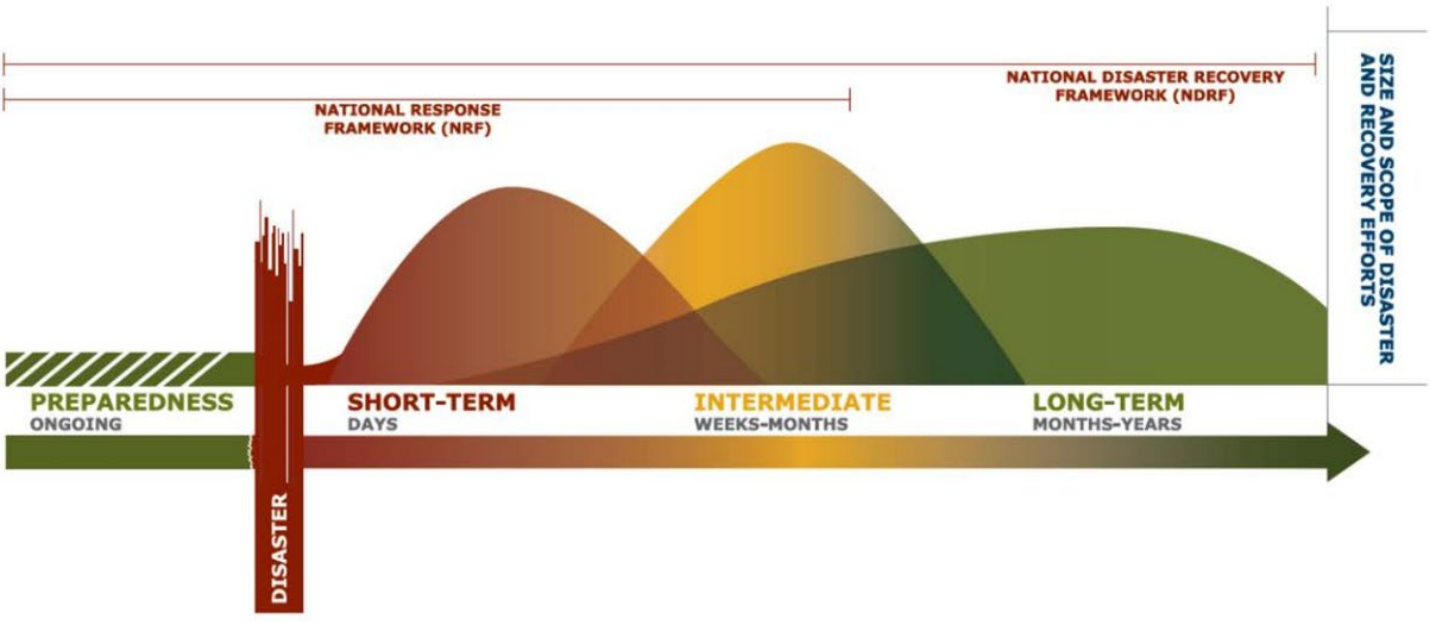
These assets are not only an economic driver for the region, but also account for the region's population growth. The population recently surpassed one million, with a 2020 estimate of 1,003,498. The largest city in the region is Pensacola, located in Escambia County, with a 2020 population estimate of 55,955. The fastest growing counties are Walton County with a 2020-2025 projected growth rate of 2.5%, Santa Rosa County at 1.6%, and Okaloosa County at 1.1%. Data profiles for each county can be found in Appendix C. *(Esri 2020/2025 population forecasts*). Prior to 2020, like many other areas of the United States, the region enjoyed a growing economy with low unemployment rates. For example, in 2018 Walton County's unemployment rate (3%) was lower than the State's (3.6%) and the nations (3.9%).

Hurricane Michael and COVID-19 have affected the region in different ways. The counties of Bay, Holmes, and Washington were amid their Hurricane Michael recovery efforts when the national emergency was declared. Surprisingly, the unemployment numbers for each of the region's counties do not vary by more than 1% point. This is a testament to the strong recovery efforts that each community has undertaken.

[1] *Picking up the Pace: Florida's Tourism Performance Jumps into a Higher Gear, Rockport Analytics for Visit Florida, 2020*

Phases of Disaster Recovery

Emergency management and recovery is modeled through four interrelated activities: mitigation, preparedness, response, and short- and long-term recovery. Disaster resilience within a community and region incorporates these activities throughout the pre-disaster and post-disaster phases. Mitigation reduces risk and vulnerabilities before a disaster occurs. Preparedness activities ensure residents and visitors are ready and capable of effectively reacting to an emergency, and response includes actions that are conducted during a disaster to safely resolve the emergency. Short-term recovery actions include restoring critical services such as electric, water and sewer systems; clearing roadways; and providing emergency assistance to survivors. Long-term recovery efforts address the physical environment and seek to return the community to a state of normalcy. The diagram below from the *National Disaster Recovery Framework (2016)* shows recovery moving along a continuum, with long-term recovery planning being initiated during the Response period. Though each stage calls for unique activities, each decision and action should be considered as part of the whole; with each step taken laying the foundation for the next.



Emerald Coast Event History

At the state level, the Florida Division of Emergency Management's (DEM), Enhanced State Hazard Mitigation Plan identifies potential hazards that affect Florida counties based on historical data. The table below illustrates hazards that affect the region. It is important to note that the rankings below are subjective, as each county ranking system was aligned into one statewide system according to frequency of occurrence. "High" risk hazards occur once or more each year, "Medium/High" risk hazards occur once every three years, "Medium" risk hazards occur every five to seven years, and "Low" risk hazards occur once every ten years. All counties in the Emerald Coast region are at "High" risk of flooding and hurricanes, except for Santa Rosa County which has a "Medium/High" and "Medium" risk rating for flooding and hurricanes, respectively.

County	Flooding	Hurricane	Tornado	Severe Storm	Wildfire	Drought	Extreme Heat	Erosion	Sinkholes
Bay	H	H	H	NI	M	NI	NI	NI	L
Escambia	H	H	L	H	M	M	NI	M	L
Holmes	H	H	H	MH	H	MH	MH	L	L
Okaloosa	H	H	M	H	M	M	L	L	L
Santa Rosa	MH	M	H	H	L	M	MH	H	L
Walton	H	H	H	H	L	L	L	H	L
Washington	H	H	M	MH	M	M	MH	MH	M

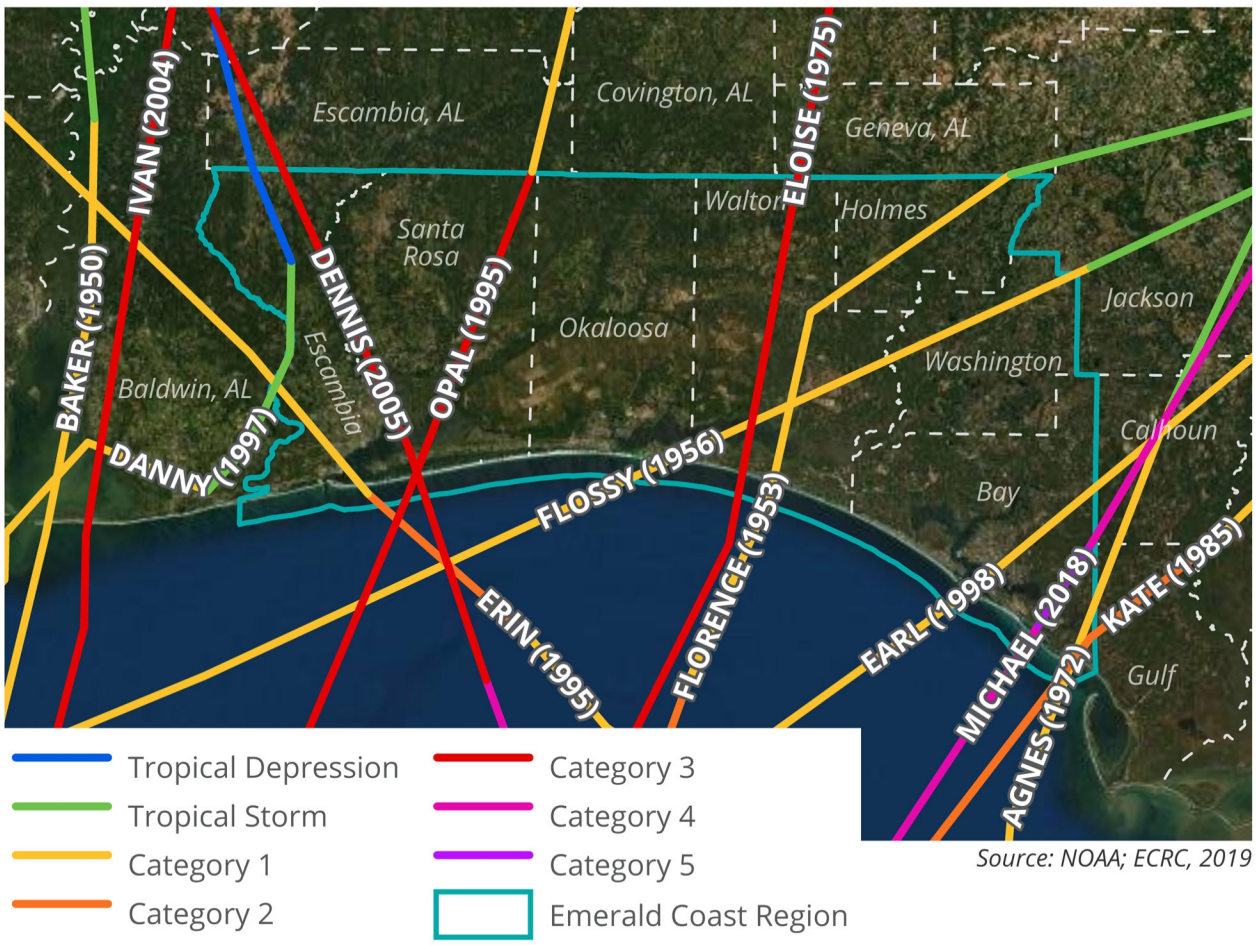
Degree of Risk
NI - Not Identified
L - Low (one occurrence every 10 years)
M - Medium (one occurrence every 5-7 years)
MH - Medium/High (one occurrence every 3
H - High (one or more occurrences each year)

Hurricanes

Regionally, hurricane-related economic losses result from damage to agriculture, specifically cotton crops; destruction of infrastructure including buildings, roadways, and utilities; severe beach erosion; loss of tourism and local spending; and damage to military installations. Several hurricanes have impacted the Emerald Coast region since the early 1950s, as seen below.

Name (Year)	Category at Landfall	Affected Counties in the Emerald Coast Region
Baker (1950)	1	Baldwin (AL), Escambia, Santa Rosa
Florence (1953)	1	Okaloosa, Holmes
Flossy (1956)	1	Okaloosa, Walton, Washington
Agnes (1972)	1	Bay
Eloise (1975)	3	Okaloosa, Walton, Bay
Kate (1985)	2	Bay
Erin (1995)	1	Escambia, Santa Rosa
Opal (1995)	3	Escambia, Santa Rosa
Danny (1997)	1*	Baldwin (AL), Escambia
Earl (1998)	1	Bay
Ivan (2004)	3	Baldwin (AL), Escambia, Santa Rosa
Dennis (2005)	3	Santa Rosa (with beach erosion also in Escambia and Okaloosa)
Michael (2018)	5	Bay, Washington, Holmes

**Hurricane Danny weakened to a Tropical Storm prior to entering Escambia County, FL; however, the storm resulted in extreme flooding.*



Source: NOAA; ECRC, 2019

Hurricane Eloise, 1975

Eloise made landfall on September 23, 1975, as the only hurricane to hit the U.S. that year and the only one to hit Panama City during the 20th century. As a Category 3, Eloise was the first major hurricane to strike the region in four decades, causing widespread wind, flooding, and storm surge damage in Okaloosa County, Walton County, and Panama City Beach in Bay County. The storm resulted in 76 deaths and $2 Billion in damages. Between Fort Walton Beach and Panama City, 85-90% of the buildings on the Gulf side of Highway 98 were severely damaged or destroyed. Severe wind forces continued north into Alabama and Georgia. The State Civil Defense estimated agricultural losses more than $100 Million in Alabama.[2]

Storm damage from Hurricane Eloise - Panama City Beach, Florida, 1975. Florida Memory, State Archives of Florida (1975)

Hurricane Opal, 1995

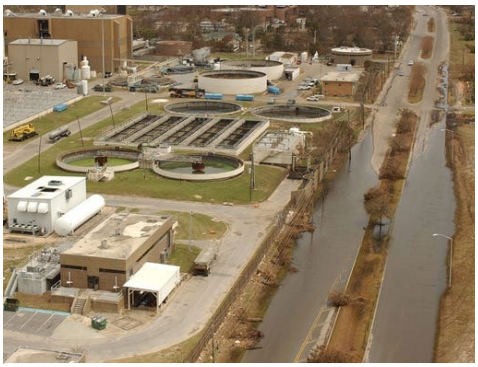
Hurricane Opal rapidly intensified from a Category 2 hurricane to a Category 4 hurricane overnight prior to making landfall as a Category 3 hurricane. Because of this period of rapid intensification, thousands of residents evacuated at the last minute resulting in highway gridlock. Hurricane Opal brought 10-15 feet of storm surge recorded from Navarre Beach to Destin, destroying most of the homes facing the Gulf of Mexico. Infrastructure including water and sewer systems, roads, and phone and electric utilities sustained a tremendous amount of damage. Highway 399 between Pensacola Beach and Navarre Beach and US Highway 98 between Fort Walton Beach and Destin were destroyed.[3]

Sand over wash and toppled electric infrastructure in Destin (left), critically eroded dune area in Walton County (middle), erosion and a house transported into Santa Rosa Sound in Santa Rosa County (right). FDEP Hurricane Opal Report (1998)

[2] *National Weather Service, https://www.weather.gov/mob/Eloise*
[3] *National Weather Service, https://www.weather.gov/mob/opal*

Hurricane Ivan, 2004

Ivan made landfall as a Category 3 hurricane west of Gulf Shores, Alabama with 120 mph sustained surface winds, minimum observed central pressure of 964 mb, and storm surge ranging from 10-15 feet. The magnitude and extent of the destruction in Baldwin County, Alabama and Escambia and Santa Rosa Counties in Florida exceeded that of Hurricane Opal (1995).[4] Portions of the I-10 Escambia Bay Bridge, Bob Sikes Bridge to Pensacola Beach, and the Garcon Point Bridge on Highway 281 were either collapsed or rendered impassible due to erosion.



Left: Flooded sewage treatment plant in Pensacola. The plant has sense been relocated. G. McCraken/PNJ (2014); Center: I-10 bridge collapse. B. Barrett/WUWF (2014); Right: Debris remaining on Pensacola Beach one year after Hurricane Ivan. Skoogfors, L. FEMA (2005)

Hurricane Dennis, 2005

Hurricane Dennis was a relatively small and fast-moving storm that made landfall as a Category 3 storm near Navarre Beach in Santa Rosa County. Heavy rains and high winds resulted in damage to the cotton crop in northwest Florida, and Eglin and Hurlburt Air Force Bases reported over a half Billion dollars in damage. Severe beach erosion occurred in Escambia, Santa Rosa, and Okaloosa Counties.[5]

Left: Roadway erosion. NWFL Daily News (2018); Center: Destroyed home in Navarre Beach. FEMA Photo Library/Leif Skoogfors (2005); Right: Navarre Beach. Wikimedia Commons (2005)

[4] *National Weather Service, https://www.weather.gov/mob/ivan*
[5] *National Weather Service, https://www.weather.gov/mob/dennis*

Hurricane Michael, 2018

Hurricane Michael made landfall as a Category 5 storm on October 10, near Mexico Beach in Bay County. It was the most notable hurricane to hit the Emerald Coast region, with maximum sustained winds of 140 knots (161 miles per hour) and a minimum pressure of 919 millibars. Hurricane Michael caused catastrophic damage from wind and storm surge. According to the National Weather Service, "Michael is the fourth most-powerful hurricane to hit the United States, behind the Labor Day Hurricane (1935), Hurricane Camille (1969), and Hurricane Andrew (1992), and the most powerful storm to impact the Florida Panhandle in recorded history."

Left: Mexico Beach. National Weather Service (2018); Right: Waterfront destruction in Mexico Beach. ECRC (2018)

Other Recent Events

Deepwater Horizon Oil Spill, 2010

Severe economic impacts are not restricted to natural disasters, as demonstrated by the severe losses to tourism, fisheries/aquaculture industries, and the region's natural resources caused by the 2010 Deepwater Horizon Oil Spill. The spill affected the northern Gulf of Mexico from Florida to Texas, and disproportionately impacted five counties within the Emerald Coast Region—Escambia, Santa Rosa, Okaloosa, Walton, and Bay.

Left: Pensacola Beach Welcome Sign. Colin Hackley/Reuters (2010); Right: Oil Slick in Gulf Shores. Dave Martin/Associated Press (2010)

Gulf Coast Historic Flash Flood Event, 2014

Two predominant rounds of rainstorms within two days in late April 2014 resulted in significant flash flooding and produced sinkholes in Escambia, Santa Rosa, and Okaloosa Counties in Florida and Baldwin County in Alabama. Three to eight inches of rain fell during the first round of storms, and an additional 10-15 inches of rain fell within an estimated nine hours during the second round of storms. The 2-Day rainfall record at Pensacola International Airport (PNS) was estimated at 20.47 inches which is between a 1 in 100-year and 1 in 200-year event. Prior to this historic event, the previous 30 days recorded 200-600% of normal 30-year PRISM Data rainfall, meaning that the ground was likely already saturated prior to the event.

Left: Scenic Highway 90 in Pensacola; Right: Ponderosa Drive in Pensacola. Katie King/PNJ (2014)

COVID-19 Pandemic, 2020

In February 2020, a coronavirus started to spread across the United States, leading to COVID-19, a contagious respiratory illness. On March 11, 2020, the World Health Organization deemed the virus a pandemic. As a response, federal, state, and local governments and agencies implemented a series of policies that shutdown the economy and restricted social interactions.

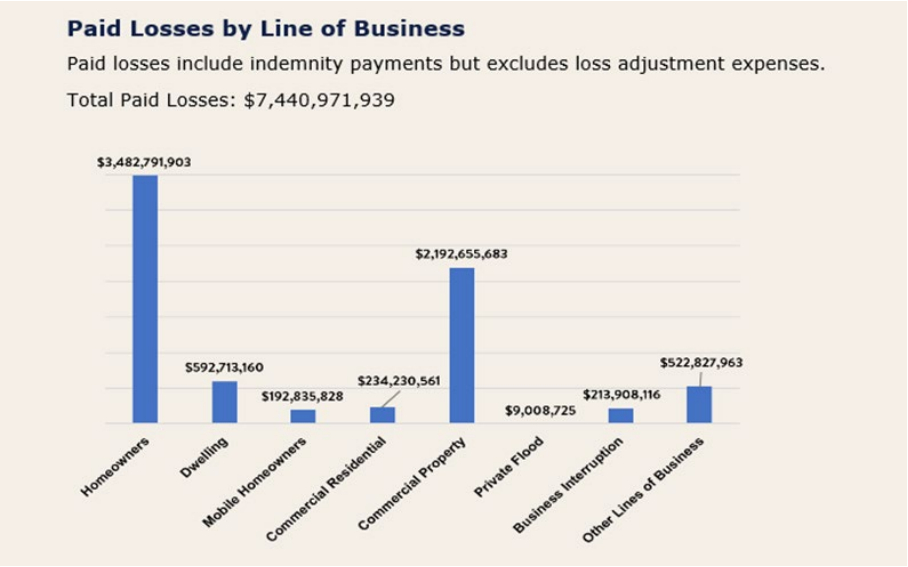
Left: COVID closes Okaloosa County beaches. Destin Log (2020); Right: DeFuniak Springs "to go" dining only. Devon Ravin/NWFL Daily News (2020)

Section 2: Economic Impacts

Identifying the potential effects of an event, whether natural or man-made is the first step in the development of a successful recovery plan, and the implementation of successful mitigation and resilience projects. Events may be unique and its effects discrete; however, the effects on the economy of a region are often similar. Portions of the region are experiencing the results of dual disasters. Bay, Holmes, and Washington counties are still recovering from the physical and psychological effects of Hurricane Michael, and now they are contending with the effects of COVID19. Escambia and Santa Rosa counties are contending with the effects of COVID19, and Hurricane Sally (October 2020),

Hurricane Michael

Though Hurricane Irma, which struck South Florida in 2017, affected a much larger geographical area, Hurricane Michael was a costlier storm based on the number of claims and paid losses. Hurricane Irma produced over one million claims, costing more than $10.8 Billion with an average claims cost of $10,800.[6] Conversely, Hurricane Michael, with 149,448 claims, produced more than $7 Billion in paid losses with an average claims cost of $62,661. The figure below differentiates the paid losses by Line of Business categories. Commercial Property and Business Interruption losses accounted for over 1/3 of the paid losses.



Source: Hurricane Michael Data Call (November 2019)

Hurricane Michael's total economic impact was around $25 Billion. The hurricane led to more than 31,000 individual applications to FEMA. Around $148 Million in household and individual dollars were allocated for assistance, and $544 Million in public grants were obligated. The SBA provided $644.7 Million in disaster loans, and an estimated $224.1 Million in claims were paid to 4,270 Nation Flood Insurance policyholders.[7]

Hurricane Michael negatively impacted the ability of Bay County to do business. For example , in Quarter 4 of 2018, taxable gross sales were down 10% from the previous year, while the rest of the state experienced an increase in taxable sales over the year by 6.75%. Assuming a similar increase in Bay County, then the gross sales impact of Hurricane Michael can be estimated at -15.35%.

[6] *Hurricane Michael Data Call, Florida Department of Insurance Regulation, November 12, 2019*

[7] *Hurricane Impacts in Northwest Florida, UWF Haas Center, March 17, 2020 (Appendix B)*

Bay County took the brunt of the storm, and as of April of 2019, FEMA eligible reimbursements for public property and infrastructure were over $1.8 Billion. The *Hurricane Michael Data Call* report (November 2019) from the Florida Office of Insurance Regulation states that Bay County accounted for 59% (89,722) of filed claims. Bay County also accounted for 60% (7,331) of the 12,024 claims filed in the region for commercial property and business interruption. The Bay County Long-Term Recovery Plan reported that the storm displaced over 22,000 residents, many of which temporarily relocated to unaffected nearby counties where housing was available, and that the School District lost 15% of its student population. The storm was particularly devastating to both the forest and agriculture industries. Total losses to production agriculture were estimated at $14 Billion. This included crop loss along with ancillary losses and expenses such as debris cleanup; additional feed and harvest costs; and damages to land, infrastructure, and equipment.[8]

What would the economic impacts have been in other counties in the region? To help communities understand the effects of similar storm events in their county, ECRC partnered with the University of West Florida's Haas Center. Using deterministic and probabilistic storm models, provided by the Florida Department of Emergency Management for this Plan, the Haas Center used REMI to model the economic impacts for each county. The tables below contain excerpts from the report, which show the impacts to jobs and GDP; with year one exhibiting the greatest number of lost jobs and the corresponding decreases in GDP. The increases shown in the following years are the result of the rebuilding efforts and the subsequent influx of federal and state assistance that has traditionally occurred after a disaster. Escambia, Okaloosa, and Bay county exhibit the largest impacts to their economy. Interestingly, Escambia shows the most sustained increases and Washington the most sustained losses. The full report can be found in Appendix B. The data should be viewed through the lens of the maps generated for each county, as the resulting numbers are based on the area affected by the storm(s). The Hazus maps were included, so that communities could explore potential vulnerabilities and plan accordingly to either mitigate, avoid or construct new resilient infrastructure, and identify potential future projects that would assist the communities hasten economic recovery.

There is no clear consensus on whether natural disasters produce positive or negative long-term economic impacts, as studies have shown both, i.e., increases in industrial sector production, as rebuilding efforts begin.[9] Positive impacts can be seen in the REMI data, which shows that most of the affected communities enjoy increases in both categories in the years following the event. Examples of negative impacts are losses from foregone revenues and an increase in debt obligations that small businesses take-on to finance recovery, or the depletion of life savings when recovery is self-financed.

[8] *Hurricane Michael's Damage to Florida Agriculture, Florida Department of Agriculture and Consumer Services, October 30, 2018*

[9] *2017 Small Business Credit Survey: Report on Disaster Affected Firms; Federal Reserve Bank*

Deterministic Impact Result Tables

Impact Results by Type of Storm in Escambia County

Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-4,791	304	309	349	317
100 yr	-4,068	4,327	4,478	4,131	3,469
500 yr	-631	14,892	15,453	14,100	11,800
1,000 yr	1,537	20,702	21,524	19,647	16,461
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-374	26	25	28	26
100 yr	-325	327	340	317	268
500 yr	-76	1,120	1,172	1,080	908
1,000 yr	82	1,556	1,632	1,504	1,266

Impact Results by Type of Storm in Santa Rosa County

Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-1,317	194	171	164	138
100 yr	-824	1,789	1,791	1,626	1,360
500 yr	1,102	6,146	6,256	5,668	4,766
1,000 yr	2,286	8,626	8,801	7,975	6,712
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-93	16	14	14	11
100 yr	-50	140	142	130	110
500 yr	108	481	495	452	382
1,000 yr	205	675	696	636	1,266

Impact Results by Type of Storm in Okaloosa County

Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-2,777	192	199	210	184
100 yr	-2,883	1,925	1,985	1,827	1,527
500 yr	-2,153	6,550	6,799	6,201	5,178
1,000 yr	-1,624	9,104	9,468	8,632	7,209
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-233	19	19	20	18
100 yr	-235	175	181	168	141
500 yr	-155	590	616	567	477
1,000 yr	-100	819	857	789	664

Impact Results by Type of Storm in Walton County

Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-1,039	72	58	61	53
100 yr	-1,149	620	605	548	448
500 yr	-894	2,262	2,270	2,032	1,666
1,000 yr	-639	3,298	3,309	2,951	2,412
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-98	8	6	6	5
100 yr	-108	62	60	54	45
500 yr	-83	221	222	201	166
1,000 yr	-57	322	324	292	240

Impact Results by Type of Storm in Bay County

Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-3,006	154	155	191	179
100 yr	-3,413	1,616	1,662	1,560	1,311
500 yr	-3,054	6,030	6,252	5,744	4,785
1,000 yr	-2,618	8,586	8,934	8,196	6,828
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-253	15	13	16	15
100 yr	-295	128	129	123	104
500 yr	-287	468	484	449	376
1,000 yr	-264	665	692	641	537

Impact Results by Type of Storm in Washington County

Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-167	-8	-4	-2	-1
100 yr	-241	0	6	8	8
500 yr	-372	32	43	45	40
1,000 yr	-421	73	88	86	74
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-9	-1	0	0	0
100 yr	-13	0	0	0	0
500 yr	-20	0	1	1	1
1,000 yr	-23	2	3	3	3

Impact Results by Type of Storm in Holmes County

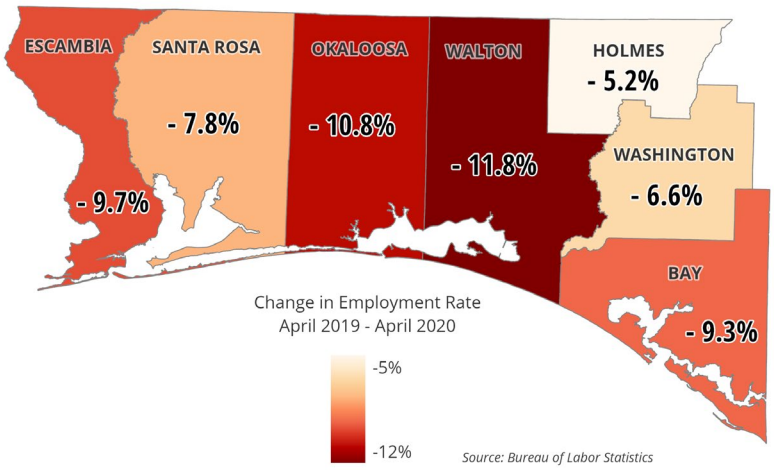
Impact (Jobs)	2019	2020	2021	2022	2023
20 yr	-101	-6	-3	-1	0
100 yr	-145	1	5	7	7
500 yr	-223	22	32	34	31
1,000 yr	-256	41	54	56	50
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-5	0	0	0	0
100 yr	-7	0	0	1	1
500 yr	-11	2	3	3	3
1,000 yr	-12	3	4	4	4

COVID-19

The immediate impacts of COVID-19 on the national, state, and local economies are being documented by various entities including state and federal agencies. The national emergency declaration ushered in "*15-Days to Slow the Spread*" guidelines. Many months later these guidelines are still in effect throughout the country. While we do not have real-time data on the quickly changing small business conditions, we have several tools that can help decision makers gauge the effects of the pandemic on their communities.

Nationwide, small employers (<499 employees), account for "47.5% of the private sector work-force", and the health of these firms cannot be underestimated.[10] The Federal Reserve's *Small Business Credit Survey* (SBCS) sheds light on how these firms are likely to remain afloat during these uncertain times. The 2019 SBCS showed that only one in five healthy firms (and even fewer less-healthy firms) had sufficient cash reserves to continue normal operations if they experienced a two-month revenue loss. Businesses also reported having to reduce their workforce and operations, or delay payments. Many firms reported relying on personal funds or debt to bridge the gap.[11] The latter is very similar to responses from the 2019 Hurricane Michael Needs Assessment Survey conducted by the International Economic Development Council in partnership with ECRC (See Appendix D), in the hurricane affected counties.

In Florida, many of the businesses forced to close were able to reopen in June, when the State entered Phase 2 of the State Department of Health's *Plan for Florida's Recovery*. However, regional unemployment doubled and tripled for some of the counties in the region, as can be seen in the figure.



COVID-19 and the accompanying restrictions have greatly affected the tourism industry in the State and in the local economy. The Haas Center at the University of West Florida conducted a study of the economic impacts of the pandemic in Florida between March 16 and April 6, 2020. The study focuses on understanding the spending and travel impacts on Florida residents. According to the survey:

- "61% of Floridians cancelled or postponed travel plans, and more than half of that group had more than one trip that was impacted.
- 24% had experienced some loss in wages due to the COVID-19 outbreak, while another 18% expected income loss to be impending.

[10] *U.S. Small Business Administration, 2018 Small Business Profile*
[11] *Federal Reserve Banks, 2019 Small Business Credit Survey*

- ❖ 90% of Floridians reported reduced spending across various industry sectors including restaurants, entertainment, and retail. "[12]

The onset of the pandemic, coincided with Spring Break, a time when seasonal employment and tourism increases across the state. Most travel plans affected were at the end of Quarter 1 and continued into Quarter 2. Fewer trips after July 2020 had been cancelled or postponed. Around two-thirds of survey respondents working in the Accommodations and Food Service industry lost income, along with the 58% of respondents employed in Arts, Entertainment, and Recreation. The survey's consumer data shows that residents were spending substantially less at non-grocery retailers, restaurants, and entertainment facilities.

Data from Visit Florida shows that:

- "Hotel demand as of late March and early April 2020 was down more than 70%, compared to the same time last year. More specifically, Florida's demand numbers have been trending marginally worse than the U.S. overall.
- Hotel revenue compared to the same week of the previous year has been down every week since March 15, 2020, approximately between $300 and $400 Million each week.
- New vacation bookings have been down between 70% and 90% daily since mid-March, as the industry deals with an executive order that closed them down in the short term, leading to uncertainty in the long term.
- Scheduled air travel seat capacity is down 60% from other domestic airports, from February 29, 2020.
- Harris poll data suggests that the tourism industry may continue to struggle several months after COVID-19 is over. The survey also found only 15% of respondents planned to stay in a hotel in the 30-day period following the end of the COVID-19 pandemic."[13]

These facts don't tell the full story of the pandemic's effects. Behind the scenes, many other industries continue to suffer. For example, in the April 15, 2020, *Florida Seasonal Crop Covid-19 Impact Assessment*, the Florida Department of Agriculture and Consumer Services stated that agricultural losses through mid-April were estimated at $522.5 Million, the result of a lack of demand.

The *Economic Impact of the COIVD-19 Pandemic* (Appendix C) states that, "[a]ccording to the REMI model, the Emerald Coast region could expect to lose close to 72,000 positions in 2020 because of the COVID-19 pandemic. This represents about 14 percent less of what was [initially] forecasted by REMI for 2020. The region is also expected to lose almost $8.6 billion in output and just over $2.8 billion in personal income. Finally, the region's annual Gross Domestic Product will be reduced by 12 percent or just over $5 billion. The most affected counties will be Escambia, Okaloosa, and Bay. Together these three counties account for 75 percent of all the economic losses. These results should not only be

Summary of Economic Losses Spurred by COVID-19 Pandemic by County				
County	Total Employment	Output/Sales	Personal Income	Gross Domestic Product
Bay	(14,931)	($1,640,000,000)	($570,000,000)	($967,000,000)
Escambia	(24,148)	($3,131,000,000)	($811,000,000)	($1,847,000,000)
Holmes	(487)	($41,000,000)	($19,000,000)	($25,000,000)
Okaloosa	(15,027)	($1,836,000,000)	($432,000,000)	($1,096,000,000)
Santa Rosa	(9,987)	($1,111,000,000)	($641,000,000)	($664,000,000)
Walton	(6,351)	($714,000,000)	($336,000,000)	($424,000,000)
Washington	(969)	($85,000,000)	($35,000,000)	($51,000,000)

Source: REMI PI+ Florida Counties and Border States v2.4.1

[12] *Travel and Spending Assessment of Florida Residents During the US COVID-19 Outbreak, UWF Haas Center, May 4, 2020*
[13] Ibid

considered as a loss of current economic capacity, but they also represent a potential growth that will never be reached because of the COVID-19 pandemic closures.

Total employment includes all full-time, part-time, and temporary positions. Not surprisingly, the most affected industry sectors that would lose the most jobs are Accommodation and Food Services and Retail Trade. These are the industries that have been most directly affected by the pandemic and the economic shutdown. When combined, these industry sectors account for 44 percent of the employment losses. These are followed by the Construction, Other Services, and Administrative and Support and Waste Management and Remediation Services (ASWR) industry sectors. Most of the positions lost within the Construction and ASWR sectors were indirect and induced positions. This means that these job losses could be attributed to less spending on suppliers and consumer goods and services."

Industries	Loss of Wages Salaries
Accommodation and Food services	-$422,000,000
Retail trade	-$403,000,000
Construction	-$203,000,000
Information	-$174,000,000
Professional, Scientific, and Technical Services	-$170,000,000

Source: REMI PI+ Florida Counties and Border States v2.4.1

Conclusion

The Emerald Coast region is no stranger to natural disasters, and the nation has experienced pandemics in the past. In the intervening years, there have been technological innovations, advances in manufacturing, and diversification of industry sectors that have allowed for speedier recovery periods. With each successive event new tools are added to the recovery and resilience toolkit. This does not mean that the work of local government and agencies is done, as there is much work that must continue to create economic and physical resilience.

The analyses show that though the circumstances that led up to the economic downturn may have been different, the results were and are similar, and the tools required to resolve those challenges can be very similar. The data shows that in both instances there are large decreases in employment in tourism and tourism related industries, which continues to highlight the importance of industry diversification. Anecdotally we know that the local manufacturing sector (with some exceptions) continues to operate during the pandemic.

One disaster has informed the other of the possibilities of continued economic production in the absence of physical infrastructure. One scenario highlights the effects on businesses that result from a lack of infrastructure or "storefront"; the other highlights the opposite. If there is one common thread identified from both events, it is the importance of a resilient telecommunications system and a hardened energy grid that allows communities the opportunity to access telemedicine, educational institutions, and provides the ability to telecommute.

Section 6: Community Engagement

Community Engagement is a vital part of a community's recovery effort. The National Disaster Recovery Framework provides an effective context for the development of community outreach strategies through its identification of the core capabilities. Outreach efforts whether in partnership with federal, state, or local agencies and NGO's used the NDRF as an organizing vehicle. As the region' economic development district, ECRC participated in and led several outreach meetings in the affected communities: 1) Economic Recovery and Resilience Workshop; 2) Business Assessment Survey: 3) Disaster Recovery Planning, Technical Assistance, and Grant Writing.

Economic Recovery and Resilience Workshop

In March of 2019, ECRC in partnership with the Economic Development Administration, and the International Economic Development Council (IEDC), hosted the Resilient Northwest Florida Workshop, to discuss long-term economic recovery and resilience in the wake of Hurricane Michael. Expert panelists discussed the future of the Aerospace and Defense Industry, Agriculture and Forestry, and Transportation and Logistics; all major economic drivers within the region.

Figure 1 Austin Mount, CEO of ECRC and Panelists

Figure 2- Lynn Knight, former VP of IEDC

Business Assessment Survey

In collaboration with IEDC, a post-disaster assessment to determine local business recovery needs and develop long-term strategies to foster a more resilient economy was conducted to assist in identifying recovery priorities. The Survey was available February 15, 2019 through March 15, 2020, through SurveyMonkey and was also made available in hardcopy The community was made award of the Assessment though local chambers, FEMA staff, IEDC volunteers and press releases.

Seventeen percent of respondents responded in the affirmative when asked if they wanted to be contacted by the local economic development office or another service provider. ECRC worked with the Small Business Development Center at the UWF – Haas Center to provide follow-up assistance to business that requested a follow-up call. The survey results can be found in Appendix D.

Disaster Recovery Planning, Technical Assistance, and Grant Writing

ECRC's Disaster Recovery Coordinator worked with local communities and Economic Development Offices to identify and prioritize recovery and resilience projects in anticipation of disaster recovery funding in affected areas. Technical assistance was provided in partnership with IEDC, through their Volunteer program. Mr. Jeff Sjostrom, President at the Galveston Economic Development Partnership, spent one week in the region meeting with community leaders and economic development professionals. Mr. Sjostrom shared the lessons learned by his organization and the community, and shared best practices.

In addition, ECRC staff developed a series of questions to better understand key issues related to economic resilience within the region. The questionnaire was sent to staff involved in planning, public works, tourism and business development in each of the counties. The largest response rate was received from communities that had recently been affected by Hurricane Michael.

Survey Question	Response
Which project listed on your community's Local Mitigation Strategy would provide the largest benefit to the community from an economic recovery standpoint?	• Multi-functional shelter/commerce center • City of Chipley sewer expansion project Emergency generators for critical facilities and communication towers
How is an economic resilience objective currently being incorporated into your organization's programs and activities?	• Washington County strongly supports the Highway 79 Corridor Project • Plans for hardened emergency shelters and emergency generators
What technology or information would be helpful to better incorporate resiliency into programmatic efforts?	• Emergency communications – upgrades are necessary; social media has proven to be useful and was used during Hurricane Michael
What policies, procedures, or programs have worked for your community's ongoing economic recovery or following a past disruptive event (severe weather, oil spill, economic downturn, etc.)?	• SHIP Program and waiving building development fees after Hurricane Michael • The Everbridge Notification System for alerts to citizens
What challenges or barriers to economic resilience or recovery have you observed?	• Lack of local availability of funding to match state and federal grants to improve infrastructure • Communications – cell towers • Lack of infrastructure to support growing population
What do we, as a region or community, need to do that isn't being done? Have you seen resilience activities that other communities have done that you wished your community would have done prior to a disruptive event?	• More reactive than proactive – need to secure appropriate funding to plan ahead better • More education on preparedness • Promoting social groups and creating jobs can lead to greater resilience in individuals
Other Comments	• Housing is a major concern – not enough housing overall, and especially not enough affordable housing

Section 4: Best Practices

Communities can capitalize on opportunities during rebuilding to support their sustainability and livability goals, such as, laying foundations for future growth; making smart energy choices; improving economic competitiveness; expanding location- and energy-efficient accessible housing choices; and enhancing healthy, safe, and walkable neighborhoods—rural, urban, or suburban. The process of pre-disaster planning can help build capacity and increase resilience and sustainability by taking a deliberate look at physical, continuity of operations, environmental, and societal risks and opportunities prior to an incident. Well planned, inclusive, coordinated, and executed solutions can build capacity and capability and enable a community to prepare for the future.

This section identifies opportunities and risks, as well as including best practices and existing national/state guidance for preparedness, mitigation, response, and recovery in each of this Plan's focus areas: economy, infrastructure systems and growth leadership, natural and cultural resources, housing, and civic & governance systems.

Economic Resilience

The Department of Homeland Security's National Disaster Recovery Framework (NDRF) provides the overarching structure that allows federal agencies to coordinate and support recovery efforts at the local level. The Department of Commerce (DOC) as a coordinating agency is tasked with assisting communities achieve economic recovery, and defines economic recovery as follows, "… the ability to return economic and business activities (including agricultural) to a state of health and develop new economic opportunities that result in a sustainable and economically viable community."

For economic resilience and recovery, mitigation efforts may include updating local building codes, fortifying buildings, revising zoning and land use management, and strengthening public infrastructure. Education, outreach, and training can build capacity in preparedness by engaging the business community and developing pre-disaster strategic plans. Initial response during a disaster focuses on saving lives, cleanup, and damage assessment then leading to business re-entry, establishing business recovery centers, and accessing federal resources and programs. Effective response leads to a more effective recovery. Short-term recovery efforts generally take place within a year of a disastrous event and focus on providing immediate services to businesses. Long-term recovery can last for decades and requires thoughtful strategic planning, partnership building, and implementation.

Economic resilience is not only the ability of a community's economy to quickly recover from a disruption or shock, but also includes the ability to withstand a shock or to avoid a shock all together. Strategies and recommendations included in this Plan will help communities anticipate risk, evaluate how that risk can impact key economic assets, and build responsive capacity.

FOCUS AREAS

Focus areas for the identification of best practices and key recommendations in this Plan were defined by relating the Emerald Coast Regional Council 2018-2022 Comprehensive Economic Development Strategy's (CEDS) strategic directions with the FEMA National Disaster Recovery Framework's core capabilities. Focus areas include economy, infrastructure systems, health and social services, natural and cultural resources, housing, and civic and governance systems. Opportunities and risks

2018-2022 Comprehensive Economic Development Strategy's Strategic Directions		National Disaster Recovery Framework's Core Capabilities		Regional Economic Resilience Plan's Focus Areas
Talent Supply & Education, Innovation & Entrepreneurship, and Business Climate & Competitiveness	+	Economy	=	**Economy**
Infrastructure & Growth Leadership	+	Infrastructure Systems	=	**Infrastructure Systems**
Quality of Life and Quality of Place	+	Health & Social Services	=	**Health & Social Services**
Environmental Quality, Protection, and Resilience	+	Natural & Cultural Resources	=	**Natural & Cultural Resources**
Housing	+	Housing	=	**Housing**
Civic & Governance Systems	+	Community Planning & Capacity Building	=	**Civic & Governance Systems**

Economy

The lists below highlight Northwest Florida's economic development strengths, weaknesses, opportunities, and threats – also known as a SWOT analysis. This analysis was conducted by regional stakeholders through Northwest Florida Forward and can be found in the 2018-2022 CEDS.

STRENGTHS

- Natural amenities, beaches, and lifestyle attracts all ages and demographics
- Research & development, testing, talent, and technology development associated with the region's military installations
- Supportive business climate for permitting, licensing, zoning, taxes, and regulations
- Growing commitment to strong regional cooperation
- A consortium of high quality post-secondary educational institutions
- Capable regional economic development organizations led by Florida's Great Northwest and Opportunity Florida
- Strong economic analytics partner – University of West Florida's Haas Center
- An emerging ecosystem of entrepreneurial programs, assets, and networks
- Areas of affordable rural land available for industrial/commercial development
- Industry specialization assets in Aerospace & Defense, Financial Services, Water Transportation, Cybersecurity, Advanced Manufacturing, AI/Robotics, and Unmanned Systems
- Transportation infrastructure: Interstate 10, three commercial airports, two deep water seaports, FGA rail

WEAKNESSES

- Employers report difficulty in attracting skilled talent to fill certain positions
  - Uncompetitive regional wages
  - Lack of urban amenities sought out by young professionals
  - The scarcity of similar career opportunities for certain high skill positions makes it more difficult to attract talent
- Lack of vibrant industry clusters with supply chains: high performing industry clusters are essentially a single firm or location
- Lack of affordable workforce housing in certain area and especially city centers
- Deficiency of industrial sites and buildings, especially in rural areas
- Limited access to startup capital for entrepreneurs and small businesses and lack of a formal process to obtain funding
- Generational pockets of poverty, especially in predominantly minority communities
- Limited access points in transportation infrastructure
- Lack of regional transportation mobility system
- Limited/antiquated wastewater infrastructure
- Declining population, workforce, and tax base in rural areas
- Insufficient funding for workforce development and training
- Lack of funding for rural real estate product development and marketing
- Early childhood education

OPPORTUNITIES

- BP oil spill settlement funds due to economic damages specifically allocated to the eight coastal counties of Northwest Florida
- Strengthening the regional economy beyond tourism and military
- Expanded and coordinated regional entrepreneurship support
- Leveraging federal and private R&D assets to stimulate new private investment and entrepreneurship
- Additional shared business retention & expansion efforts, especially in rural areas
- Further strengthening cradle to career education system
- Investments in public infrastructure
- Creating a demand-driven workforce development initiative able to accommodate large employers
- Creating informal and formal mechanisms to promote greater regional identity and collaboration
- Internal and external marketing and awareness campaigns
- Intra-regional and interstate partnerships, especially connected to Aerospace and Advanced Manufacturing

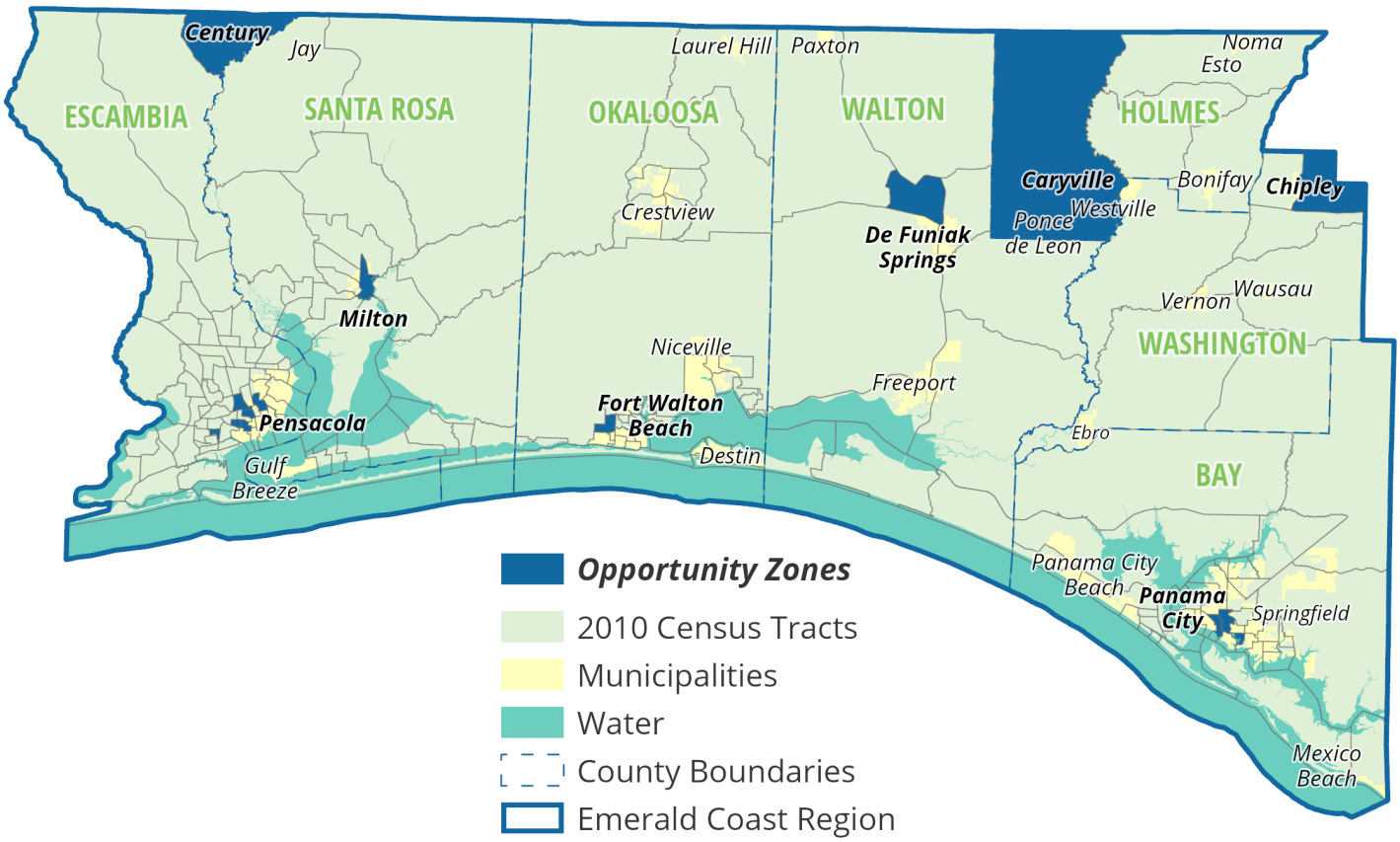
THREATS

- Reduced military investment in the region
- Inability to align resources beyond traditional geographic boundaries
- External shocks that disrupt the tourism sector (e.g., hurricanes or environmental disasters)
- Uncertainty surrounding state economic development funding and support
- Reduced statewide incentives for economic development
- Legislative reallocation of BP oil spill economic damages settlement funding
- Proximity to neighboring states/markets with significant resources to win competitive projects and to recruit Northwest Florida companies

Business Climate & Competitiveness

Opportunity: Marketing of Designated Opportunity Zones

Align infrastructure needs with the identified targeted industry sectors and leverage federal and state funding to bring needed investment into these distressed areas and communities.



Source: Florida Department of Economic Opportunity

Resilience Strategies

Opportunity: Improve access to capital to promote small business growth.

Communities should refine current strategies and adapt policies as needed to encourage capital investment in businesses (especially start-ups), market the region to venture capitalists as well as other potential investors, and work with financial institutions to improve the real estate sector. Simultaneously, the Emerald Coast region should work to expand access to capital for businesses, streamline business support processes, and encourage small business opportunities in local procurement processes.[14]

Opportunity: Partner economic development offices, chambers of commerce, and other organizations with small businesses.

To promote business retention, partnerships with economic development organizations, area chambers of commerce, and other small business organizations should be established. These groups should meet with every business owner regularly after a disaster to assess the needs and connect each business with the necessary resources.

Risk: Disasters can cause physical damage to businesses, preventing continued sales and services.

Opportunity: Develop a plan to provide temporary, shared workspace for businesses and home-based business owners impacted by disasters.

One way to promote business continuity post-disaster is by developing a plan to provide temporary workspaces to businesses in need. Ideally, these would be a large, shared spaces that could house many businesses until necessary repairs have been made to their permanent locations.

Opportunity: Formalize agreements for recovery/resilience roles within each county.

Establishing agreements for recovery/resilience roles within each county prior to a disaster can prevent confusion after a disaster occurs. Identify a staff member from each county's economic development organization and/or chamber of commerce that will be responsible for pre-disaster business continuity planning and post-disaster needs assessments with local businesses.

Opportunity: Create a "one-stop shop" for regional resilience training/further education opportunities.

It is critical to ensure that continued education regarding recovery and resilience is made available to local economic organizations. One way to do this is by developing and maintaining a webpage, newsletter, and/or clearinghouse, or physical community boards, that link organizations to upcoming webinars, trainings, and events from organizations such as the IEDC, FEMA, EDA, APA, and others. The webpage should also link to federal and state partners such as Florida Silver Jackets, DEO, DEM, as well as each county's LMS, emergency management, economic development organization, and other websites.

[14] *Florida Strategic Plan for Economic Development, 2018-2023*

Talent Supply & Education

There are a wide variety of post-secondary education options in the Emerald Coast region. Educational institutions such as the University of West Florida in Pensacola and Northwest Florida State College in Niceville are creating degrees and innovative environments to respond to regional employment needs in engineering, logistics, and healthcare. Technical schools such as George Stone Technical Center in Pensacola and Emerald Coast Technical College in DeFuniak Springs align their curricula with the manufacturing skills needed in the region, such as aviation mechanics, welding, and marine service. Below is a list of schools found in each county.

- **Escambia/Santa Rosa**: University of West Florida, Pensacola State College, Pensacola Christian College, Virginia College Pensacola, Troy University Pensacola, Embry-Riddle Aeronautical University Pensacola, Florida Institute of Ultrasound, Inc., George Stone Technical Center, Pensacola Junior College, Fortis College, Locklin Technical College, UF/IFAS-Milton
- **Okaloosa/Walton:** Northwest Florida State College, Okaloosa Technical College, Okaloosa-Walton Community College
- **Bay:** GCSC, FSU-PC, Florida A&M, Gulf Coast Community College, Troy, UF/IFAS Bay Extension
- **Washington:** Florida Panhandle Technical College, Washington Institute for Specialized Education
- **Holmes:** Holmes County Adult Education School, Chipola College in Jackson County

HURRICANE MICHAEL'S IMPACT

After Hurricane Michael, many families relocated due to housing damage – thus impacting student enrollment. K-12 school building damage and the reduction in student population led to the consolidation of students and temporary deferment of school while repairs occurred and until the student population returned. State funding was requested to allow a carry-over to continue the operation of the Bay County School District and prevent teacher lay-offs. Charter schools had over $60 Million in financial losses, while K-12 Bay District Schools (BDS) had losses of nearly $400 Million.

Before the storm, around 800 students in the BDS System were classified as homeless. Post-storm, the number grew to around 5,000 students – this number is self-reported through BDS's Parent Portal. Because of this, the school system estimates that the total number of homeless students is much greater than reported. Teachers reached out to their students by going to their homes when possible to aid and ensure the well-being of the families.

Florida State University Panama City experienced damage to nearly every building on campus prompting the university to rebuild, reorganize, and rethink operations to include more student housing. Gulf Coast State College was also left with extreme damage to roofs and windows. The destruction of off-campus housing negatively impacted enrollment, leading to a 14 to 16% decline in numbers for the school year. Commuters and displaced students reported an increased driving time of around 45 minutes during peak hours just to travel across the bridge to attend classes.

COVID-19 IMPACT

The COVID-19 Pandemic has resulted in a push for remote learning opportunities, highlighting the necessity of broadband services. However, this has proven to be problematic for some households due to limited broadband access in rural areas and for low-income households. According to the 2014-2018 American Community Survey, 85% of households in the United States are subscribed to an internet provider. However, rural and low-income households' internet subscriptions lag behind urban counties on average. This trend also reflects the quality of broadband access for schools in these areas as well.

According to John B. King Jr., President of The Education Trust, the lack of necessary connectivity and devices widens the learning gap among U.S. students. This results in a long-term educational attainment gap between students with access to broadband services and those without. Considering compounding events such as natural disasters and pandemics, areas experiencing disruptions show an increase in dropout rates from high schools and students are less likely to pursue higher education experiences. Moreover, the remote learning experience varies for each student depending on income and location, and the pandemic has brought attention to a plethora of other factors that dictate students' online learning experiences such as the number of devices available in a household and parental availability.

COVID-19 has expedited the widespread transition to working from home for many individuals. However, inequities in broadband access have limited the ability of some communities to allow for telework. Telework has become an essential aspect of workforce development and an opportunity for community growth, so improving broadband access is crucial for economic development and recovery.

The pandemic has made many inequalities quite apparent, including the disparities in teleworking capabilities. In areas where broadband services are limited, individuals are having to take additional health risks by going into the office to avoid unemployment during this crisis.

"Broadband and COVID-19: Education" Joan Koo and Daniela Leon, 30 June 2020
"Broadband and COVID-19 Series: Telework" Nika Mckenchie, 29 June 2020

Resilience Strategies

Opportunity: Align workforce development and education programs to create employment opportunities and develop and retain talented workers with appropriate skills to meet current and future employer needs.

Continuing to improve workforce system alignment with business needs is a major priority. Educational institutions, workforce organizations, and businesses should partner to identify current and future needs, create curricula, and develop internship and apprenticeship programs.

Opportunity: Offer comprehensive pre-k through post-secondary education to prepare students to become successful workers, entrepreneurs, and leaders.

It is crucial to increase the number of students who advance and finish their education and are ready to enter the workforce. To do this, we must expand technical education and certification programs to increase the number of workers with proper industry credentials and strengthen mentoring and training for future entrepreneurs.

Opportunity: Increase and retain the number of graduates in high-demand fields such as science, technology, engineering, mathematics (STEM), healthcare, and others to meet our region's needs.

Schools should consider expanding development of high-impact and market-relevant education, training, and internship programs starting in elementary school and continuing through post-secondary programs. Expanding effective programs may encourage regional college graduates to remain in the region to build their careers.

Opportunity: Recruit, engage and leverage the talent of veterans, exiting military, and military spouses to strengthen the local workforce.

Businesses in high-growth fields including aerospace, manufacturing, logistics, research, development, and technology are looking to hire veterans and provide them with the necessary training to build careers here. Through the CareerSource Florida network, the Department of Economic Opportunity offers workforce services and assistance to veterans, their spouses, and other family members.

Risk: Lack of broadband services in rural regions limits specific populations from being able to work and learn remotely.

The COVID-19 Pandemic has proven that broadband services are crucial for the continuity of education and work. Without these services, certain populations risk greater exposure to the virus as they are unable to work and learn remotely.

Opportunity: Telecommunication entrepreneurs can collaborate with community initiatives to offer greater access to broadband services allowing citizens to work and learn remotely as needed.

Telecommunication moguls such as Google and Verizon have made efforts to collaborate with communities in need of broadband services through certain initiatives. For example, the Kansas City Coalition for Digital Inclusion has paired up with Google to improve digital access for marginalized communities in the Kansas City metropolitan area. This collaboration with Google Fiber has led to cooperative agreements establishing public access to home technology and broadband. Other companies such as AT&T and Century Link have begun to follow Google's lead and establish large-scale fiber upgrades as well.[15]

[15] *Broadband and COVID-19: Education. Joan Koo and Daniela Leon, 30 June 2020*

Infrastructure Systems

Appropriate capacity and levels of service are foundational to a thriving economy. Without transportation, internet access, water, sewer, electric, and other infrastructure, contemporary businesses cannot function. Building resilience into infrastructure planning and replacement schedules is paramount to ensuring businesses will be able to recover in the event of a disaster.

Port of Panama City. (Bay County Long Term Recovery Plan)

Transportation

Roadways - Northwest Florida's transportation network is characterized by two major east-west connectors. U.S. Highway 98 is a coastal, major arterial collector that traverses along the Gulf of Mexico, making it vulnerable to storm surge and flooding events.

Airports - The Emerald Coast is home to three commercial airports: Pensacola International Airport in Escambia County, Destin-Fort Walton Beach Airport in Okaloosa County, and Northwest Florida Beaches International Airport in Bay County. Additionally, NAS Pensacola, Whiting (and outlying fields), Hurlburt Field, Eglin, and Tyndall are all located in the seven-county region. Smaller airfields include the airstrip in South Santa Rosa County, Bob Sikes Airport, Miracle Strip Aviation in Destin, and the airstrip near Paxton, among others in the region.

Seaports - Northwest Florida has two deep water ports located in the Emerald Coast Region: Port Panama City, and the Port of Pensacola. Port Panama City is located on the Gulf Intracoastal Waterway with access to the Gulf of Mexico and is administered by the Panama City Port Authority. It has a 250-acre inter-modal distribution center with rail access on U.S. Highway 231 and is designated as a foreign trade zone.[16]

The Port of Pensacola is designated as both a foreign trade zone and an enterprise zone. Rail service connects to the Port through the Florida Gulf & Atlantic Railroad and the Alabama Gulf Coast Railway. Interstate 10 and the Pensacola International Airport are also directly accessible from the Port. The Port of Pensacola is 11 miles from the first sea buoy and has no overhead obstructions, making it one of the quickest transits in the Gulf of Mexico.[17]

Rail - The Florida Gulf & Atlantic Railroad runs parallel to I-10 and connects to CSX and Norfolk Southern rail lines. It is intersected by several short line railroads such as the Alabama and Gulf Coast Railway (AGR) and the Bay Line Railroad (BAYL).

[16] *Port Panama City. Florida Ports Council*
[17] *Port of Pensacola. Florida Ports Council*

HURRICANE MICHAEL'S IMPACT

All communities within the impacted area suffered critical transportation issues due to Hurricane Michael. In some cases, it took many weeks to reopen access for use. Most roads were blocked by debris, trees, and other objects, while many low-lying areas were also flooded and unusable following the hurricane. Before the storm, six county or municipally maintained bridges were labeled "Structurally Deficient" by the Florida Department of Transportation. The Laird Bayou structure on County Road 2297 sustained extreme damage during the event. Both driver and pedestrian safety was impacted by substantial damages to traffic signs and signals throughout the county. A reported 12,000 signs were damaged due to the storm.

Hurricane Michael briefly hampered operations at the region's three commercial airports, cancelling numerous flights. Fortunately, none suffered damage and quickly returned to normal operations. Northwest Florida Beaches International Airport resumed full operational capability the following morning but remained inaccessible due to road debris.

Marine services in Bay County were impacted by Hurricane Michael causing the port to remain inoperable for several weeks afterwards. The storm damaged many buildings at Port Panama City, but the docks, cranes, and equipment endured. Power was restored at the port a week after the hurricane.

Bay County Long Term Recovery Plan. July 9, 2019

Resilience Strategies

Opportunity: Continue support for the Statewide Regional Evacuation Study to ensure evacuation routes meet the need of the populations.

A good transportation network is well-connected and provides efficient and safe movement of people and goods. Traffic can more easily find alternative routes on a well-connected network, which is important during disasters, crashes, and everyday congestion. Northwest Florida has a unique set of geographic constraints with its barrier islands, waterways, and Eglin Air Force Base. This coastal area with numerous waterways makes bridges very important in providing necessary connections. During disasters and recovery periods, the stress of evacuation and emergency support systems can pressure even a well-functioning transportation network. One strategy to help alleviate congestion is through the Statewide Regional Evacuation Study to ensure that evacuation routes meet the needs of all populations.

Opportunity: Make U.S. Highway 98 and State Road 30A safer and less congested through use of shuttle programs and/or other public transportation programs.

In South Walton County, there is a pilot shuttle program to help ease congestion and lack of parking along State Road 30A. The program, operated out of Grayton Beach, offers free shuttle rides to Hotz Avenue,

where people can access the beach and restaurants. There have been discussions for future expansion if this program is successful.[18]

Opportunity: Incorporate language supporting nature-based solutions in the transportation/infrastructure sections of Comprehensive Plans and Land Development Codes; require new development to include nature-based solutions. Develop training program to inform elected officials, planners, public works, and members of the community on how to implement nature-based solutions. Seek technical assistance funding and conduct a study that analyzes appropriate locations for nature-based solutions as well as the roadways and bridges that are due for repair and replacement within the next 5 years.

Not only must transportation networks be well-connected, but they must also be built more resilient to storms. One method to making transportation infrastructure more resilient is to implement nature-based solutions. "Nature-Based Solutions use natural materials and processes to reduce erosion, wave damage, and flood risks, serving as alternatives to, or ecological enhancements of, traditional shoreline stabilization and infrastructure protection techniques. Examples include conservation, restoration, or construction of beaches, dunes, marsh, mangroves, maritime forests, and reefs." [19] The Federal Highway Administration's *Nature-based Solutions for Coastal Highway Resilience: an Implementation Guide* is designed to help transportation practitioners understand how and where nature-based and hybrid solutions can be used to improve the resilience of coastal roads and bridges.

Risk: Seaports' coastal location puts them at risk of coastal hazards.

Seaport resiliency starts with the ability to coordinate freight shipments through ports in times of stress on existing infrastructure and operations. Due to the nature of ports, they are typically at risk of coastal hazards. Port infrastructure must be capable of withstanding impact from high winds, storm surge, and severe flooding. This requires methodical coordination amongst personnel and stakeholders to ensure all aspects of a resiliency plan are put into action appropriately. Successful coordination with local governments is paramount to ensure that ports are included as part of the local and state critical infrastructure. More specifically, this ensures that access to and from the port along with essential utilities remain uninterrupted or are available as soon as possible after the event occurs.[20]

COVID-19 IMPACT

The COVID-19 Pandemic has impacted the airports in the Emerald Coast Region. According to the Haas Center, scheduled air travel seat capacity has been down 60% from other domestic airports since February 29, 2020.

Travel and Spending Assessment of Florida Residents During the US COVID-19 Outbreak. UWF Haas Center. May 4, 2020

[18] *Shuttle pilot program aims to help with traffic in Grayton Beach. Kellie Sanchez, 15 July 2020*
[19] *Nature-based Solutions for Coastal Highway Resilience. FHWA, 2019*
[20] *Seaports Resiliency Report. Florida Ports Council*

Each storm event is unique; therefore, it is critical for seaports to carefully assess their infrastructure resiliency from multiple perspectives.

Opportunity: Create a plan to ensure correspondence with necessary agencies needed to clear channels and waters for port access post-event.

Perhaps the most critical priority for port disaster planning is the need to ensure channels and waters are cleared for access to the port after a disaster. This typically requires coordination between the port, the U.S. Coast Guard, the U.S. Army Corps of Engineers, and the National Oceanic and Atmospheric Administration. Access to the port is crucial to resume operations, and a plan should be put in place prior to a storm to ensure appropriate correspondence with the necessary agencies.

Opportunity: Ports should ensure they are deemed critical infrastructure with local and state entities to promote prompt response and have emergency generators on standby.

Another cause of delay for reopening a port after a storm event is the loss of power. In many cases, most other infrastructure assets rely solely on electricity, and past experiences have shown that because these utility operations were outside of the port's control, they were unable to address these issues internally causing even greater delays to resuming normal operation. Some of the best practices for storm preparation include engagement with local utility providers, as well as acquisition of emergency generators and the necessary fuel for operation for three to five days. Many Florida ports have set up agreements with local governments and utility agencies to secure priority treatment in power restoration.

Risk: High waters from hurricanes, flash floods, and heavy rains can damage railroad equipment.

Some of the greatest known threats to railroads are high waters from hurricanes, flash floods, and persistent heavy rains. Water can weaken rail bridges, wash away ballast that stabilizes tracks, and damage railroad signaling systems and electronic trackside equipment. Each of these elements, when not functioning properly, can threaten the rail service.

Opportunity: Ensure that coastal sections of the rail network are equipped with high-water detectors.

Railroads are proactive in their monitoring and preparation for flooding and other water-related risks. However, there are ways to ensure further resiliency in Northwest Florida. In some networks where flooding and water-related events are more prominent, high-water detectors are used to send notifications about track conditions to approaching trains. This helps them to determine whether an inspection needs to occur before passing through or to slow the train. Ensuring that our rail network has these devices available is critical for promoting resilience.[21]

[21] *Resilient Rail: How Freight Railroads Prepare for & Respond to Extreme Weather. Association of American Railroads*

Flood Protection: Stormwater, Dams, & Levees

Stormwater - Stormwater systems are a critical component to managing drainage. Conventional stormwater systems seek to take water away from urbanized areas through piped drainage and water treatment systems.

Resilience Strategies

Risk: Stormwater and drainage systems are vulnerable to flooding events.

Storm surge and wet weather events can tax stormwater infrastructure and test its true capacity to properly contain, drain, and move water to designated areas. Flooding is an on-going issue that affects many different areas. Low-lying property or those close to riparian areas are particularly vulnerable. A built environment with a lot of impervious area also needs a strong system to handle runoff. Flooding often occurs during tropical storms and hurricanes but can also occur during a heavy rain event that is not associated with a serious weather system. In April 2014, heavy rains in the Florida Panhandle brought peak-of-record flooding on Bayou Marcus Creek and over $21 Million in damage to Escambia County's infrastructure.[22]

Opportunity: Green infrastructure can be a cost-effective approach to stormwater management and can help drive economic development.

In transportation planning, street design can incorporate green streets and alleys. A green street is a type of stormwater management strategy that uses vegetation, soil, and engineered systems such as permeable pavements to slow, filter, and cleanse stormwater runoff from impervious surfaces.[23] These streets are designed to collect rainwater at its source – where the rain falls - unlike traditional streets that direct water into a storm sewer system that discharges into surface waters, rivers, and streams.

There are up-front costs for green infrastructure, such as an underground storage system that infiltrates stormwater into the ground, but there are numerous social, environmental, and economic benefits. In addition to physical enhancements and construction, acquisition of high absorption conservation lands can help prevent flooding in riparian and coastal areas. Alachua County uses a combination of development regulations to incentivize green infrastructure and land conservation through what is known as the Alachua County Greenprint. A developer may obtain credit for a requirement if a storm water pond is "enhanced" and qualifies as green

HURRICANE MICHAEL'S IMPACT

Hurricane Michael left large quantities of debris and caused mass damage to ditches, outfalls, retaining ponds, and other stormwater conveyances. This paired with the extensive loss of trees and their natural ability to reduce erosion caused by rain and by water absorption through root systems, has made flooding and erosion a major concern in Bay County.

Bay County Long Term Recovery Plan. July 9, 2019

[22] *Historical Flooding – Water Resources. USGS*
[23] *Learn About Green Streets. EPA*

infrastructure by incorporating biological diversity and water quality treatment beyond minimum county and state regulations.[24]

Risk: Following a hurricane event, communities are susceptible to flooding and further damage from general inclement weather, drainage blocks, and future hurricanes.

Just because a community is struck by a hurricane one year does not make it safe from hurricanes later in the same season or the following year. Following a hurricane, both buildings and people are vulnerable to typical rain events as recovering populations may still be temporarily housed in tent communities and/or have tarps on their roofs. As seen in Bay County after Hurricane Michael, areas that were not prone to flooding flooded after the hurricane due to debris clogging natural and constructed stormwater drainage systems.

Dams & Levees - Dams provide lifeline services such as water supply, irrigation, and power, all of which are critical components for recovery after a disaster. This makes the failure of dams potentially catastrophic for a community or region.[25]

Resilience Strategies

Risk: Compliance with regulations does not always guarantee reliability or safety of dams and levees.

In recent years, the dam safety community has pushed for stronger regulatory and owner (both private and public) safety programs. Generally, regulatory compliance, as defined by legislative mandates and safety standards, remains the driving motivator for dam safety regulators along with both public and private dam owners. These regulations are created to reach minimum safety standards for built infrastructure, but unfortunately, compliance does not always ensure reliability or safety of dams and levees. Failures can occur, sometimes for reasons not considered by the original design or due to unforeseen circumstances.

Opportunity: Broad levels of mitigation for communities can be achieved through specific planning tools – e.g. emergency preparedness plans, providing the community with specific event information, etc.

Strategies that reduce the likelihood of dam or levee failure, no matter how well implemented, can sometimes be overwhelmed by large storm events or other unforeseen circumstances (e.g. errors in dam or levee design, or operation and maintenance issues). When failure occurs, the effects on the community and stakeholders can be broadly mitigated or redistributed in time and space through tools such as:

- Emergency preparedness – including regional public health planning, emergency preparedness planning, flood warning, flood fighting, evacuation, and sheltering
- Identifying and securing disaster relief from government and nongovernment sources
- Encouraging individuals and businesses to secure flood insurance to protect property
- Strong pre-disaster planning for post-disaster recovery and reconstruction, including the selection of staging areas and temporary housing sites
- Relocation of structures out of the flood zone

[24] *Alachua County Green Infrastructure Investment Program. National Association of Counties, 2008*
[25] *Dam and Levee Safety and Community Resilience: A Vision for Future Practice. The National Academies, 2012*

Some communities use tools that assist the community by providing specific information such as the number of people likely to be injured or killed in an event, or the time required for evacuation. This information can help a community create better evacuation plans along with other strategies to reduce the exposure of threatened populations.

Opportunity: Acquisition and protection of floodplains offer numerous benefits to a community.

Environmental resilience is a critical component to community resilience, and floodplains are part of that resilience effort. Floodplains offer important habitat for both plants and animals and serve as migration corridors for numerous species. Protecting floodplains from development can benefit a community with wildlife protection, lowered flood heights, protection of downstream development from flood damage, improved water quality, and preservation of environmental resources for educational and recreational purposes. Some strategies frequently implemented to preserve and restore natural resources and functions of floodplains include:

- Public acquisition of floodplains
- Acquisition of flood plains by land trusts or other nonprofit organizations
- Regulations that limit the intensity of development in floodplains such as wetland ordinances, overlay zones, and cluster and transfer of development ordinances
- Tax incentives offering lower property taxes to those who agree to keep their land free of development by dedicating open-space easements to the public

Utilities

Drinking Water & Wastewater Utilities - Drinking water and wastewater utilities are vital services to any community. Water facilities face many challenges including hurricanes, tornadoes, floods, aging infrastructure, and contamination.

HURRICANE MICHAEL'S IMPACT

Most communities affected by Hurricane Michael suffered substantial losses in potable water delivery and wastewater processing. Loss of electricity added other challenges leading to the failure of pumping stations and wastewater treatment plants. The Military Point Advanced Wastewater Treatment plant that serves unincorporated Bay County, Parker, Callaway, Mexico Beach, Springfield, and Tyndall Air Force Base was critically damaged and only accessible via helicopter.

Bay County Long Term Recovery Plan. July 9, 2019

Resilience Strategies

Risk: Many sectors may face disruptions if water utilities are rendered unavailable for several days or weeks.

During an emergency, communities often face service interruptions in water services, along with other critical sectors such as power and emergency services. Many critical infrastructure sectors have interdependencies with drinking and wastewater utilities, including the energy, food and agriculture, chemical, healthcare and public health, emergency services, and transportation sectors.

Recognizing these critical interdependencies between water utilities and other sectors and building relationships between them are crucial for creating community resiliency.

Opportunity: A Water Resiliency Action Plan can create further emergency preparedness for outages in communities.

If an emergency disrupts water service, state or federal assistance can take days or weeks to arrive. This makes local preparedness a key step to promote community resiliency. Natural disasters and other threats can lead to serious public health and economic impacts, so planning is critical. The EPA's Water Resiliency Action Plan (WRAP) Kit guides communities through hosting a water emergency workshop, which can help communities prepare for such events before they occur. The workshop brings the community together to discuss goals, challenges, roles, and responsibilities in water emergency preparedness.

Opportunity: The Water Network Tool for Resilience software package may estimate potential damages to water infrastructure from a disaster.

The EPA and Sandia National Laboratories created the Water Network Tool for Resilience (WNTR), a comprehensive scientific software package that helps assess a drinking water systems' resilience to natural

disasters. This software improves upon already available capabilities through fully combining hydraulic and water quality simulation, damage estimates, response actions, and resilience metrics into a single platform. WNTR is available as an open source software package and can be applied to a variety of disruptive incidents and repair strategies.[26]

Energy - The ability of energy infrastructure to maintain operation after an event is one of the most immediate necessities for health and human safety as well as for emergency response. People depend upon having power for the operation of medical equipment, food storage, and light for everyday activities. Resilience and the ability for rapid recovery in the power system can be accomplished by securing the power grid through mitigation techniques, using modern technologies and materials, and by diversifying power sources to include alternative fuels and generators.

Resilience Strategies

Opportunity: Vegetation management, infrastructure inspections and replacements, and placing utilities underground are all techniques used to reduce the risk of outages.

Utility companies mitigate risk of outages primarily by hardening overhead distribution facilities through vegetation management, infrastructure inspections and replacement, or by undergrounding utilities. Vegetation management including regular tree trimmings within the right-of-way or utility easement is especially important for weather events with high wind speeds that could cause branches to collapse onto power lines. Utility companies generally manage vegetation within the right-of-way or utility easements; however, residents and businesses must also manage vegetation near their homes and buildings.

HURRICANE MICHAEL'S IMPACT

After Hurricane Michael, nearly 7,000 poles were used to repair the electric system in Gulf Power's service area alone. Gulf Power reported that transmission structures were severely damaged, and poles and wires were down everywhere. Approximately 7,500 workers came from outside the area to help restore power.

The economic damage of repairing the grid was felt by Gulf Power customers when the utility company implemented an $8 per 1,000-kilowatt hour increase to monthly bills to recuperate their hurricane response costs.

"Preparation key to power restoration after Michael", Auriette Lindsey, 29 May 2019

Damaged transmission structure. Bay County Long Term Recovery Plan. July 9, 2019

[26] *EPA Researchers Help Prepare Drinking Water Facilities for Natural Disasters. EPA, 24 September 2019*

SUCCESS STORY

Combating extended power outages can be achieved by undergrounding utilities. Some communities like St. Johns County require new developments to provide underground utilities. The State of Florida has taken storm hardening measures one step further with approval of Senate Bill 796. The bill creates a separate Public Service Commission process that allows utilities to collect money from customers for storm-protection projects, such as building underground power lines. Coastal development and historic areas are prime targets for this type of project.

Utility companies regularly inspect the power infrastructure system and replace damaged or aging materials. Wooden poles can be inspected for structural integrity or replaced with stronger materials.

Moving utilities underground is expensive upfront, but practically removes powerlines from risk of wind damage. A North Carolina utility company compared 5 years if underground and overhead power reliability data and concluded that the frequency of outages on underground systems was 50 percent less than for overhead systems. However, the average duration of an underground outage was 58 percent longer, due to lengthier troubleshooting and restoration times, also leading to higher repair costs.[27]

Opportunity: Diverse energy options and redundancies in energy sources is a great way to ensure continued fuel availability.

Solar technology can address short term challenges to the electric grid. Solar systems can be shipped into an affected area and provide energy in a short amount of time after a disaster. This environmentally friendly technology can be deployed and used by critical operations until the energy grid is repaired. Traditional emergency response does not include solar systems; however, private industries such as Tesla sent battery systems to be paired with existing solar arrays to hurricane devastated areas of Puerto Rico after Hurricane Maria in 2017, demonstrating the technology's usefulness.[28] It is important for relief planning including solar solutions to properly charge, store, and prepare for deployment before disasters.

Risk: Fuel shortages are typical after a disaster.

Fuel shortages are common when disasters strike, due to a spike in consumer demand prior to a disaster and the impact on the energy industry's ability to distribute energy products. Power outages can restrict gas stations' ability to distribute fuel.

Opportunity: Investment in alternative fuel infrastructure can lead to greater resiliency overall.

Because natural gas is distributed through underground pipelines, delivery disruptions occur less often than electrical outages. Renewable energy in the form of solar panels is also a smart choice in the event of an emergency. Investing in alternative fuel infrastructure and vehicles can bolster emergency response, business continuity, and support overall economic resiliency. The Federal Highway Administration is supporting the recognition of a national network through their alternative fuel corridors designation

[27] *Front-Line Resilience Perspectives: The Electric Grid. Global Security Sciences Division, November 2016*

[28] *How Solar Power is Impacting Natural Disaster Relief, World Economic Forum*

program. The Emerald Coast region can work towards designation of an alternative fuel corridor through a network of alternative fuel stations and charging infrastructure along Interstate 10.

Compressed Natural Gas (CNG) is a low-cost fuel option that can serve many of the transportation needs of a region. CNG can be used in place of gasoline, and its combustion produces fewer undesirable gases. The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy promotes CNG to aid in disaster response. Natural Gas is supplied by underground pipelines enabling CNG service stations to typically stay up and running. These stations usually have a CNG generator to keep operations going even during a blackout. Emergency vehicles can be CNG powered and have an easier time operating in an area after a disruption, even when traditional gas stations are out of fuel. Fuel resiliency requires an area to invest in CNG infrastructure so it can properly serve emergency vehicles and other energy needs when gasoline and diesel are unavailable.

Communications – Emergency, Cell Phones, & Broadband - Communication devices affect almost every aspect of life. Their broad range of applications make them essential to society. They affect the ways people work, socialize, and conduct research, among other activities. Communication devices also connect us to emergency services – a critical function in times of crisis.

Resilience Strategies

Risk: Limited emergency communications

Operational continuity for both private businesses and local governments is important in reducing economic and human impact after a disruption. Strong wind events can compromise wireless communications for extended periods of time. This impacts emergency response, 911 calls, and government services such as scheduling transportation disadvantaged trips.

Opportunity: To stay in constant communication, public safety organizations need a reliable and high-speed network.

Network path diversity can help constant flow of information and connection. This is accomplished by using different types of technology or two different physical paths. This involves investing in projects for alternate leased-line dark fiber paths and wireless, cloud-based services. Another method is ad-hoc networks, which use immediate, short-term response technology. A wireless transport device such as a COW (cellular on

HURRICANE MICHAEL'S IMPACT

After Hurricane Michael, communication between citizens, local government, and state agencies was stressed, as cellular communication towers were damaged. Physical damage to the devices and components of a communication network can cause network congestions, misinformation disbursement, and delayed emergency response. While most other cell service was rendered unavailable in Bay County, some people reported the AT&T worked intermittently in certain regions.

Bay County Long Term Recovery Plan. July 9, 2019

wheels) or COLT (cellular on light trucks) is used to provide critical phone service when the cellular networks have been cut off.[29]

Satellite has been suggested as an alternative method to access communication networks as it does not rely on vulnerable terrestrial infrastructure. It offers a diverse path – one that can offer continuity for businesses and the government in times of crisis. For example, during the aftermath of Hurricane Maria in Puerto Rico, satellite connections were established to provide phone and internet service to citizens and first responders. This was the way the National Oceanic and Atmosphere Administration was able to notify FEMA and other authorities before a dam broke, worsening the flooding. On-going development of satellite technology has contributed to increased speeds and reduced costs, which makes this an affordable alternative especially in times of crisis.[30]

Solid Waste Services - Solid waste services provide a clean environment. Collection of trash and recyclables plays a pivotal role in the sustainability and cleanliness of our region.

COVID-19 IMPACT

The COVID-19 Pandemic has made access to cell phones and broadband services more critical than ever. Many workplaces have moved to teleworking to reduce exposure to the virus, making internet access vital. Schools have moved to remote learning during the pandemic, while healthcare systems are using telehealth services. Rural communities have long struggled with access to broadband, and broadband access has been a main indicator of disparities in economic and social development opportunities. This has become much clearer during a pandemic that demands the rapid expansion of internet connectivity. Economic development and recovery, particularly in regions where impacts have been exacerbated by a lack of reliable internet, will increasingly depend upon expanding broadband access.

"Broadband Highlighted as Economic Development Issue During Coronavirus Pandemic." RestoreYourEconomy.org. 11 June 2020

Resilience Strategies

Risk: Natural disaster debris can hinder recovery efforts.

Natural disasters challenge communities in numerous ways – through loss of power, destruction of homes, and through the generation of mass quantities of debris. Large amounts of debris make recovery efforts particularly difficult by hindering emergency personnel, damaging or blocking access to necessary infrastructure, and posing threats to human health and the environment.

Opportunity: Pre-incident planning for debris management can help lay the groundwork for a community's response to a natural disaster.

The EPA recommends pre-incident planning be included in debris management plans. While even the most thorough debris management plans cannot account for every scenario, having a plan is still important as it lays the groundwork for a community's preparedness and response to a disaster, especially when it has

[29] *How Carriers Are Preparing for the Unthinkable. Diana Goovaerts,15 September 2015*
[30] *Built-in resiliency through satellite communications can save time, lives in disaster response. Hughes, 6 July 2020*

widespread impacts. Communities are encouraged to create debris management plans that are scalable for both small and large natural disasters. To develop an effective debris management plan:

- Consult with key stakeholders and sectors including transportation, sanitation, emergency response, environmental, agricultural, public health, public works, zoning, and other industry and business leaders
- Identify potential debris sources, including harmful components, and possible quantities that may be generated by a disaster
- Evaluate existing reuse and recycling programs in the area to determine if they can handle disaster-related waste products
- Consider different waste collection strategies, such as separating debris into different waste streams before transporting off-site
- Choose locations and capacities for debris management sites that are appropriate for debris staging, temporary storage, and decontamination activities
- Select potential reuse, composting, recycling, treatment, and disposal facilities, including mobile treatment units, that are available to the community, state, and region, and determine their daily and long-term capacities
- Develop a debris management-focused community outreach plan
- Address any health and safety concerns for debris management operations (e.g. hazardous chemicals, asbestos-containing materials, animal carcasses, etc.)

HURRICANE MICHAEL'S IMPACT

As of February 2019, 10 Million cubic yards of debris had been collected and cleaned up from Hurricane Michael. Cleanup efforts have continued since, though the amount of debris collected has not been reported.

"How much Hurricane Michael debris has been collected? Enough to fill 8 Empire State Buildings" Katie Landeck, Panama City News Herald, February 4, 2019

A resident surveys Hurricane Michael debris. (Zach Whittman/Bloomberg)

Health & Social Services

In a resilient health and social service system, the well-being of the community is a shared responsibility between all community members. Mental and physical health, health care access, preventative care, environmental health, and managing the impact of the built environment all play critical roles. Effective health and social services ensure that social inequity is addressed, and programs are suited to the needs of all persons, particularly vulnerable populations. The Emerald Coast region has numerous hospitals and healthcare facilities ranging from acute care to behavioral health to rehabilitation.

HURRICANE MICHAEL'S IMPACT

Immediately after Hurricane Michael struck, hospitals were used as shelters. However, there were many issues to contend with including lack of communication and transportation, facility and utility damage, security, access to pharmaceuticals, and loss of outpatient and specialty treatment space. Within just a few hours of the storm most medical facilities were without power and had to run off generators for over a week. Bottled water was used to flush toilets. Patient evacuation was a challenge due to the amount of debris on the roads and reduced communication.

Due to the loss of other community care facilities, the hospitals were unable to discharge aging patients and those with mental health conditions. This caused a delay in hospital turnover and intake of patients through the emergency rooms. Severe damage to the hospitals and other private care facilities led to a loss of specialty care providers, nurses, and other support staff.

Communication became the most critical issue after the storm. Hospital staff was unable to communicate with the Emergency Operations Center and other community response entities. Most cellular services in the area were impacted, with only AT&T providing intermittent service in certain areas. Satellite phones were used, but providers and staff indicated that they only got reception in stairwells and outside. Communication became an even more concerning issue when providers were unable to gain access to resources necessary to treat and evacuate patients.

Resilience Strategies

The healthcare system is very diverse and offers a variety of different services. Patients receive care for many different reasons in various settings, all of which can be disrupted due to a disaster.

Risk: A natural disaster can cause stress on hospital systems and other health services

Disrupted operations of various nonhospital healthcare services can cause stress on area hospitals. In the event of a disaster, hospitals may have to absorb displaced patients from other evacuated hospitals and facilities, in addition to continuing routine patient services and treating event-caused injuries and illnesses.

Opportunity: A continuity plan can help medical facilities address how essential services will be delivered in the event of a storm.

Medical organizations should consider developing an operations/business continuity plan that addresses how they will deliver essential services in case of a disruption. This plan will decide what services are truly essential under different sets of circumstances. Relevant portions of the plans should be shared with partners, patients, vendors, and other authorities to help enable continued provision of goods and services that the organization is dependent on.

Opportunity: Identifying alternative sites for provision of essential services can keep medical services operational.

Medical facilities should identify alternative locations from where it can provide essential services such as dialysis treatment or prescription pickup. This may also include a backup location where the organizations' operations would be located, another healthcare facility for patients to be referred or transferred to, as well as additional provider sites that could amplify the capacity of the primary operating location. External resource locations, such as federal medical stations, should also be identified.

COVID-19 IMPACT

COVID-19 has emphasized the importance of tele-healthcare - it is no longer a commodity but a necessity. Telehealth allows access to quality healthcare from home, and while seemingly perfect, fiber broadband access is an issue. Broadband has changed the healthcare sector through supporting interconnectivity between healthcare locations, partners, and patients. It allows patients to receive a wide variety of services from the comfort and safety of their homes. However, according to the Federal Communications Commission (FCC), over 20 million Americans lack access to high-speed broadband services. In rural regions, around one-fourth of the population does not have broadband access. As the healthcare industry moves more toward telehealth care, rural residents find themselves unable to access these services, contributing to greater health problems in these areas.

This pandemic has made remote healthcare services a necessity, bringing the topic of broadband services to provide healthcare front and center. The FCC created the COVID-19 Telehealth Program, funded through the CARES Act, which allows healthcare providers to provide services to patients remotely during the pandemic. The program fully funds healthcare providers' telecommunication services, information services, and any devices necessary to provide critical connected care services.

Opportunity: Mobile healthcare vehicles offer additional mechanisms for care delivery to area patients.

Mobile healthcare vehicles serve as an additional asset in times of crisis. Hospitals and healthcare facilities should create a plan to use existing mobile healthcare vehicles for additional treatment options after a disaster. They should consider how these assets could be used to boost capacity or to serve as a secondary mechanism for care deliver if regular facilities are rendered unavailable.

HURRICANE MICHAEL'S IMPACT

After the storm, behavioral health was deemed a critical issue. Several facilities supporting elderly and hospice patients closed due to damage. Six months post-storm, the adolescent treatment center, male housing center, substance abuse center, detox center, and detention center were still closed or running at reduced capacity.

Immediately after the hurricane struck, the lack of necessary telecommunication between care facilities and care professionals became a major issue – behavioral health representatives were attempting to support the programs and triage patients, but the hospitals were unaware. Their assumption was that if facilities were closed, mental health providers were not treating patients. This communication breakdown between the hospital, EOC, and behavioral health facilities led to patients not knowing where to go, and by default going to the hospitals and being admitted. To worsen matters, the hospitals did not have access to medications, prescriptions, or care records, resulting in many patients being transferred out of the county for continued care.

Opportunity: Creating mechanisms by which the public can obtain information on the status/availability of health facilities and services can make seeking treatment more feasible and help operations continue after a storm event.

Communication, public awareness, and situational awareness are key to creating resilience after a natural disaster. One way to promote this is through mechanisms where the public can obtain information on the status of healthcare facilities and services. While these mechanisms are for ensuring communication and awareness of the public, they are distinct from the communication that must also occur among healthcare and workers to create situational awareness among providers. For example, at an organizational level, this might include status updates on websites as well as call lines belonging to the service provider. At a community level, this could include services like 211 or 311. Information portals or hotlines should be kept separate from crisis intervention hotlines or emergency services numbers such as 911.

Opportunity: Developing plans and training exercises can prepare personnel for disasters.

A critical part of disaster preparation and planning is through engaging workers. This involves including them in various activities of preparedness, such as developing plans, training sessions, and designing and evaluating exercises. Healthcare facilities and public agencies should train workers on their specific roles and responsibilities in case of a disaster so that the workers can fully understand what is expected of them and how they can contribute overall.[31]

Risk: Natural disasters can disrupt the flow of services to vulnerable populations.

Disasters increase demands on social services due to the impacts on vulnerable populations, the creation of newly vulnerable populations, disrupted service delivery, as well as displacement of both providers and clients. Social service providers are expected to mitigate the human impacts of disasters and fill the holes

[31] *A Community Checklist for Health Sector Resilience Informed By Hurricane Sandy. Eric Toner, 10 August 2017*

in resources and capabilities. For example, when daycare facilities and schools are closed, children who have no safe place to play can be at increased risk of injury, leading to stress on parents, especially when they are expected to return to work. Post-disaster communities commonly experience increases in mental health and substance abuse issues, along with an increase in domestic violence and child maltreatment.

Opportunity: Planning for fluctuations in social services workforce needs can facilitate rapid recovery post-disaster.

One of the most challenging parts of planning prior to a disaster is trying to anticipate the social service resources needed after such an event. Each disaster has a different impact depending on the level of infrastructure and housing damage, as well as the number of people impacted. Regardless of this uncertainty, communities need to plan for the array of services that will be needed and how they will be provided. This planning requires clear articulation of who is responsible for recruiting and training staff and volunteers so that they will be familiar with their roles and responsibilities prior to a crisis. The training provided should cover mental health needs and post-disaster issues such as accessing benefits.

When a disaster occurs, communities often need to intake more workers, grief counselors, and other professionals to help respond to previously vulnerable populations as well as the newly vulnerable populations. The number of available providers often fluctuates throughout the different phases of disaster recovery. During the immediate post-disaster period, communities may experience a loss of available providers because the providers themselves were affected by the disaster and are incapable of offering services. The influx of untrained volunteers can further contribute to the drain of professional resources due to the time providers must spend supervising and training them. As recovery progresses, providers sometimes experience burnout and need breaks, and volunteer support may dwindle. This change in workforce capacity must be planned for ahead of time. The social service workforce capacity can be preserved and expanded post-disaster by:

- Rotating workers through difficult assignments, assisting caseworkers with childcare or other disrupted services, and offering peer support to prevent burnout;
- Recruiting professionals from other communities and regions;
- Integrating providers from relief groups such as the Salvation Army and American Red Cross;
- Developing systems for including random on-the-spot volunteers; and
- Maintaining a list of translators and bilingual providers to reach non-English-speaking populations.[32]

Opportunity: Hosting a forum that includes various populations and stakeholders can help identify the needs of a wider range of citizens prior to disaster.

One way to ensure that the needs of citizens are being met during a disaster is through hosting a public forum to discuss planning efforts. This would include various populations and non-governmental stakeholder groups such as faith-based organizations, nonprofits, persons with access and functional

[32] *Healthy, Resilient, and Sustainable Communities After Disasters: Strategies. National Academies Press, 10 September 2015*

needs, and ethnic support networks. Prior to the forum, it is critical to ensure that outreach is conducted and members from traditionally underrepresented groups are included in emergency planning efforts.[33]

[33] *Colorado Resiliency Framework, 2015*

Natural & Cultural Resources

Natural Resources

Well-known for its white sand beaches and emerald waters, Florida's Panhandle draws visitors from around the world. The region offers numerous freshwater and saltwater fishing and recreation spots and is home to the famous Apalachicola Bay oysters. Northwest Florida's landscape also has numerous hardwood forests, freshwater rivers, and natural springs.

The Emerald Coast region has four major watersheds – Perdido River and Bay, Choctawhatchee River and Bay, St. Andrews Bay, and Pensacola Bay System. These areas offer critical habitat to a variety of wildlife and serve as recreational areas for numerous visitors.

According to the U.S. Fish and Wildlife Service and U.S. Census Bureau (2018), more than 103 Million Americans – a staggering 40% of the U.S. population 16 years and older – participated in some form of fishing, hunting, or other wildlife-associated recreation such as birdwatching or outdoor photography in 2016. In doing so, they spent an estimated $156.9 Billion on equipment, travel, licenses, and fees. These expenditures represent almost one percent of the nation's Gross Domestic Product – creating and supporting thousands of jobs and communities.

HURRICANE MICHAEL'S IMPACT

Prior to Hurricane Michael, estuary water quality was a major focus. However, the mass quantities of debris after the storm made water quality an even more critical issue. Over one-third of Bay County's total square mileage is water – the 740,000-acre St. Andrews Bay Estuary consists of Econfina Creek and the contributing spring watershed as well as St. Andrews, North, West, East, and St. Josephs Bays. The watershed also includes Deerpoint Lake Reservoir and Lake Powell, along with other coastal dune lakes, contributing basins, and tributaries. Nearly 3 million cubic yards of debris filled the estuary after the storm. Another major concern after the storm was the rising water table. This caused septic tanks to float and flushed waste into the surrounding water bodies.

Michael also took a hefty toll on Bay County's beaches. The incredible storm surge and 15 to 20-foot waves caused substantial erosion along the coastline. From Panama City Beach to Mexico City Beach, the erosion and reconfiguration of main waterway entries into bays and inlets have contributed to the need for restoration and protection of the county's trademark beaches. Nearly one million cubic yards of sand were lost due to the storm, impacting the dune system and affecting the main road that is now vulnerable to smaller storm events in many regions.

Bay County Long Term Recovery Plan, July 9, 2019

Resilience Strategies

Risk: Hurricanes and other natural disasters can cause severe erosion along the coastlines.

Beaches that had recovered from the 2010 Deepwater Horizon Oil Spill were struck again during Hurricane Michael. This time, construction and other debris were strewn everywhere, and much less sand was left. The U.S. Geological Survey expected the surge to erode the base of the dunes on around 75% of Florida's Gulf Coast Beaches, washing out the remaining turtle nests for the season. Over wash relocated sand across coastal habitats, depositing it inland and causing substantial changes to the landscape. Freshwater wetlands were submerged with ocean water.[34]

Opportunity: Beach nourishment is a natural way to buffer against the erosion experienced due to hurricanes.

Several states have shifted toward alternative shoreline stabilization techniques. Unlike structural projects, nature-based protection measures improve the natural ability of shorelines to absorb storm energy without disrupting natural coastal functions. One strategy for handling coastal erosion is with beach nourishment. Beach nourishment is the placing of additional sand on a beach to act as a buffer against erosion or to promote the recreational value of the beach. This allows sand to shift and move around with waves and currents.

Beach nourishment has a few key benefits that make it a worthwhile technique to consider. It can help beaches protect upland areas from flooding, mitigate erosion, and absorb wave energy. Beaches offer a buffer between storm waves and the land and help prevent harmful waves from reaching dunes and other upland developments. When the beach sediment is naturally moved offshore, it causes waves to break farther from the shoreline, weakening them before they hit the shore.[35]

Opportunity: Coastal restoration can protect a variety of coastal resources while protecting the environment, businesses, homes, and other assets in the region.

Even after implementing coastal shoreline erosion and risk reduction measures, there is still some risk to coastlines during severe storms. Coastal restoration projects can be a cost-effective strategy for communities. There are numerous benefits of returning land to its previously undeveloped state such as buffering storm surges; defending coastal homes and businesses; insulating carbon and other pollutants; creating habitat for critically important fish species; and restoring open space and wildlife that support recreation, tourism, and the rich culture of coastal communities.[36] Furthermore, natural systems such as wetlands, dunes, and riparian forests offer protection to nearby areas from floods and hurricanes by collecting stormwater. For example, one acre of wetlands can harbor around 1.5 Million gallons of floodwater.

Natural systems like these are often less costly and easier to maintain than gray infrastructure systems. Coastal wetlands have been estimated to provide around $23.2 Billion worth of storm protection services

[34] *Hurricane Michael's fury will have longstanding environmental impacts. Jim Waymer, Florida Today, October 12, 2018*
[35] *U.S. Climate Resilience Toolkit (managed by NOAA)*
[36] *U.S. Climate Resilience Toolkit (managed by NOAA)*

in the U.S. each year. These savings alone make coastal restoration an appealing option before even considering the other additional benefits.[37]

Opportunity: Coral reef systems can serve as a barrier for coastal regions to reduce the impact of storms.

In coastal areas, coral reef systems act as physical barriers that curtail wind and wave energy, thus lessening the impacts of a hurricane. Mexico Beach's Artificial Reef Association created one of the most active artificial reef programs in Florida. Since 1997, this organization has constructed over 300 patch reefs along the shores of Bay and Gulf counties. These natural resources and ecosystems go a long way to protect our communities from disaster – without them, hurricanes would be even more devastating.[38]

Cultural Resources

Northwest Florida is home to many important cultural resources. From historic lighthouses and museums, to historic downtown areas and hotels, our region has a rich culture that deserves to be known and preserved. Preserving and protecting a community's local culture and history is critical for understanding their culture. To promote resiliency, historic and cultural resources should be preserved in immediate disaster response, long-term community recovery, and future mitigation endeavors. As stated by United Nations Educational, Scientific and Cultural Organization (UNESCO), "The symbolism inherent in heritage is a powerful means to help victims recover from the psychological impact of disasters. In such situations, people search desperately for identity and self-esteem." Heritage plays a crucial role in promoting social cohesion, sustainable development, and psychological well-being of communities. Thus, preserving heritage is a vital way to promote community resilience.

Left: Destin History and Fishing Museum; Right: National Aviation Museum in Pensacola

[37] *Natural Defenses from Hurricanes and Floods. National Wildlife Federation, 2014*

[38] *Stakeholder Values in Hurricane Michael. Zhang/Pathak/Ganapati, Florida International University, 2019*

Resilience Strategies

Risk: Lack of coordination between emergency management and historic preservation

In many cases, there is little to no coordination between emergency management and historic preservation officials regarding appropriate measures for both pre- and post-disaster care for historic resources.

Opportunity: Integrate historic preservation into local emergency management processes.

There are several steps communities can take to integrate historic preservation into their local emergency management processes, such as:

- Incorporate historic preservation training, expertise, and assistance into the local response and recovery framework
- Analyze potential debris disposal sites, staging areas, and temporary housing areas during pre-disaster planning to avoid impacting cultural and historical resources
- Include historic preservation in the Local Mitigation Strategy
- Identify funding sources for preservation-related mitigation

Opportunity: Create a historic resources inventory.

Having an accurate and comprehensive inventory of historic resources is crucial for a community. For example, after Hurricane Andrew, cleanup of damaged and destroyed buildings in South Dade County occurred rapidly, but several historic buildings ended up being demolished in the cleanup efforts. If the post-disaster cleanup plan had included an inventory of these buildings, perhaps some of those resources would have been preserved.[39]

HURRICANE MICHAEL'S IMPACT

Hurricane Michael damaged and destroyed many historical buildings in Panama City and Mexico Beach. The Old Callaway School, constructed in 1911, was severely damaged; the roof partly collapsed, windows broken, and the front entrance sustained substantial damage. The Sapp House, a nine-room, two-story structure built in 1916, had damage to its roof, windows, and walls. Additionally, the main Civic Center, and all the local theaters were affected by the storm. The Kaleidoscope Theater and Martin Theater sustained severe structural damages and losses of revenue. The Kaleidoscope Theater has also experienced a 70% reduction in revenue since Hurricane Michael.

The inventory can be compiled by local preservation offices or organizations who should consult with a local emergency management office to ensure that it contains the necessary information to help with disaster recovery. The inventory should be maintained and expanded over time as well. A good inventory includes name, geographic location, address, type of resource, tax identification number, condition, distinguishing features or traits, owner, party with maintenance responsibility, and date of construction.

[39] *Disaster Planning for Florida's Historic Resources. 1000 Friends of Florida, May 2006*

Housing

Housing is a critical element of a healthy and resilient community. A sufficient supply of affordable housing for all residents promotes a sustainable and diverse community. Additionally, research has shown that affordable and stable housing is a platform for families' education, health, and economic wellbeing.[40]

HURRICANE MICHAEL'S IMPACT

Hurricane Michael ripped through Bay County in October 2018, damaging nearly 60,000 homes. The massive amount of damage caused an immediate housing crisis for a large portion of the area's population. Residents were moving into tents and other makeshift structures or remaining in unsafe homes exposed to the elements – some with rapidly growing mold, continued deterioration, and other dangerous conditions. The emergency housing crisis was further intensified by the influx of response and recovery volunteers and professionals also in need of temporary housing. The damaged to single family homes was only a fraction of the challenge. Bay County communities had a total of 8,308 multi-family units, and of these 3,069 were classified as low-income housing units. Of the total 8,308 multi-family units, less than one-half (3,387) were habitable after the hurricane, thereby displacing 4,544 families.

Since the disaster, rental prices have skyrocketed, and there has been a substantial increase in foreclosures as residents who lost jobs struggled to continue making mortgage payments. Building homes is a major priority for Bay County – both for residents and for construction workers who are helping to rebuild.

Bay County Long Term Recovery Plan, July 9, 2019
"A year after Michael, Florida community still in crisis" Mike Schneider, AP News, October 9, 2019

Housing damage in Mexico Beach following Hurricane Michael, ECRC, November 19, 2018

[40] *Planning for Post-Disaster Recovery Briefing Papers, American Planning Association, 2014*

Resilience Strategies

Opportunity: Establishing a disaster housing task force prior to a disaster can guide recovery efforts.

When a disaster strikes, timelines are crunched, and resources are scarce. By establishing a disaster housing task force, plans can be in place and potential recovery resources identified prior to a disaster occurring. A task force can be responsible for performing vulnerability assessments; establishing an understanding of existing critical resources; and developing plans, programs, and procedures to facilitate the rapid rebuilding of housing.

Members can include a variety of agencies and organizations. For example, Marin County, California's task force includes representatives from 16 local government agencies, each with a unique set of assigned responsibilities. Their task force also includes the local health department who not only assists in the delivery of medical and behavioral health care, but also assures that actions taken by the task force are based on the best information regarding the community's immediate and long-term needs. Along with local government agencies, the disaster housing task force should integrate relevant federal agencies such as HUD, FEMA, and the U.S. Department of Health and Human Services.

Opportunity: Planning sites for temporary housing prior to a disaster can lessen the emigration rates of residents from communities when a disaster occurs.

Temporary housing is a vital resource in preventing the emigration of residents from communities impacted by a disaster. Communities should utilize state and federal agency guidance in developing plans to influence where temporary housing should be established. Sites can be designated in advance, or communities can establish site-selection criteria to be applied post-disaster after assessing the intensity and location of the damage. To protect health and well-being, ideal site areas should be away from any hazards (such as flooding) and near community amenities, public transportation, and employment centers to support those without vehicle access.

Opportunity: Assessing housing needs post-disaster promotes housing recovery more quickly.

Assessing and quantifying housing needs is a critical first step in bolstering housing recovery post-disaster. This step includes data collection and analysis, along with initial damage assessments. Databases such as the National Shelter System and FEMA's Housing Portal can help identify available housing.

A decision that must be made immediately after a disaster is whether existing housing stock will be sufficient to house the displaced, if new temporary housing will be necessary, or if displaced populations will need to be transferred to nearby communities with appropriate housing. This decision depends heavily on the pre-disaster vacancy rates as well as the suitability of those properties. To improve efficiency, this information should be gathered prior to a disaster. After the disaster, HUD or a local organization should assess the entire HUD-assisted and HUD-owned housing inventory in or around the jurisdiction to find vacant units and temporary housing vouchers for displaced families.

Risk: Lack of qualified contractors to undertake repairs and reconstruction.

Opportunity: A rapid repairs program may decrease the need for temporary housing after a disaster occurs.

A rapid repairs program is another strategy to avoid unnecessary displacement of people from their homes. The need for temporary housing may decrease if communities are able to gauge the damage and properly repair damaged buildings quickly. The community itself is often in the best position to make those repairs. For example, after Hurricane Sandy, New York City created a program to provide free repairs to residents so that they could remain in (or rapidly return to) their homes. Their program deployed thousands of contractors, plumbers, construction workers, and electricians around the area to restore heat, power, and water to over 20,000 residences.[41] One way to make this strategy easier to implement is through creating a list of these worker resources prior to disaster striking.

[41] *Healthy, Resilient, and Sustainable Communities After Disasters: Strategies, Opportunities, and Planning for Recovery. Committee on Post-Disaster Recovery of a Community's Public Health, Medical, and Social Services; Board on Health Sciences Policy; Institute of Medicine. Washington (DC): National Academies Press (US); 2015 Sep 10.*

Civic & Governance Systems

There are many elements of civic and governance systems that must be considered when promoting community resiliency. To promote and support the civic and governance systems in the Emerald Coast region, we need to continually improve the effectiveness of government agencies at all levels. Governments can then evolve based on the needs of businesses and citizens.

Resilience Strategies

Risk: Communities are not always aware of deadlines for federal programs and resources.

Perhaps the biggest concern regarding government and civic response to Hurricane Michael was the community's lack of awareness regarding deadlines for federal programs and resources. These programs and resources are vital, especially after experiencing a natural disaster to the caliber of Hurricane Michael.

Opportunity: Develop a structure for maintaining a list of resource program contacts, availability, and deadlines to ensure communities receive necessary post-disaster aid.

When local governments are aware of the types of programs that exist and what the application deadlines are, they are more likely to secure the necessary resources for recovery post-disaster.

Opportunity: Identify, understand, and use current and future risk scenarios as the basis for development and long-term planning goals.

Analyzing probable as well as worst-case risk scenarios based on the understanding of hazards, geographic and economic exposure, and vulnerabilities can help educate present and future investment decisions. These risk assessments should be shared and used for decision-making purposes and for response and recovery plans. To do this, local governments should conduct a technical and multi-stakeholder analysis of current and future threats and hazards to pinpoint community-wide vulnerabilities. This includes:

SUCCESS STORY

"When the Bay County Community Recovery Center opened its doors...in the Bay County Public Library, it became the first of its kind in the continental United States, providing locally based support for ongoing disaster survivor needs."
- FEMA

The Community Recovery Center served as a one-stop-shop for public aid following Hurricane Michael. Representatives from various agencies were available at the center to provide assistance with housing repairs, commodities and clothing, rental resources, counseling, legal services, and FEMA case review.

Bay County Community Recovery Center Offers Locally-Based Assistance" FEMA Release April 3, 2019

Bay County's Community Recovery Center. FEMA/Kenneth Wilsey, October 26, 2018

- ❖ Identifying the hazards and conducting hazard assessments,
- ❖ Including all identified hazards and effects into risk assessments, and
- ❖ Routinely updating those risk assessments through multi-stakeholder meetings.

This information should also be integrated into the community's long-term planning vision. To ensure that the information is appropriately used, local governments can:

- ❖ Create concise mechanisms for risks and impacts to be integrated into decision making across all city/county departments,
- ❖ Make risk assessments available to all departments and primary collaborators,
- ❖ Develop an accessible platform for stakeholders and the public to exchange risk-related data, and
- ❖ Share information on hazards and risks with the public.

Opportunity: Strengthen institutional capacity for resilience.

Various organizations and stakeholders have roles to play in reducing risk and increasing resilience. Strengthening the institutional capacity of government; private sectors providing public services; industries; and academic, professional, and civil organizations will improve a community's overall resilience.

There are several components to strengthening institutional capacity. First, disaster resilience roles and responsibilities in disaster risk reduction legislation must be legitimized. Community-wide implementation of disaster risk reduction legislation needs to be maintained. Second, communities should recognize the importance of having knowledge and skill-sharing processes in place for stakeholders involved in disaster resilience. This includes:

- ❖ Supporting institutions that provide crucial resiliency training to staff and individuals,
- ❖ Defining stakeholder qualities, competencies, and capabilities; and resource capacities within the community's disaster risk reduction plans,
- ❖ Creating a process to secure, store, and share all relevant data across organizations, and
- ❖ Engaging in national and international networks for knowledge sharing.

It is the local government's responsibility to promote top-down and bottom-up communication that bolsters public knowledge and awareness. Risk data should be maintained and shared to ensure all communities and citizens can facilitate the flow of emergency information to disaster responders.[42]

Local governments also benefit from recurring training programs for local government employees and elected officials. These programs can include familiarization with information and toolkits made available from FEMA and on sites such as RestoreYourEconomy.org. Training programs should also work with individuals to foster an understanding of their roles during and after a disaster.

[42] *How to Make Cities More Resilient – A Handbook for Local Government Leaders. UNISDR, 2017*

Section 5: Project List

The Project List below contains some of the projects identified by stakeholders within the region during the community outreach meetings and from projects developed in partnership with local governments and the EPA Recovery Support Function. These projects have been identified as projects that would assist the community become more resilient and hasten the recovery period.

Escambia County
Infrastructure Improvements at the Bluffs Heavy Industrial Park
Resilient Infrastructure Improvements at the Port of Pensacola
Highest and Best Uses Plan for the Port of Pensacola
Santa Rosa County
Infrastructure improvements in support of industrial and commercial sites: Whiting Aviation Park, Northwest Florida I-10 Park, Santa Rosa Park East
Water and Wastewater Infrastructure Projects – City of Gulf Breeze
Okaloosa County
Shoal River Ranch Infrastructure Improvements (roadways and overpass; water and sewer)
Research Park to serve Eglin AFB
CDL Training Facility
Walton County
Opportunity Zone Infrastructure Improvements
Commerce Park Infrastructure Improvements
U.S. Highway 90 Water/Wastewater Extension
County Road 30A Mobility Project
City of DeFuniak Springs- Economic Development Strategic Plan
Holmes County
Drainage Improvement /Stormwater Infrastructure Project/Bonifay

Development of 2 Emergency Shelters
Emergency Communication System
Planning & Technical Assistance
Countywide Broadband Expansion
Washington County
Highway 79 Corridor Project: Water and Sewer Infrastructure Development
Multi-Purpose Shelter/EOC
Countywide Broadband Expansion
Emergency Communication System
Drainage Improvement Projects
Bay County
Northwest Florida Beaches Airport: Development of Hangars, Aprons, Parking and Ancillary Infrastructure
City of Mexico Beach: Regional Stormwater Detention; 8th Street Canal; City Pier
City of Springfield: Business 98 Redevelopment, Business 98 Revitalization; Civic Green Infrastructure Project
City of Parker: Business 98 Downtown Corridor; West Park Street Waterfront
City of Parker and Springfield Stormwater District

Appendix A

Hazus Data Maps

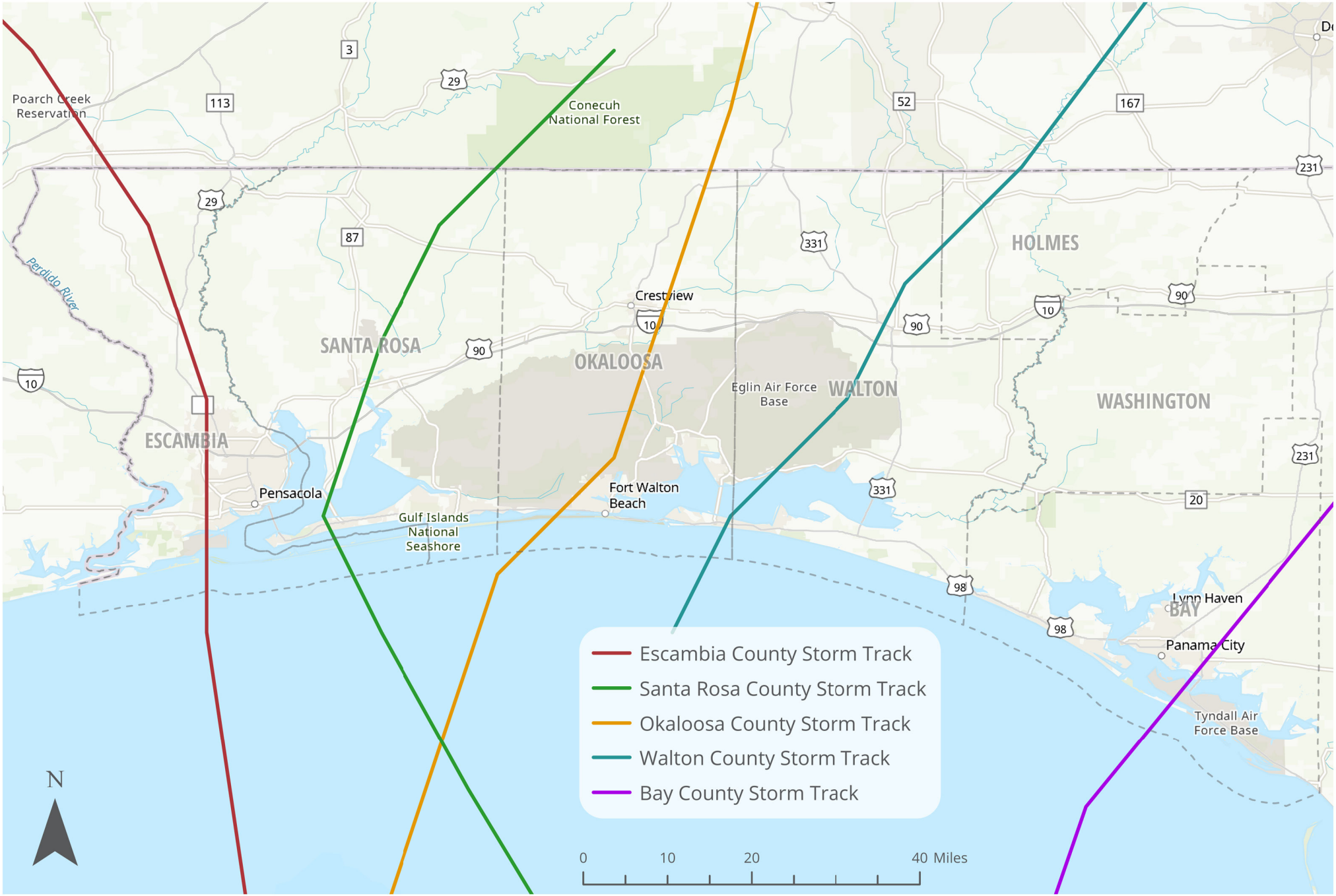
Hazus Deterministic Model

1. Storm Tracks
2. Storm Track, Essential Facilities, and Surge – Bay County
3. Storm Track, Essential Facilities, and Surge – Escambia County
4. Storm Track, Essential Facilities, and Surge – Okaloosa County
5. Storm Track, Essential Facilities, and Surge – Santa Rosa County
6. Storm Track, Essential Facilities, and Surge – Walton County
7. Building-Related Economic Loss Estimates – Bay County
8. Building-Related Economic Loss Estimates – Escambia County
9. Building-Related Economic Loss Estimates – Okaloosa County
10. Building-Related Economic Loss Estimates – Santa Rosa County
11. Building-Related Economic Loss Estimates – Walton County
12. Maximum Sustained Wind Speed – Bay County
13. Maximum Sustained Wind Speed – Escambia County
14. Maximum Sustained Wind Speed – Okaloosa County
15. Maximum Sustained Wind Speed – Santa Rosa County
16. Maximum Sustained Wind Speed – Walton County

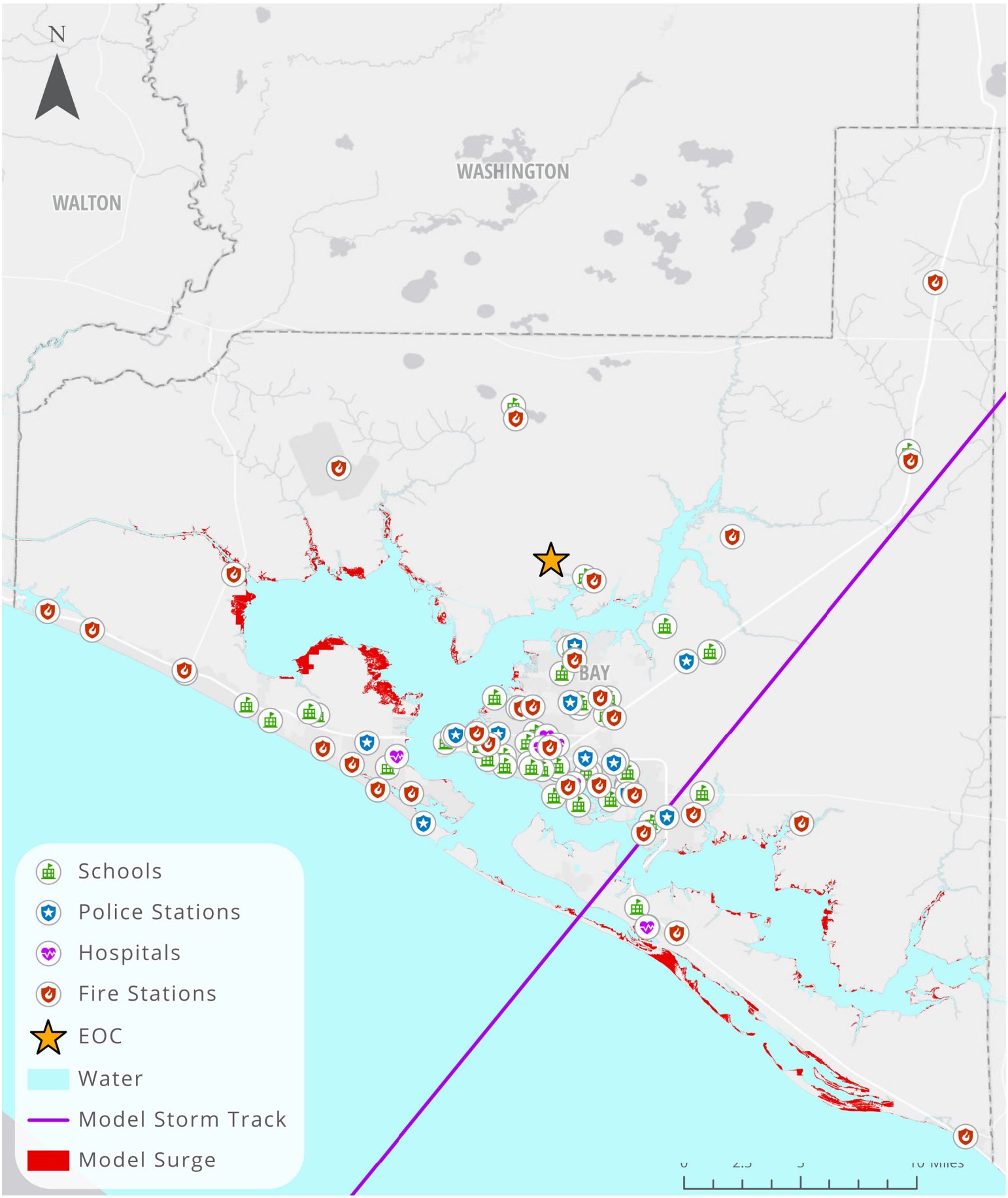
Hazus Probabilistic Model (100-Year Return)

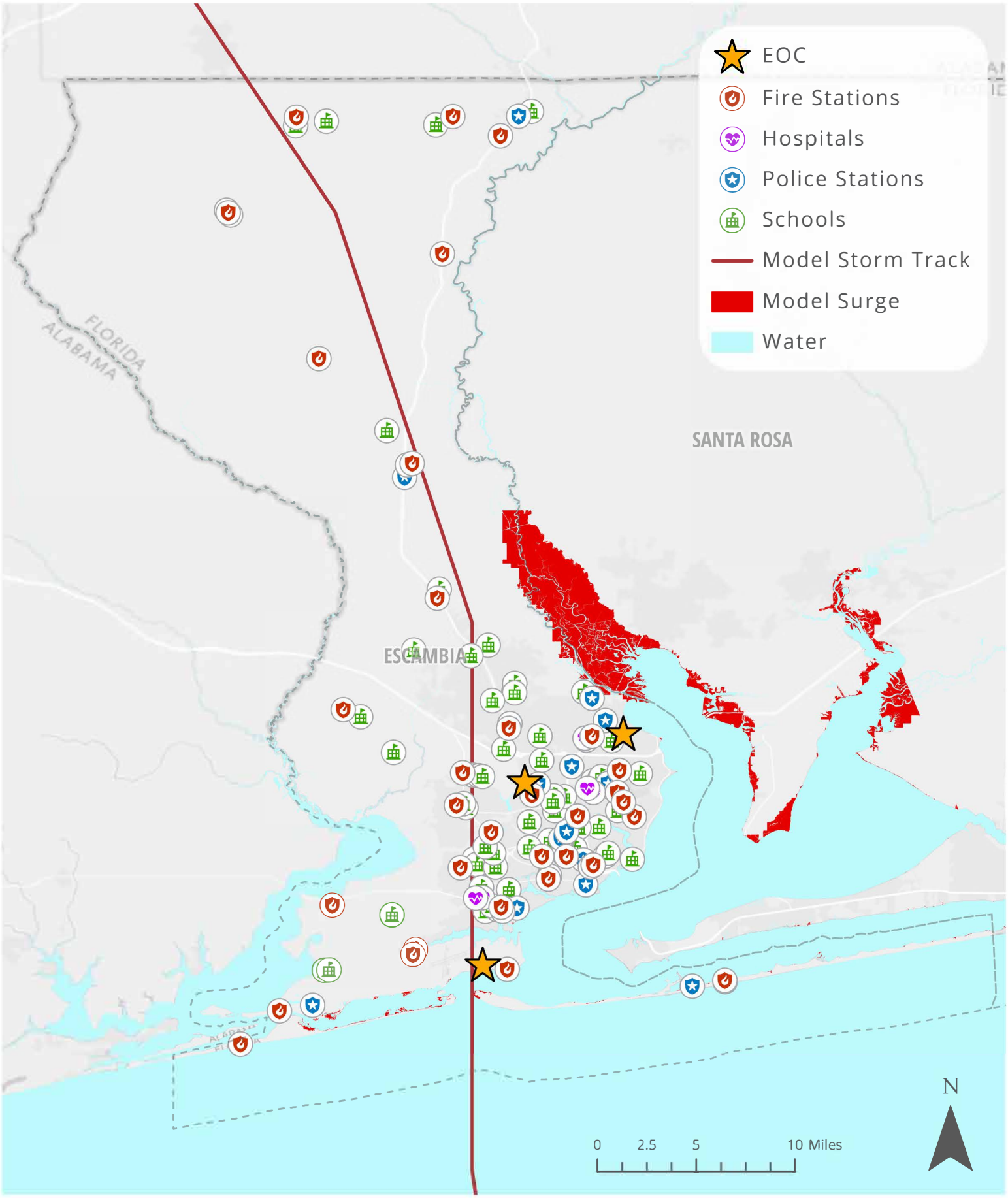
17. Storm Tracks – Bay County
18. Storm Tracks – Escambia County
19. Storm Tracks – Holmes County
20. Storm Tracks – Okaloosa County
21. Storm Tracks – Santa Rosa County
22. Storm Tracks – Walton County
23. Storm Tracks – Washington County
24. Building-Related Economic Loss Estimates – Bay County
25. Building-Related Economic Loss Estimates – Escambia County
26. Building-Related Economic Loss Estimates – Holmes County
27. Building-Related Economic Loss Estimates – Okaloosa County
28. Building-Related Economic Loss Estimates – Santa Rosa County
29. Building-Related Economic Loss Estimates – Walton County
30. Building-Related Economic Loss Estimates - Washington

HAZUS Deterministic Model
Storm Tracks

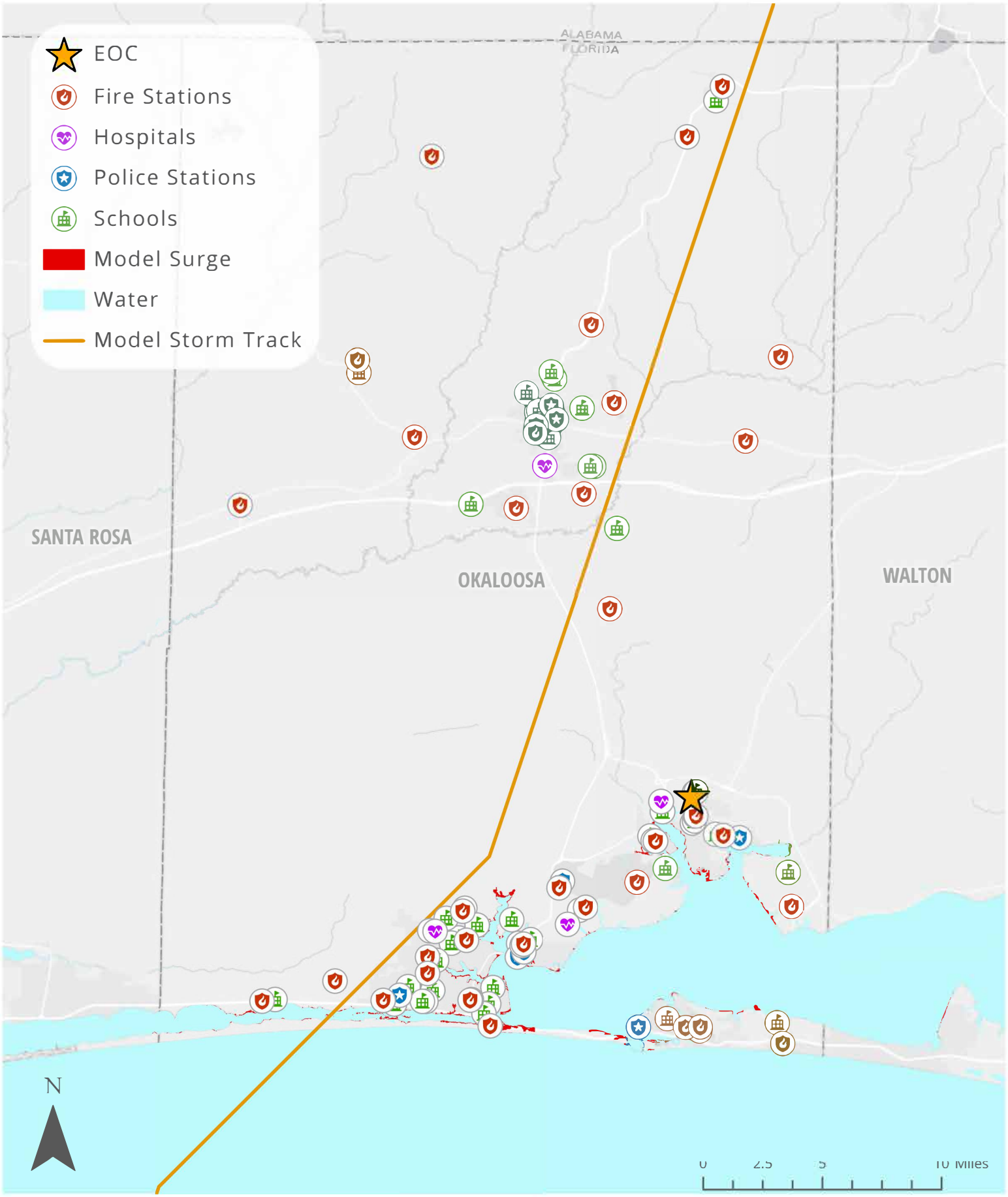


HAZUS Deterministic Model
Storm Track, Essential Facilities, and Surge - Bay County

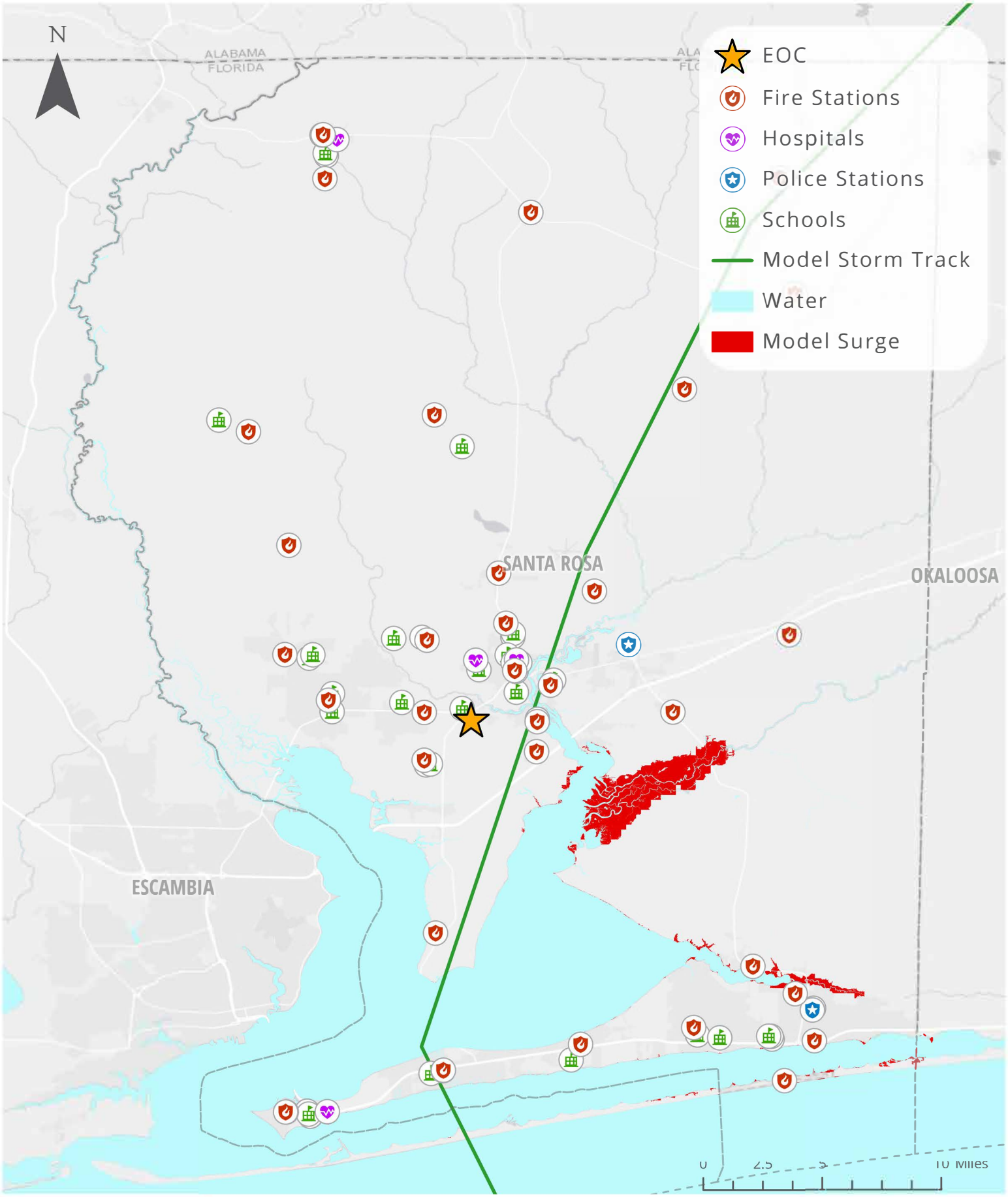



EOC
Fire Stations
Hospitals
Police Stations
Schools
Model Storm Track
Model Surge
Water
FLORIDA
ALABAMA
SANTA ROSA
ESCAMBIA
N
0
2.5
5
10 Miles

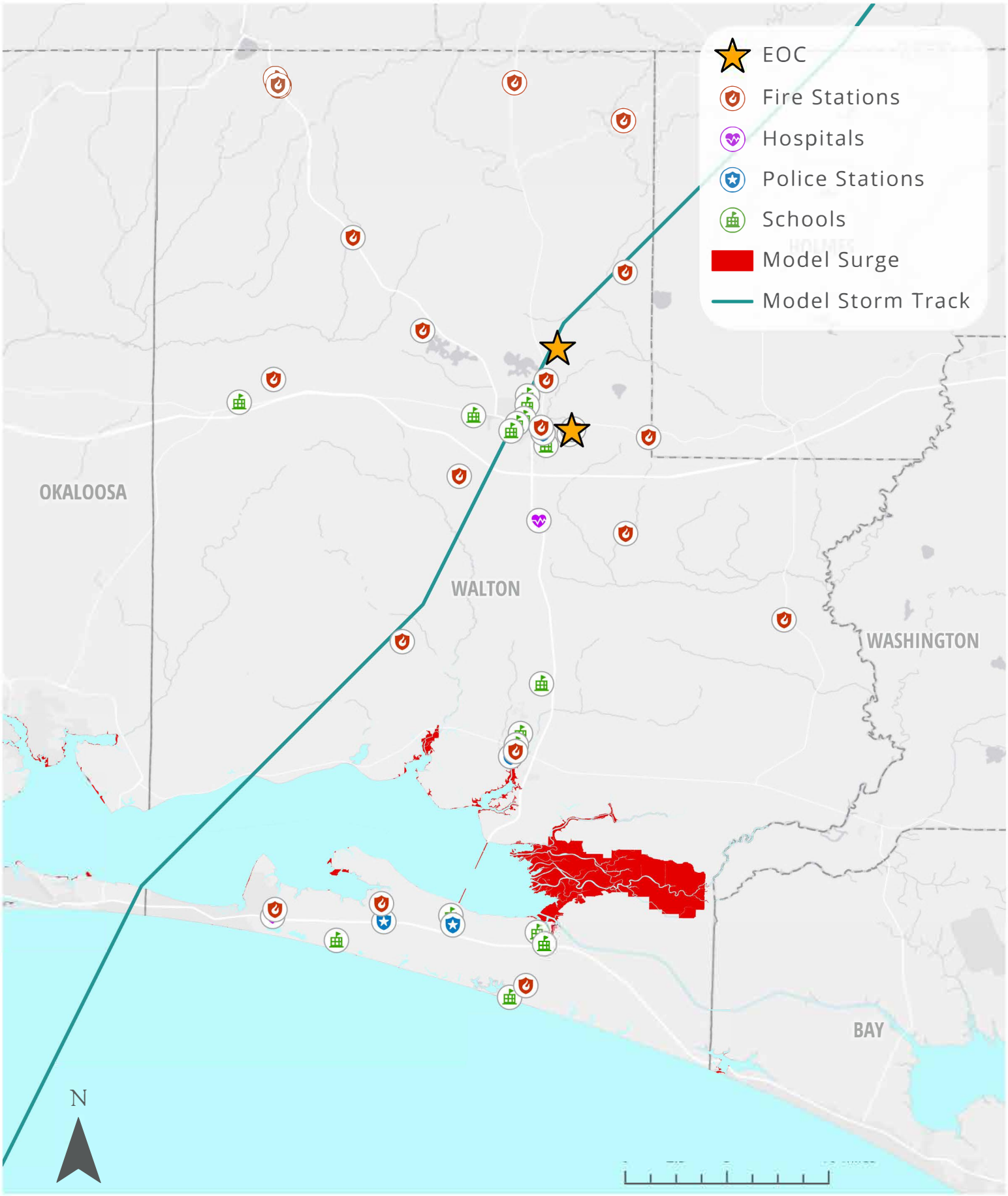
HAZUS Deterministic Model
Storm Track, Essential Facilities, and Surge - Okaloosa County

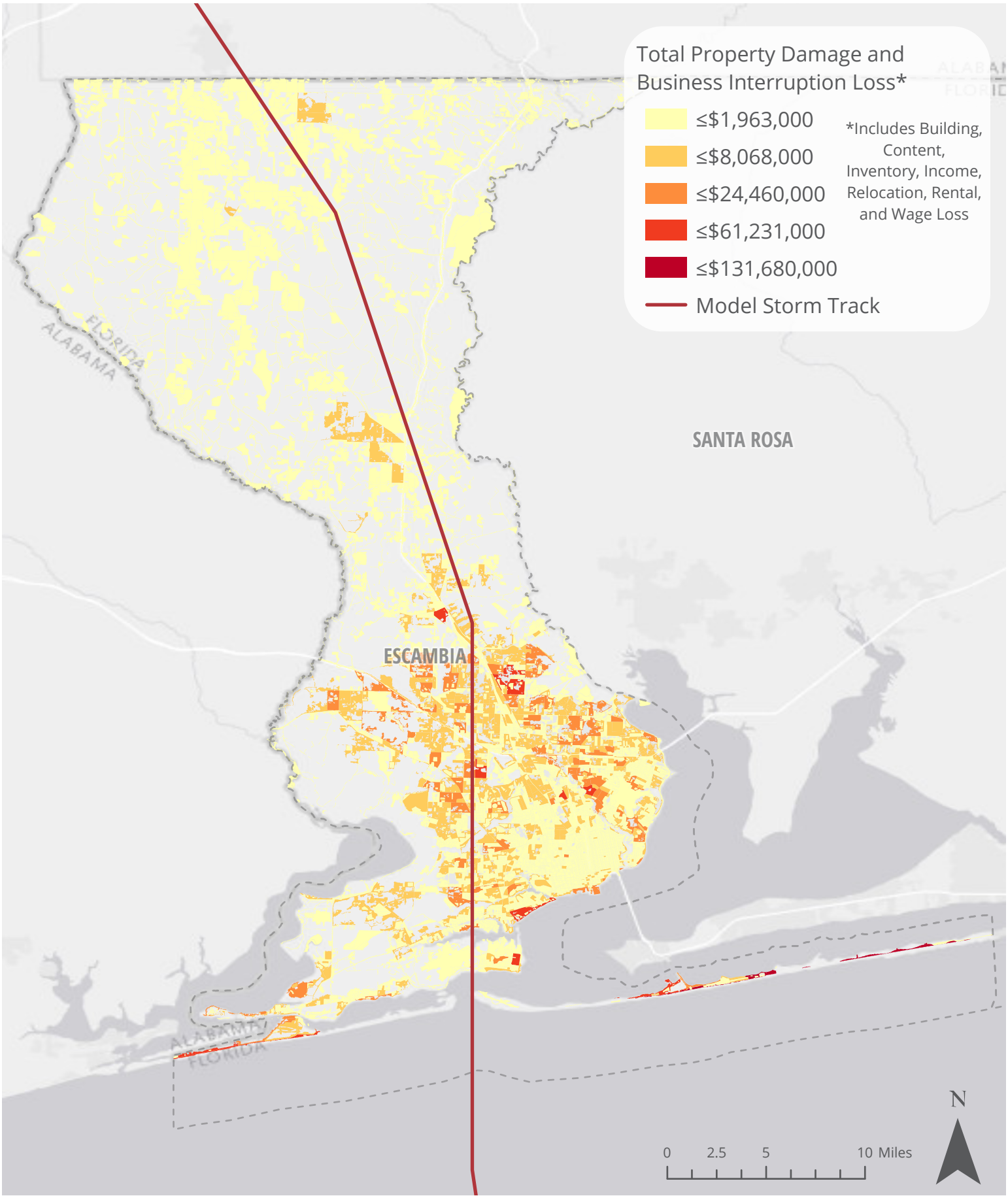


HAZUS Deterministic Model
Storm Track, Essential Facilities, and Surge - Santa Rosa County

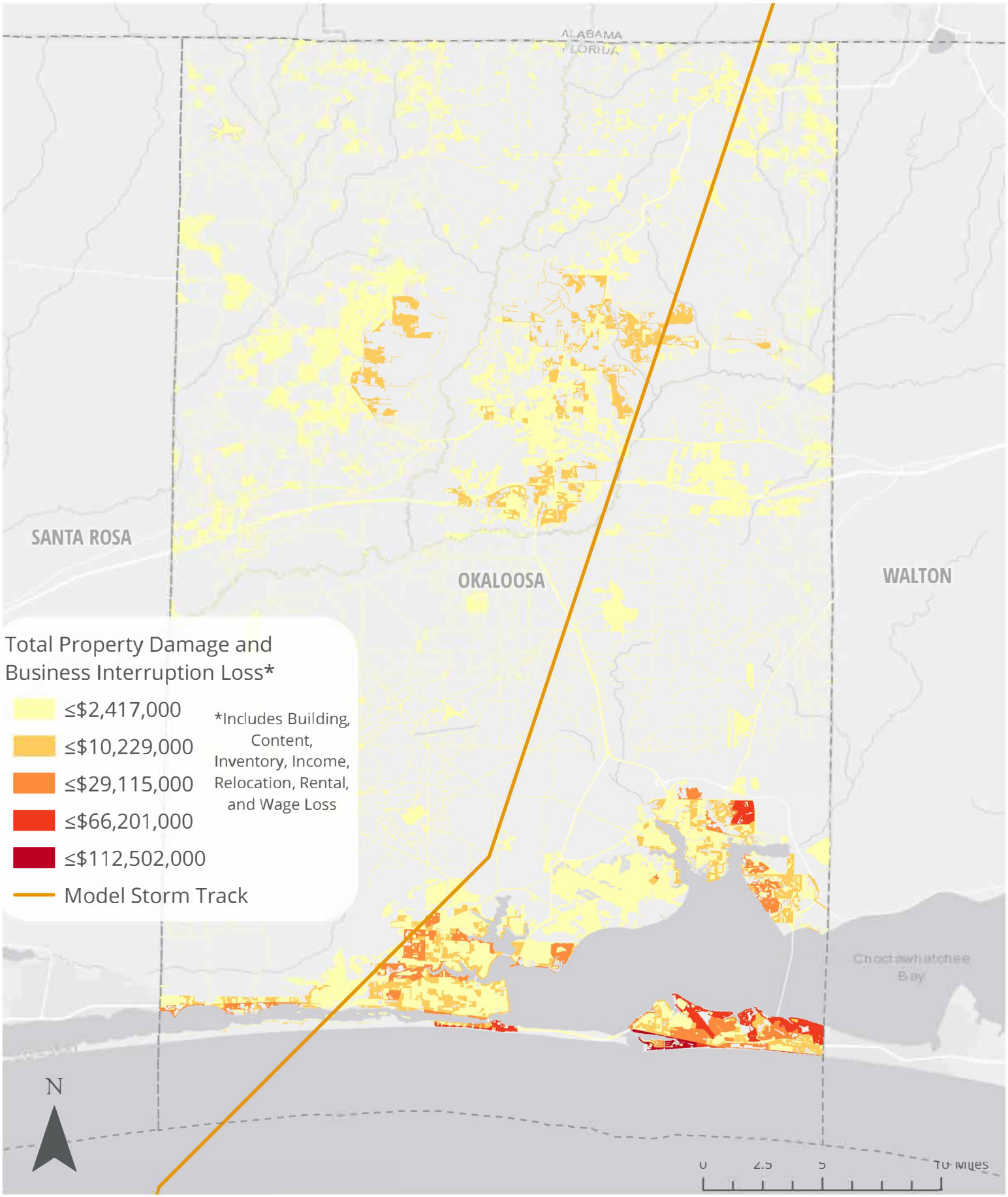


HAZUS Deterministic Model
Storm Track, Essential Facilities, and Surge - Walton County

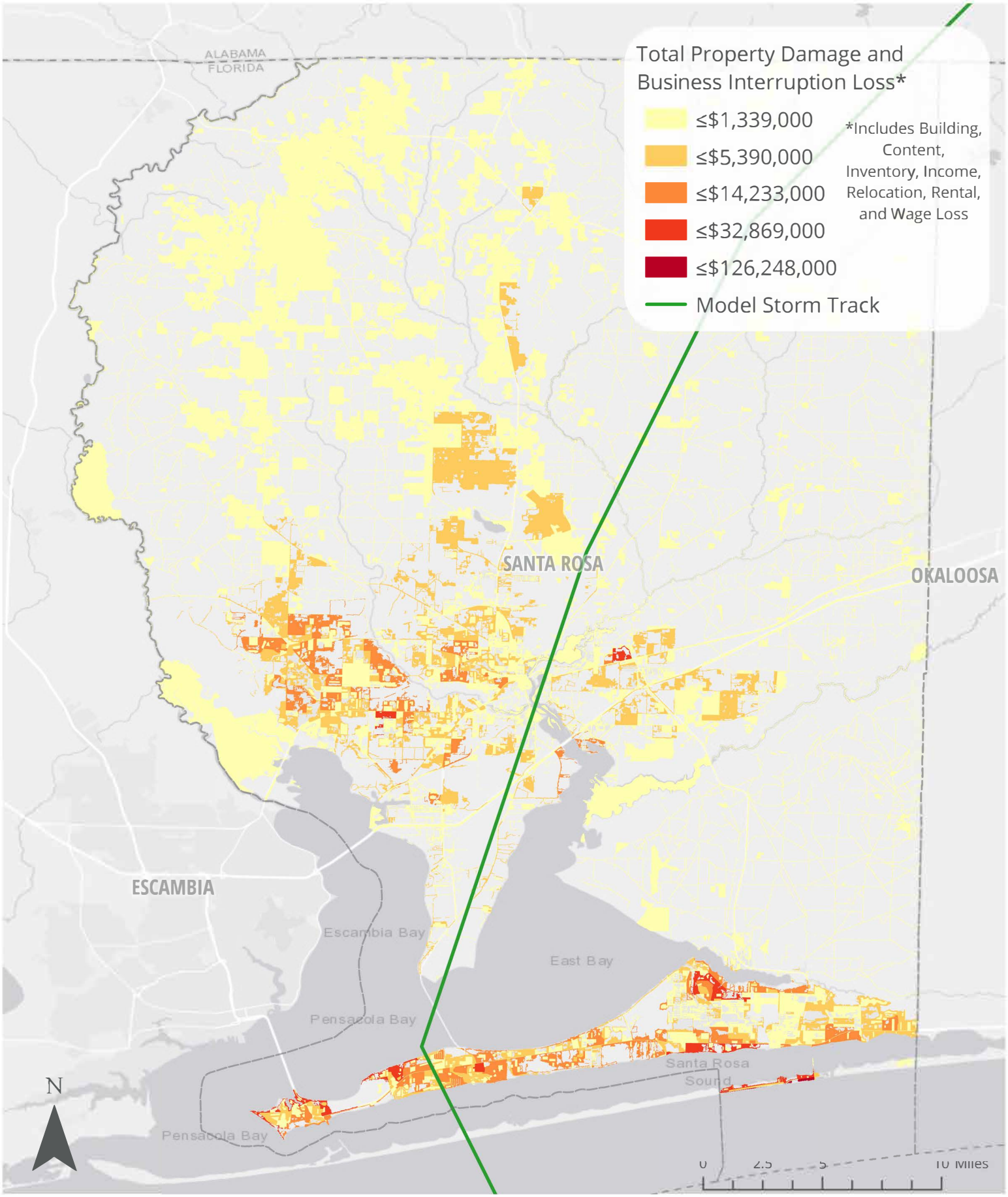


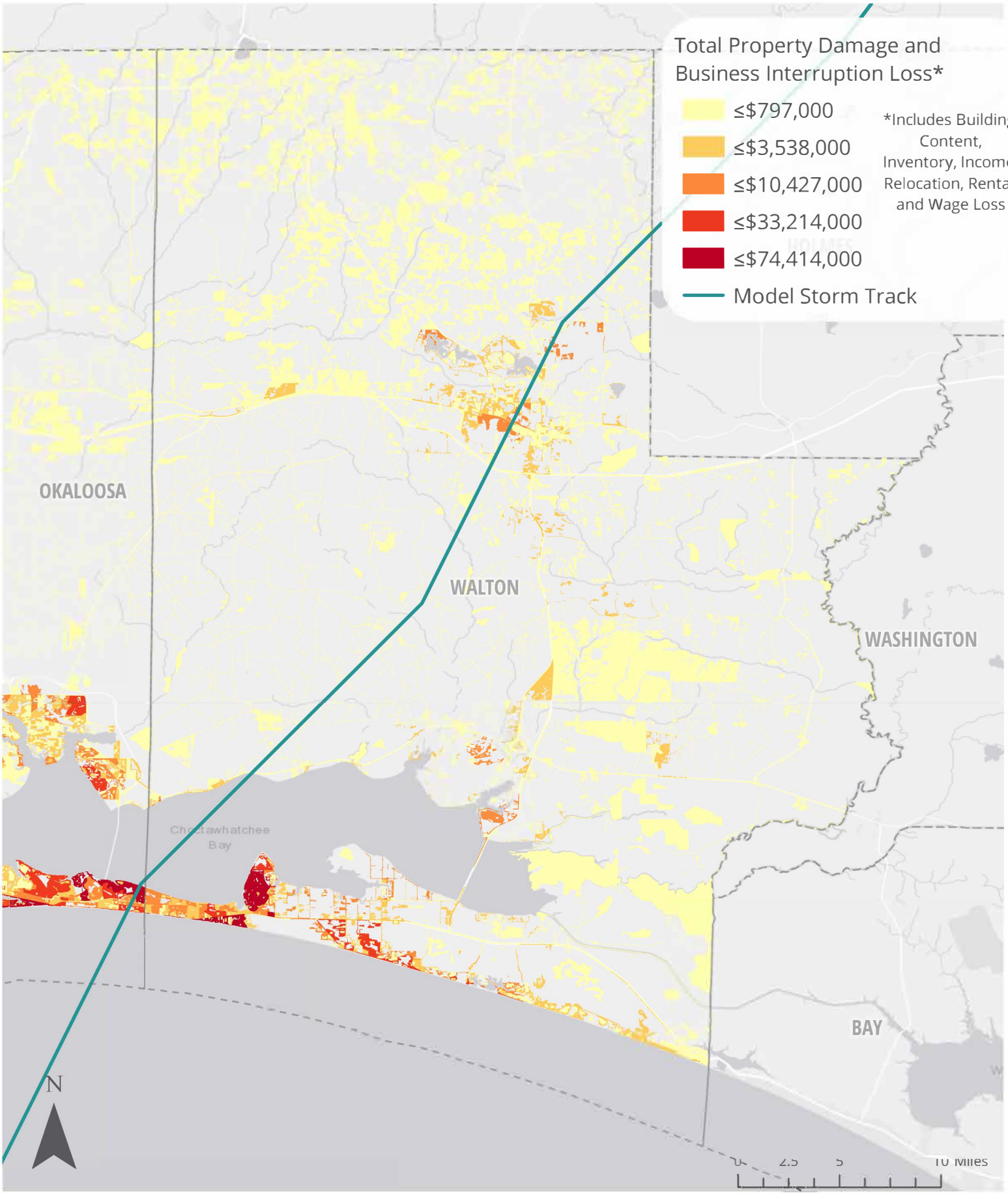

Total Property Damage and Business Interruption Loss*
≤$1,963,000
≤$8,068,000
≤$24,460,000
≤$61,231,000
≤$131,680,000
Model Storm Track
*Includes Building, Content, Inventory, Income, Relocation, Rental, and Wage Loss
FLORIDA
ALABAMA
SANTA ROSA
ESCAMBIA
ALABAMA
FLORIDA
N
0 2.5 5 10 Miles

HAZUS Deterministic Model
Building-Related Economic Loss Estimates - Okaloosa County

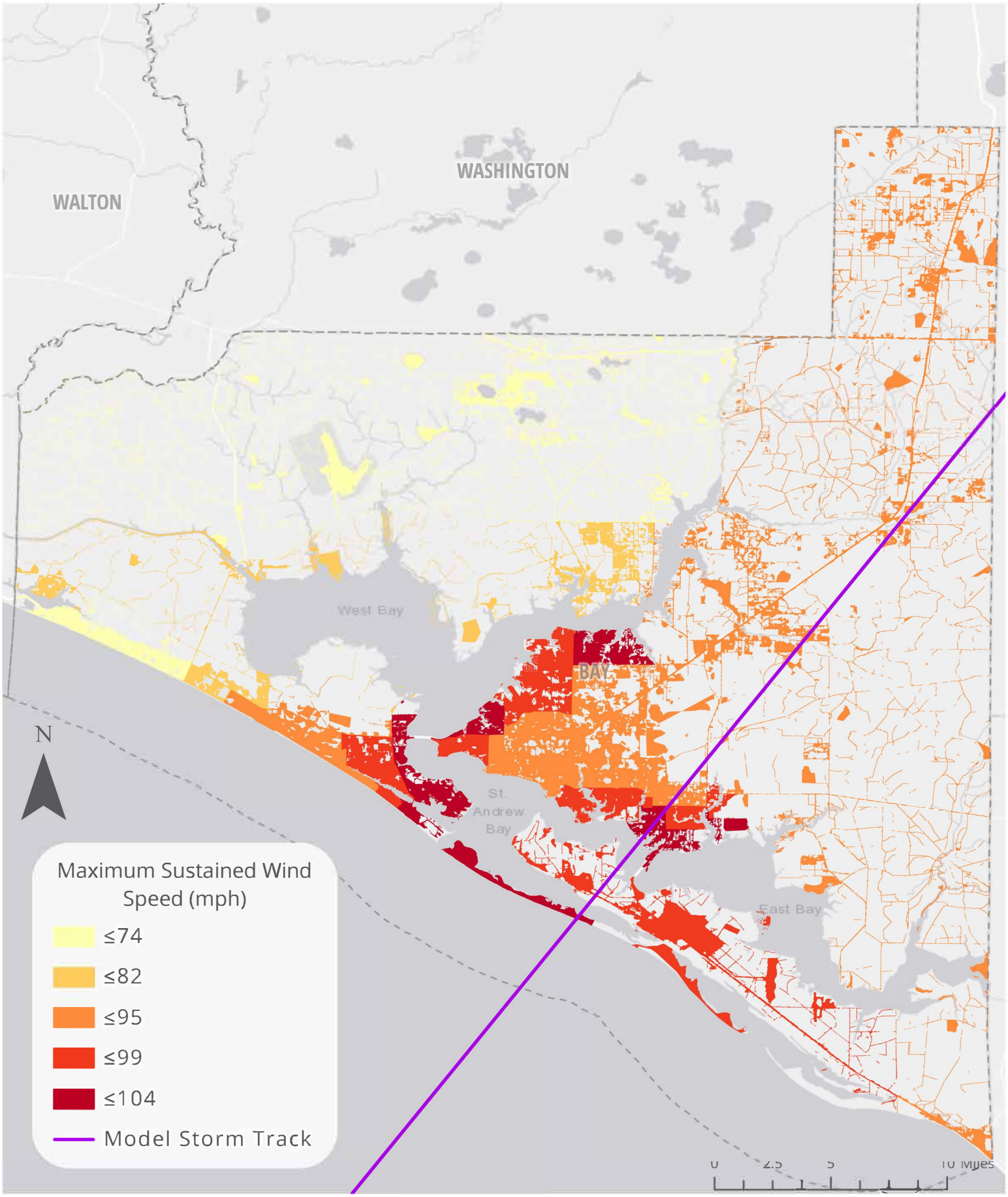


HAZUS Deterministic Model
Building-Related Economic Loss Estimates - Santa Rosa County

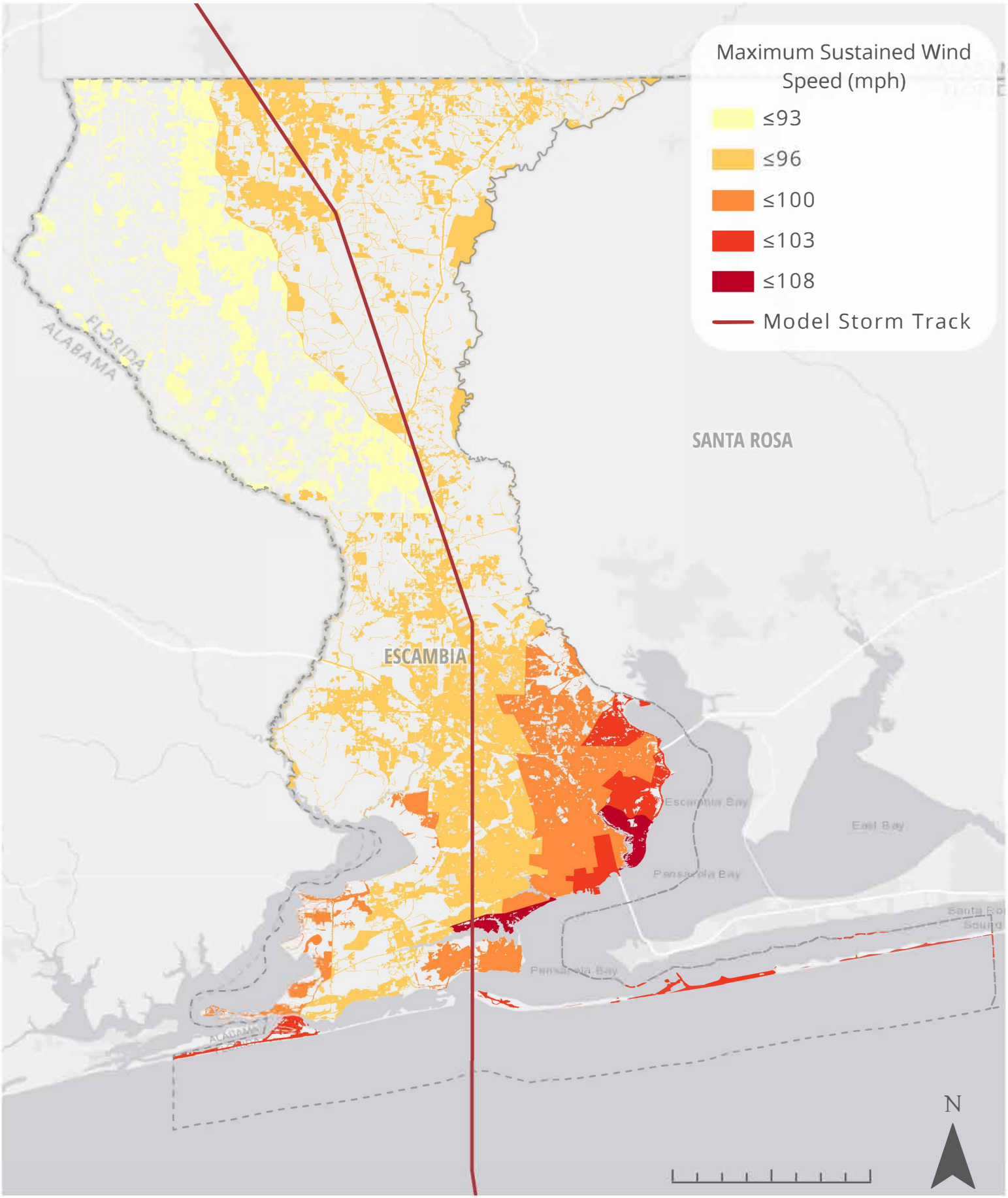



Total Property Damage and Business Interruption Loss*
≤$797,000
≤$3,538,000
≤$10,427,000
≤$33,214,000
≤$74,414,000
Model Storm Track
*Includes Building, Content, Inventory, Income, Relocation, Rental, and Wage Loss
OKALOOSA
WALTON
WASHINGTON
BAY
Choctawhatchee Bay
N
2.5
5
10 Miles

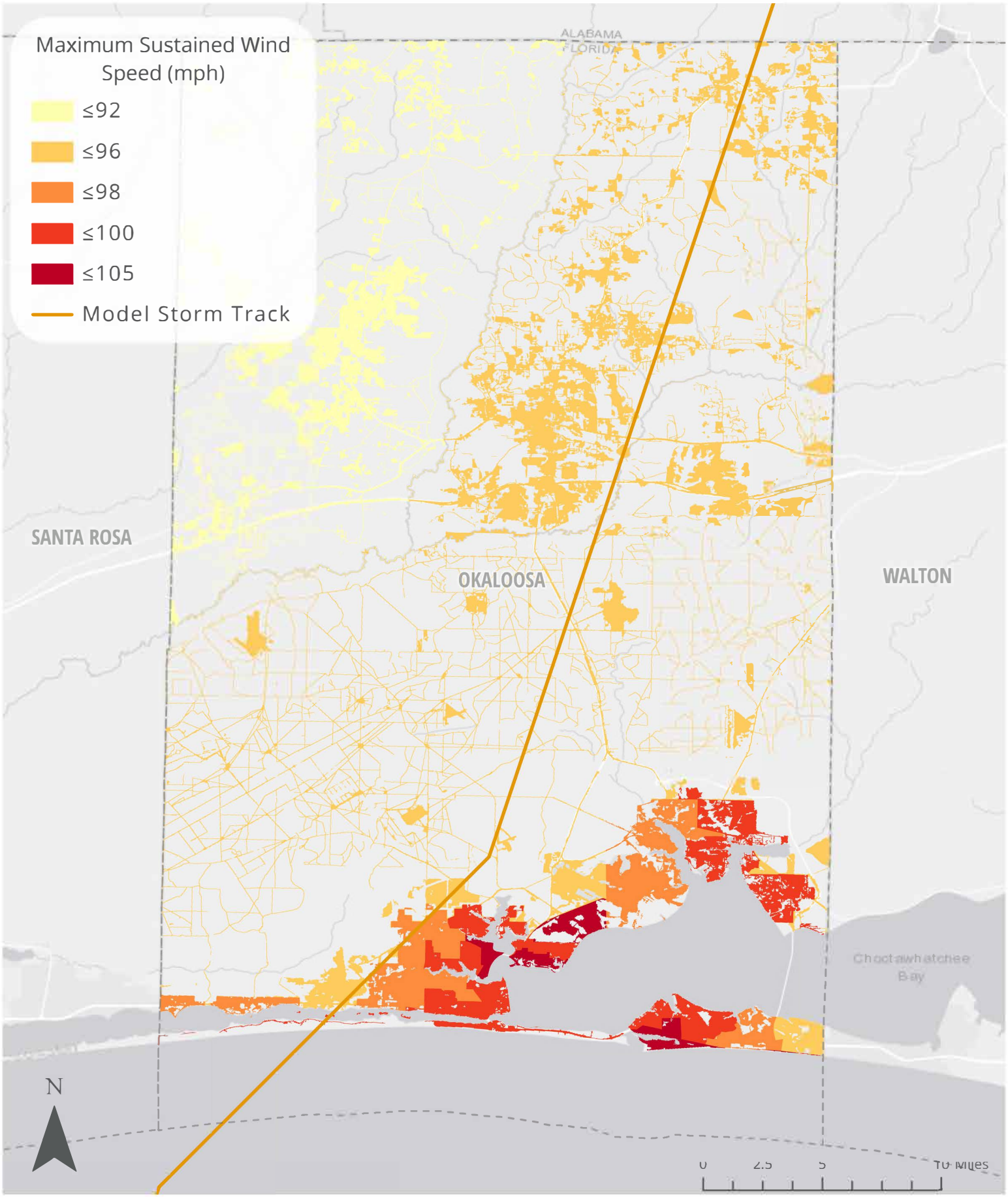
HAZUS Deterministic Model
Maximum Sustained Wind Speed - Bay County



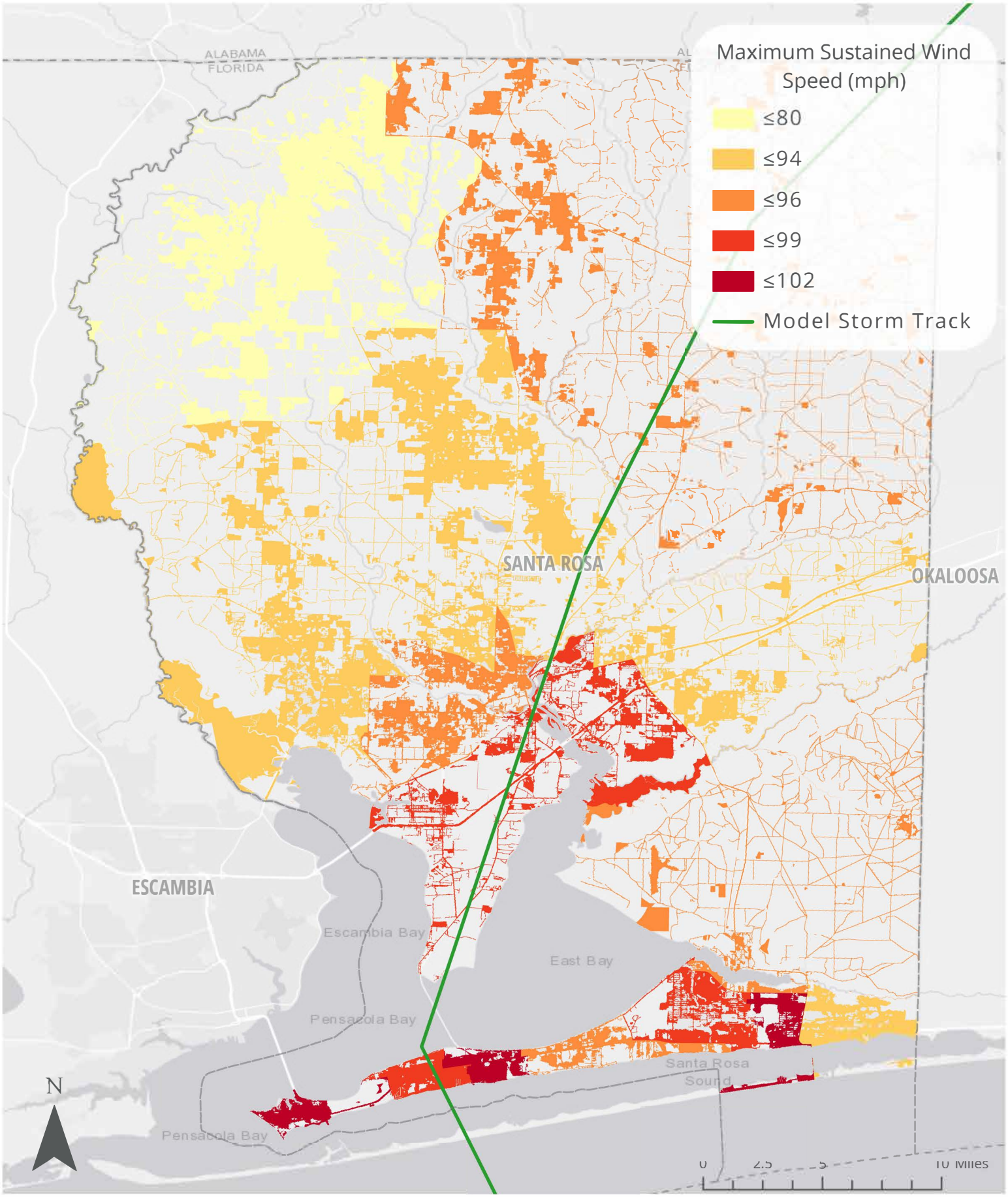
HAZUS Deterministic Model
Maximum Sustained Wind Speed - Escambia County



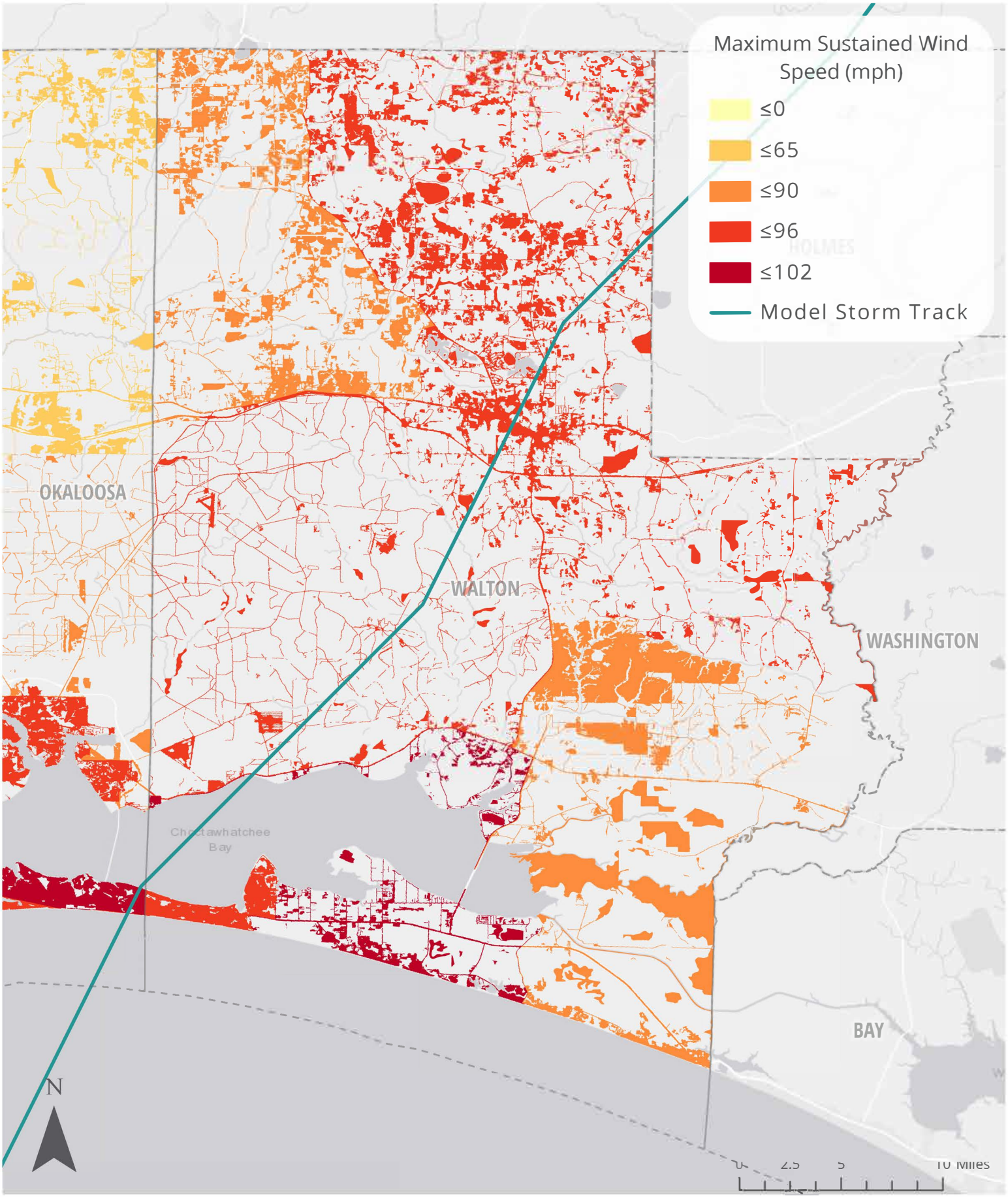
HAZUS Deterministic Model
Maximum Sustained Wind Speed - Okaloosa County

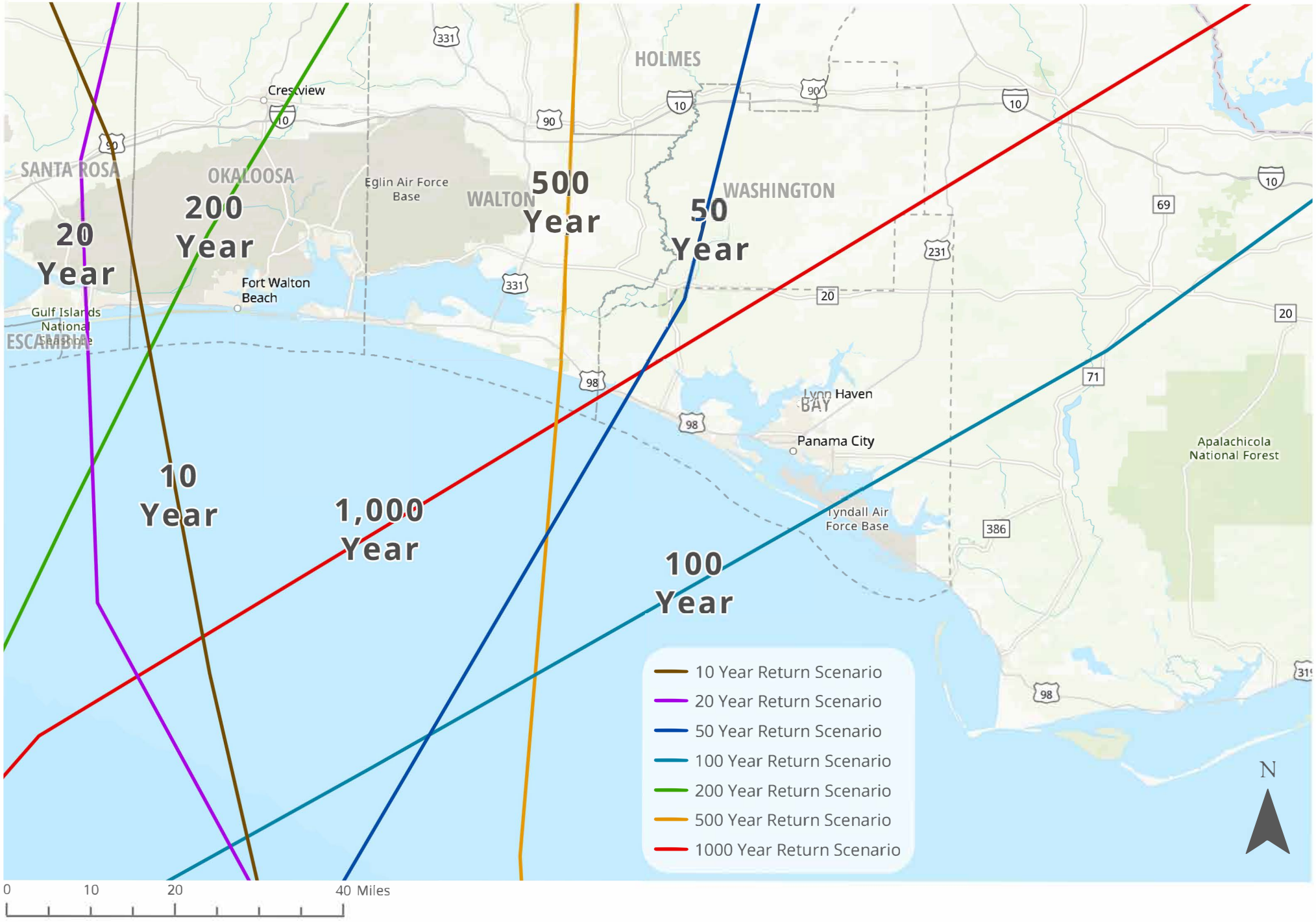


HAZUS Deterministic Model
Maximum Sustained Wind Speed - Santa Rosa County

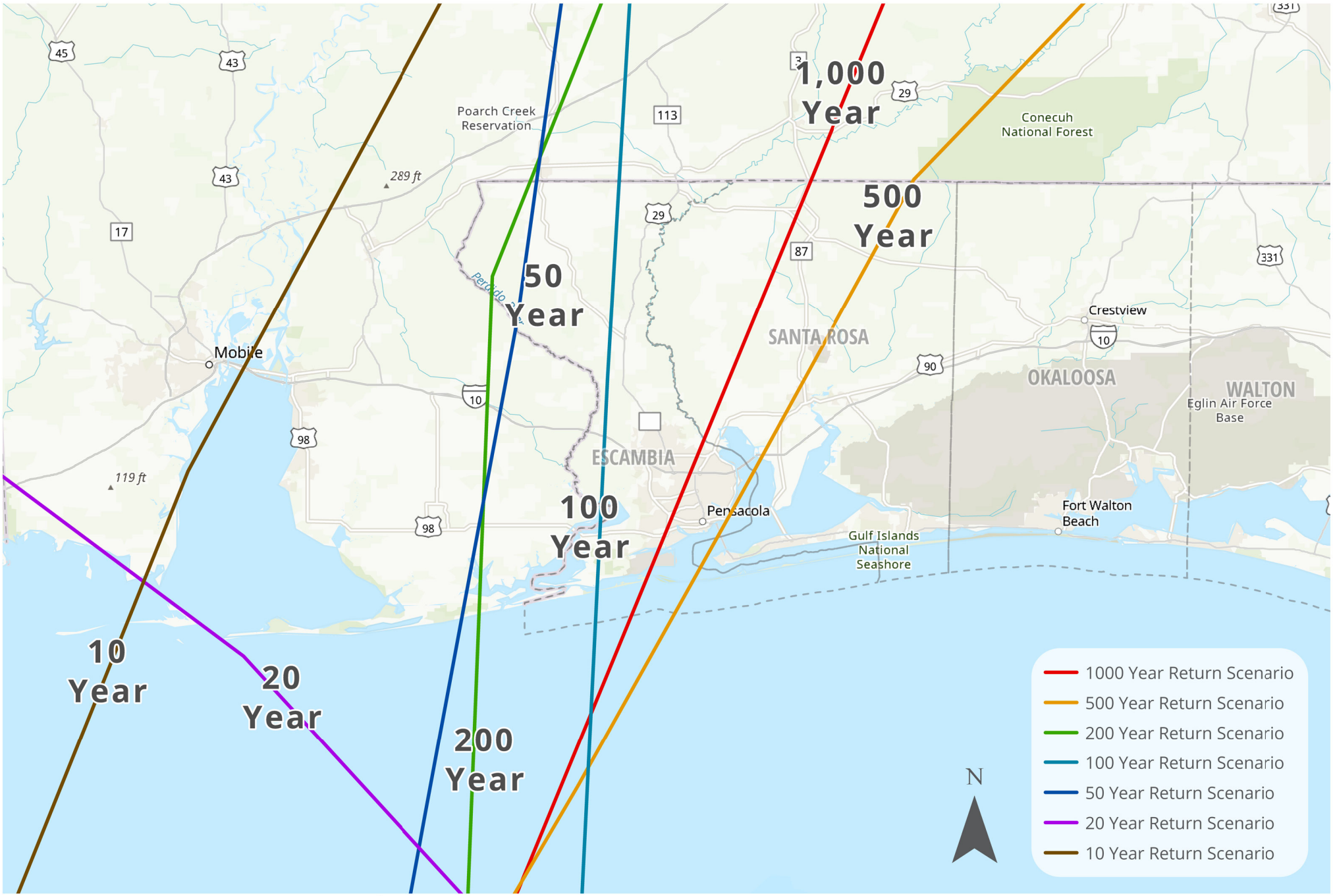


HAZUS Deterministic Model
Maximum Sustained Wind Speed - Walton County

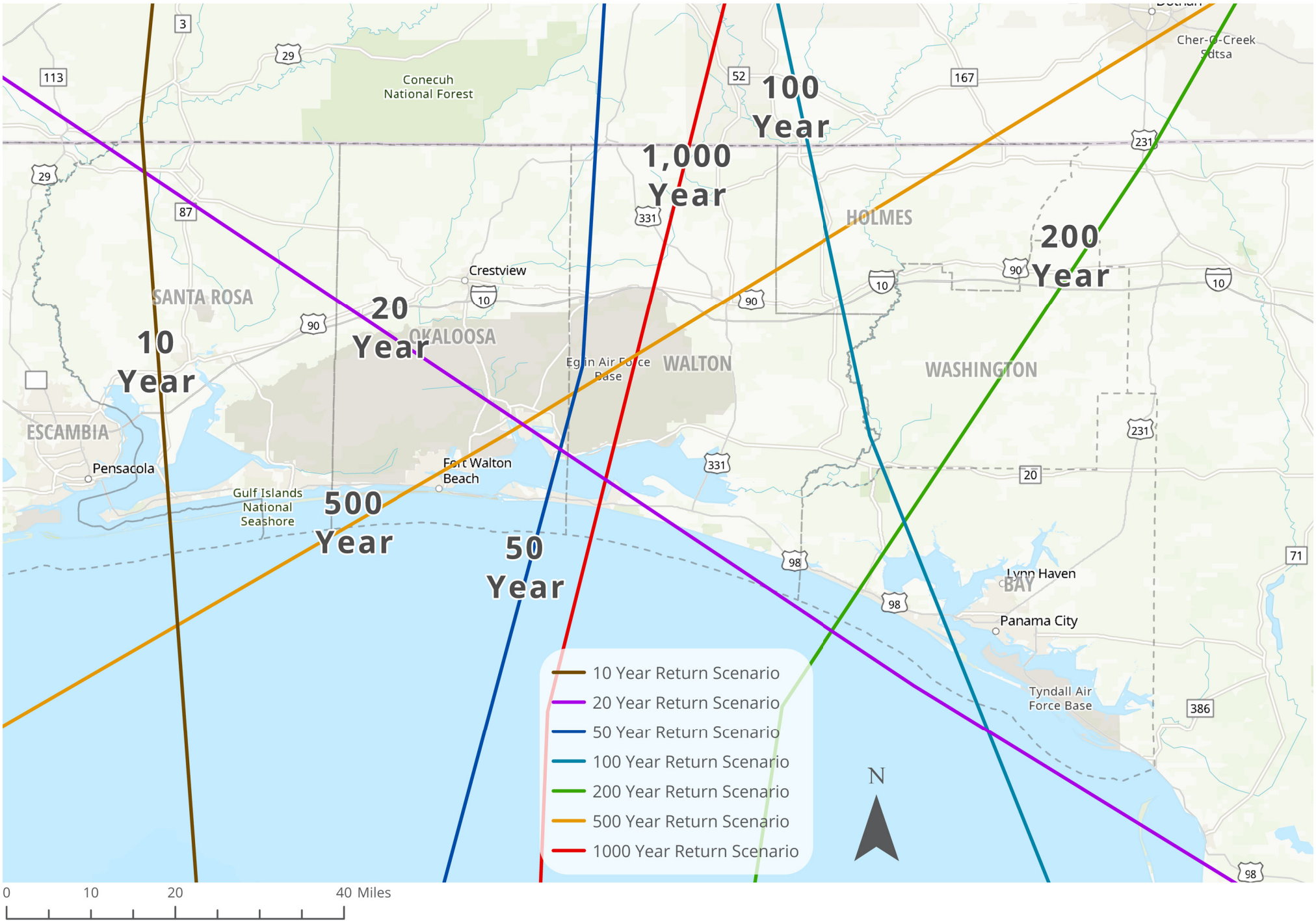



20 Year
200 Year
500 Year
50 Year
10 Year
1,000 Year
100 Year
HOLMES
Crestview
SANTA ROSA
OKALOOSA
Eglin Air Force Base
WALTON
WASHINGTON
Fort Walton Beach
Gulf Islands National Seashore
ESCAMBIA
Lynn Haven
BAY
Panama City
Tyndall Air Force Base
Apalachicola National Forest
10 Year Return Scenario
20 Year Return Scenario
50 Year Return Scenario
100 Year Return Scenario
200 Year Return Scenario
500 Year Return Scenario
1000 Year Return Scenario
N
0 10 20 40 Miles

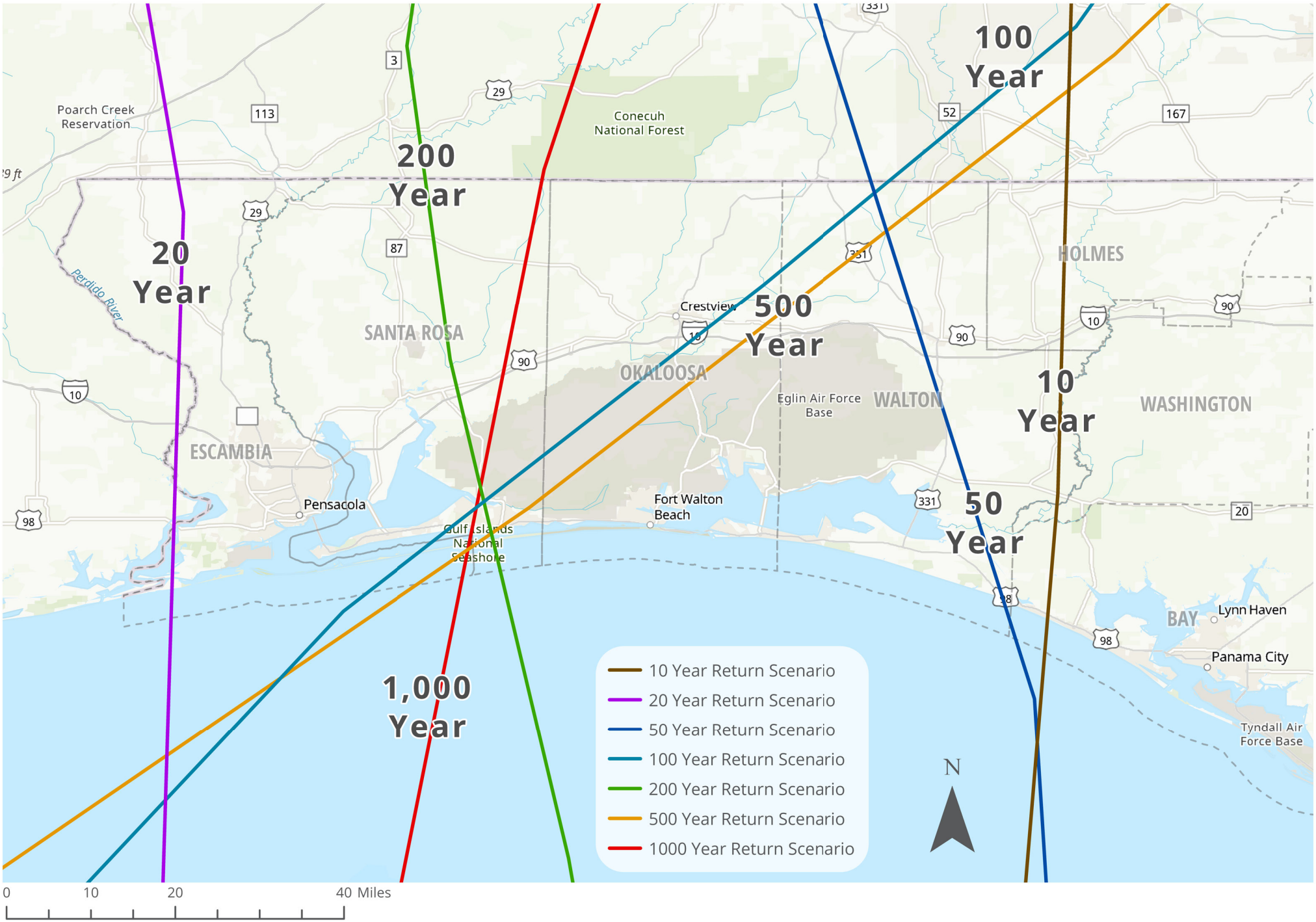
HAZUS Probabilistic Model
Storm Tracks - Escambia County



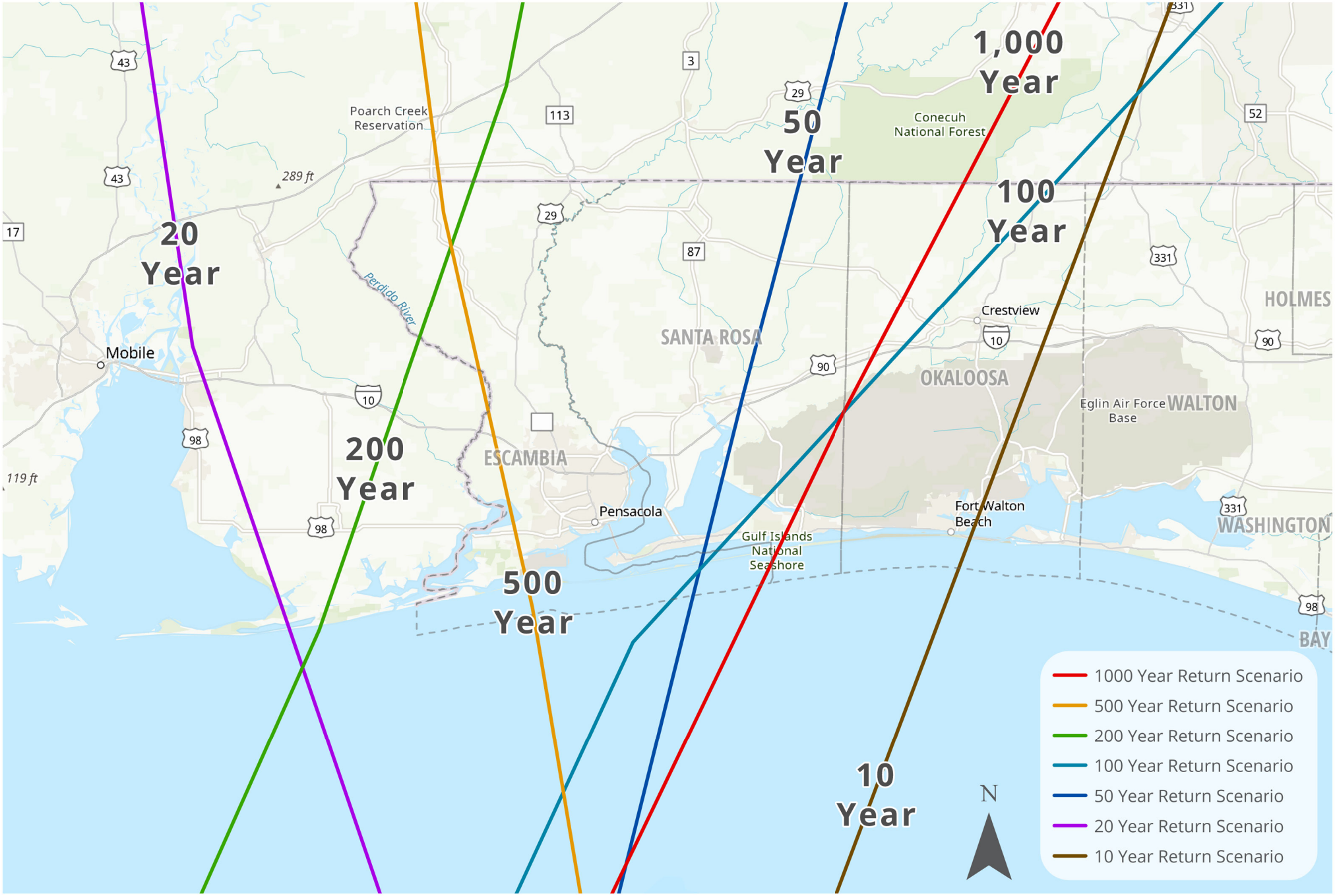
HAZUS Probabilistic Model
Storm Tracks - Holmes County



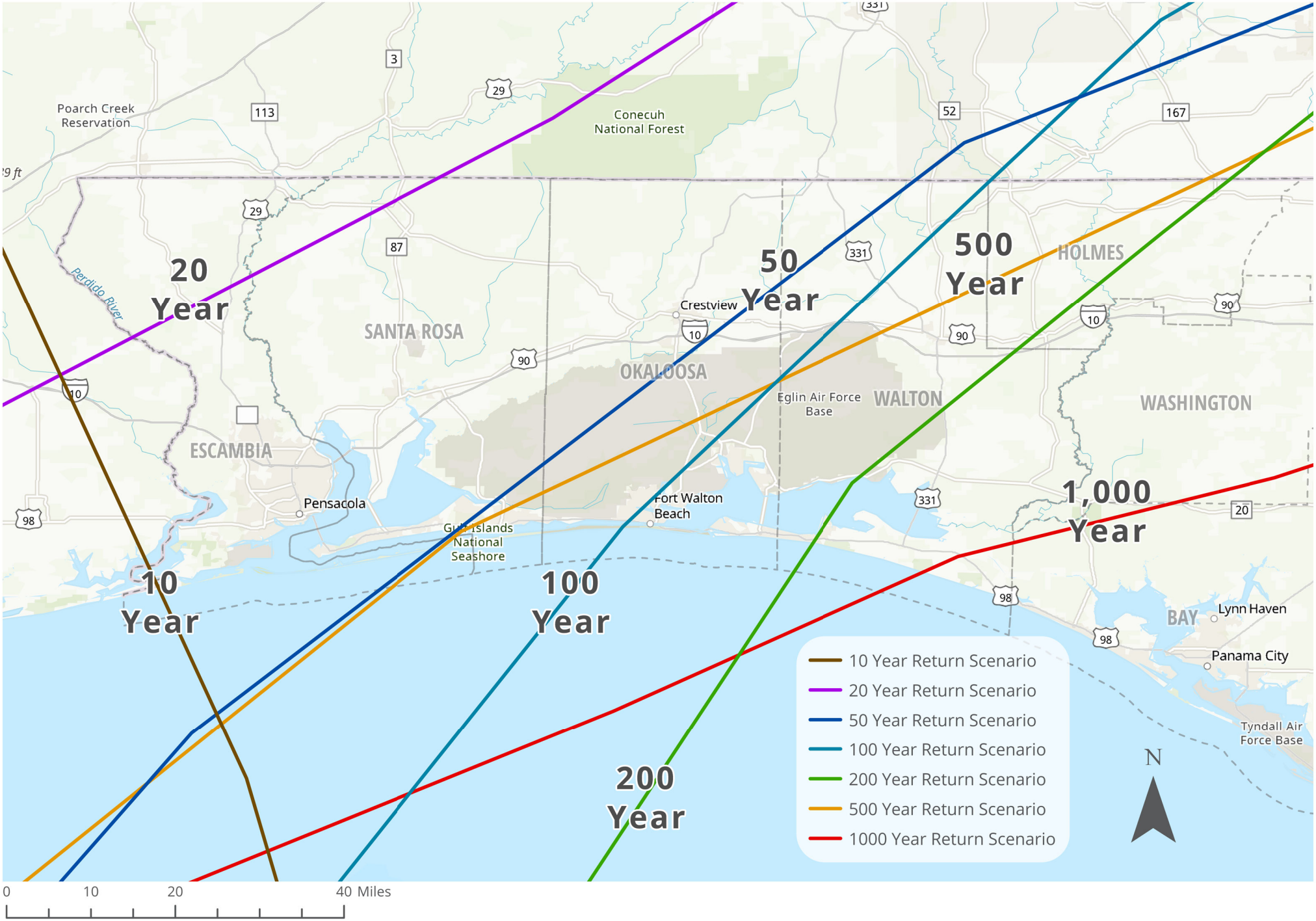
HAZUS Probabilistic Model
Storm Tracks - Okaloosa County



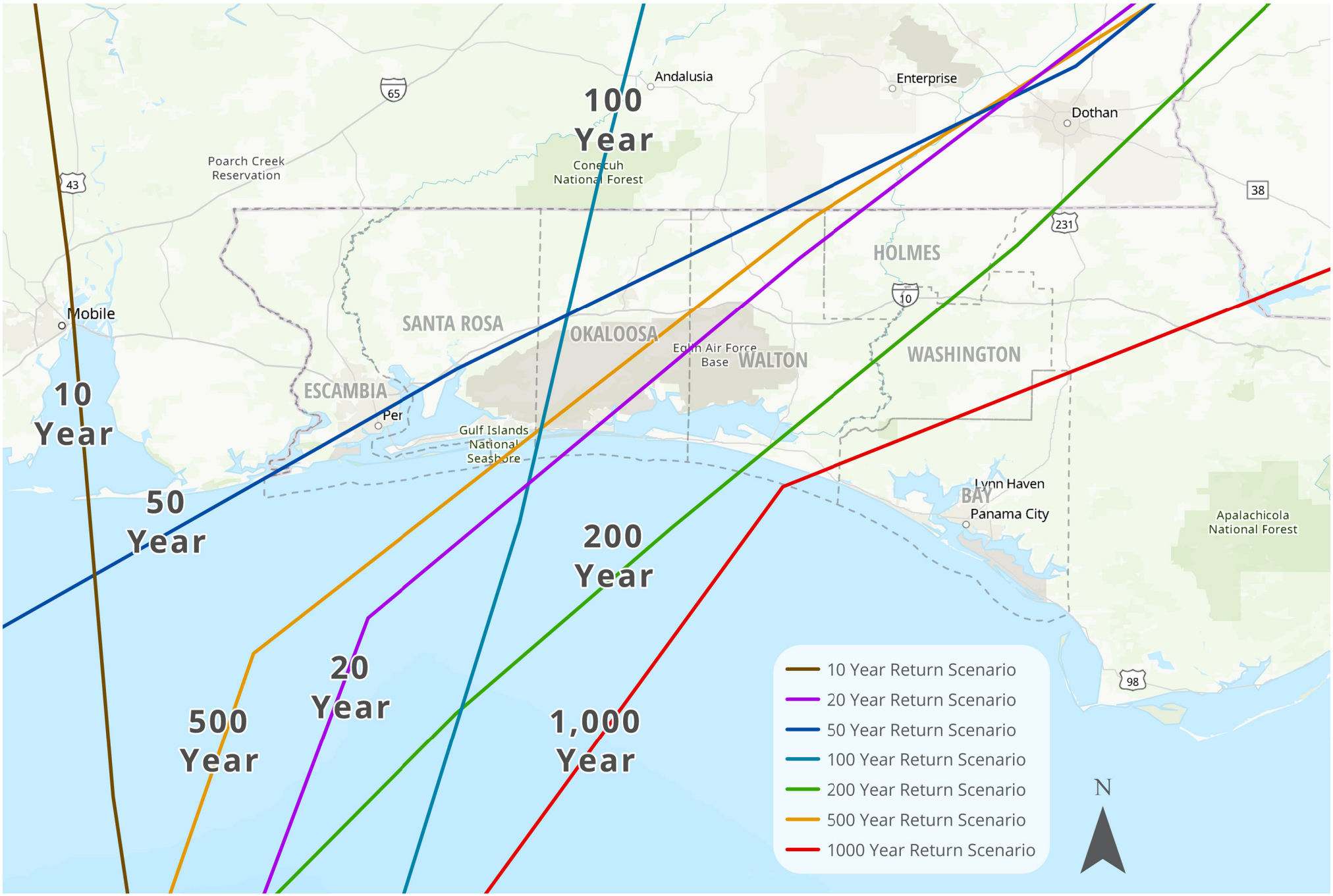
HAZUS Probabilistic Model
Storm Tracks - Santa Rosa County



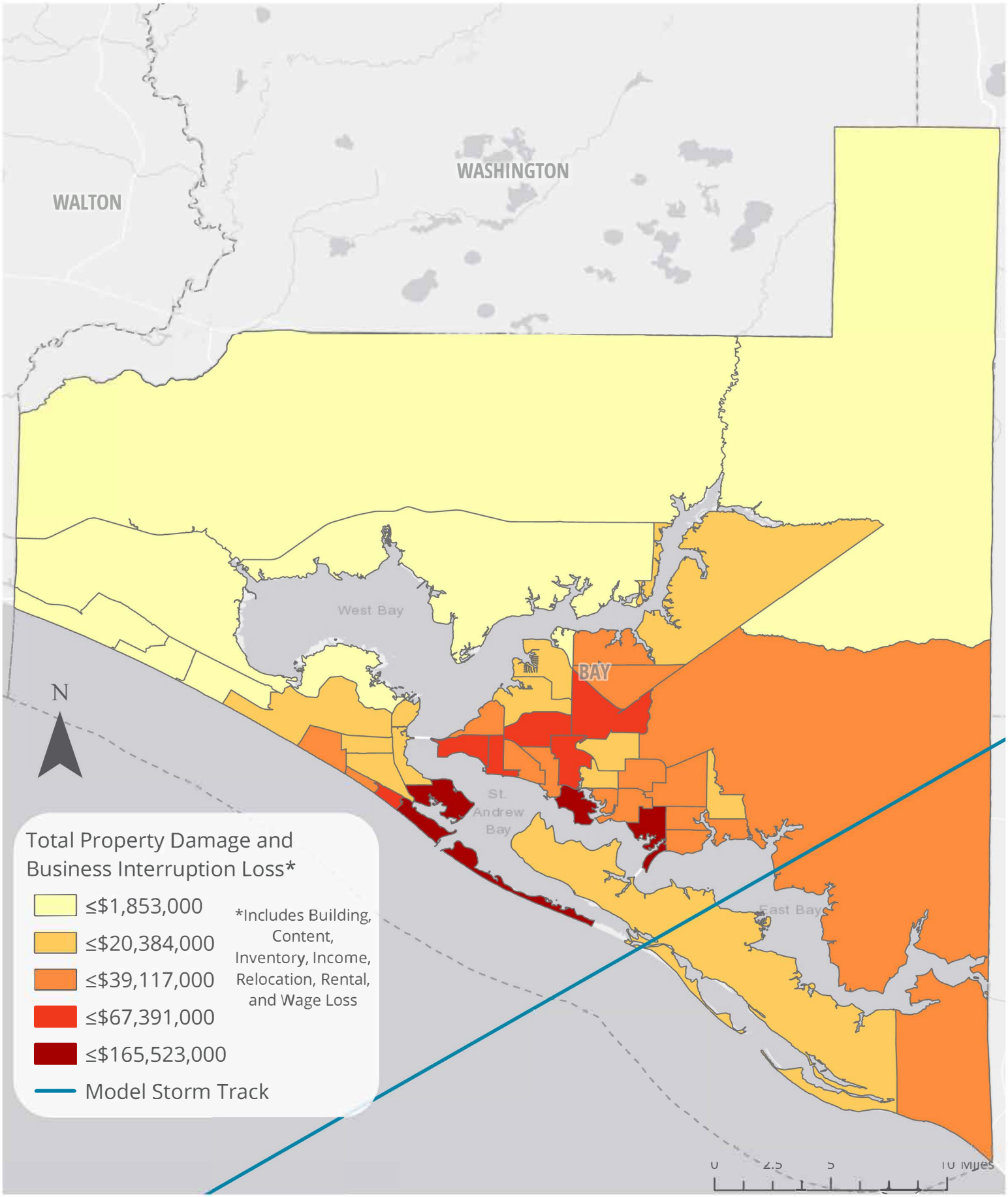
HAZUS Probabilistic Model
Storm Tracks - Walton County



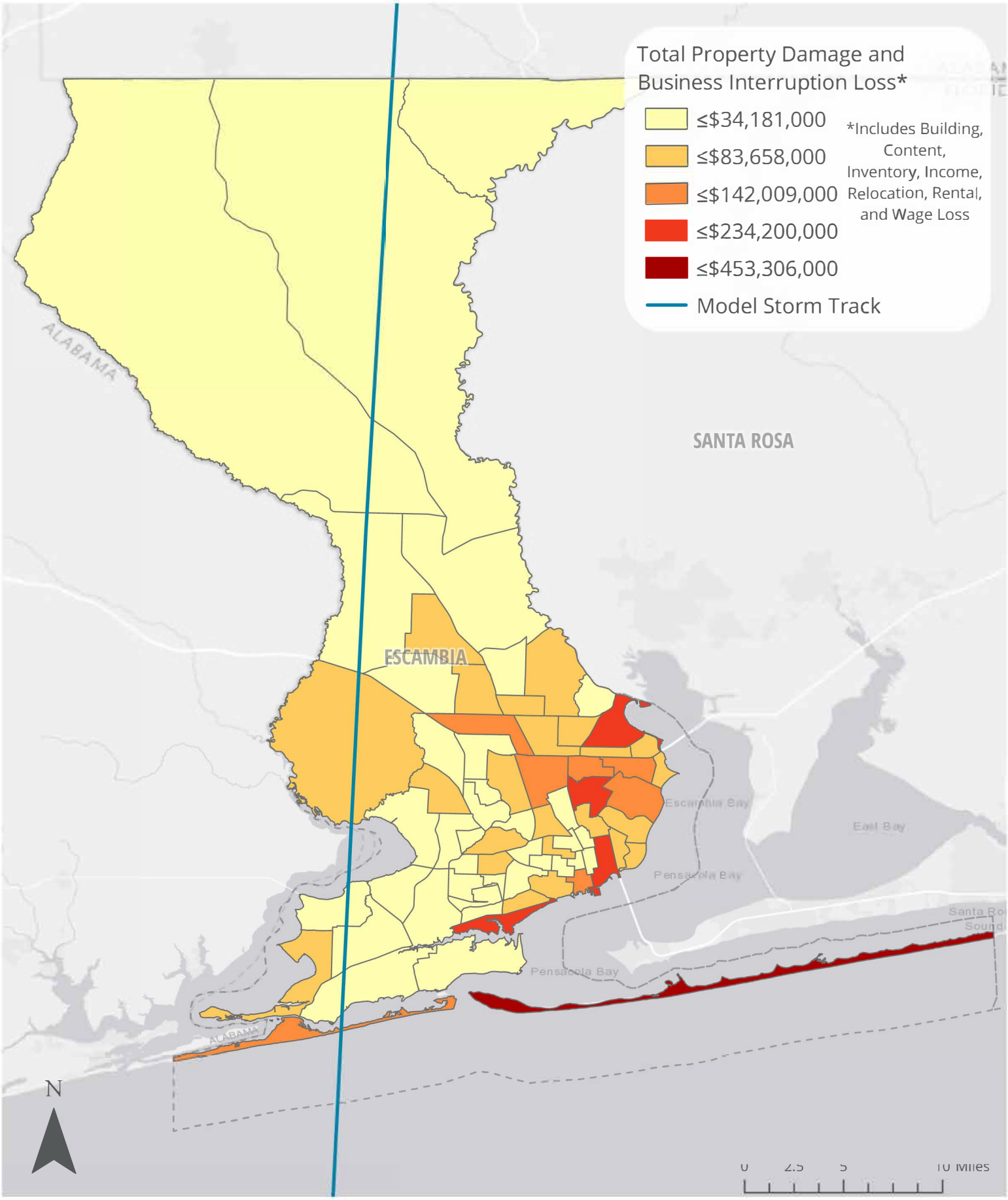
HAZUS Probabilistic Model
Storm Tracks - Washington County



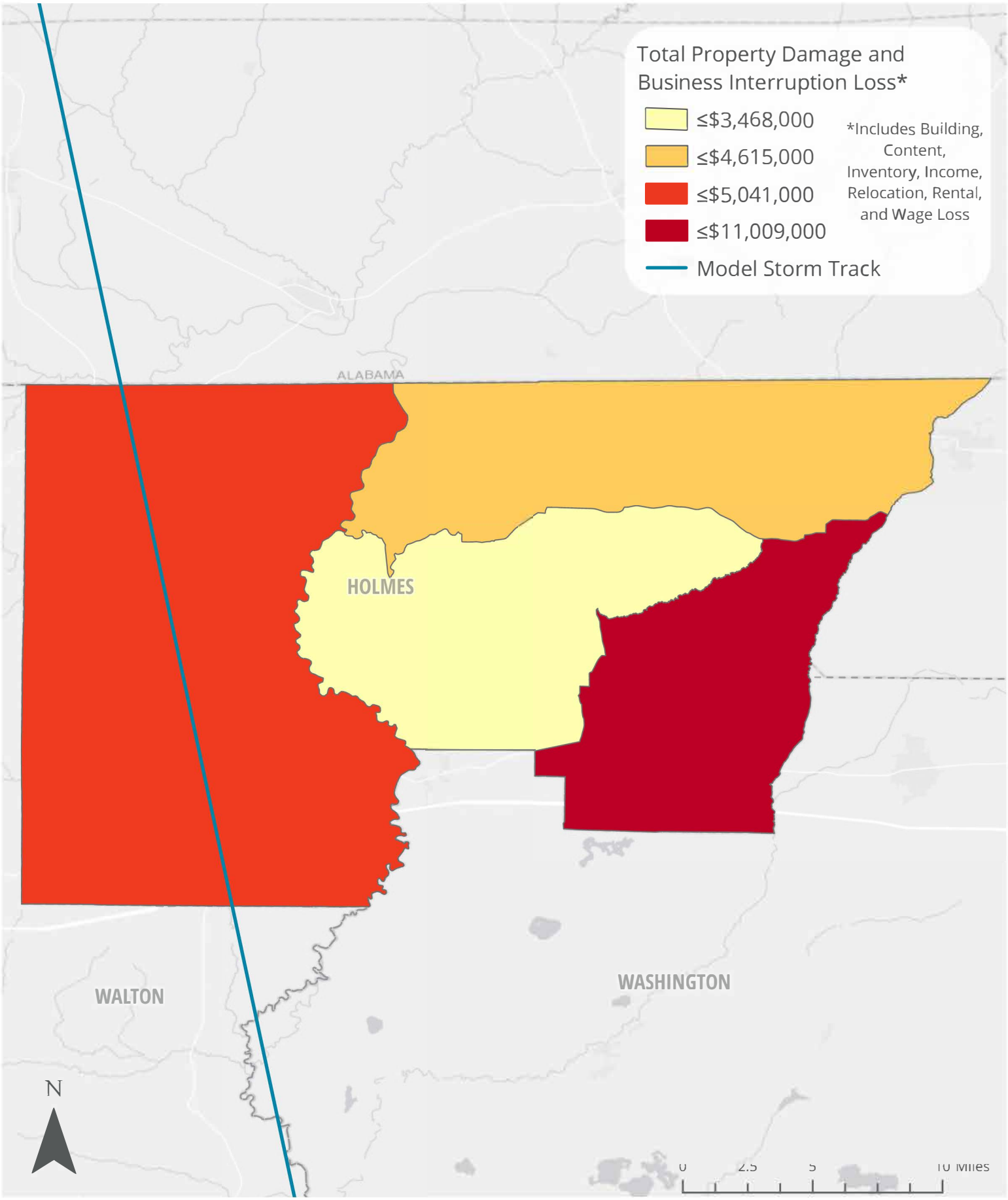
HAZUS Probabilistic Model, 100-Year Return
Building-Related Economic Loss Estimates - Bay County



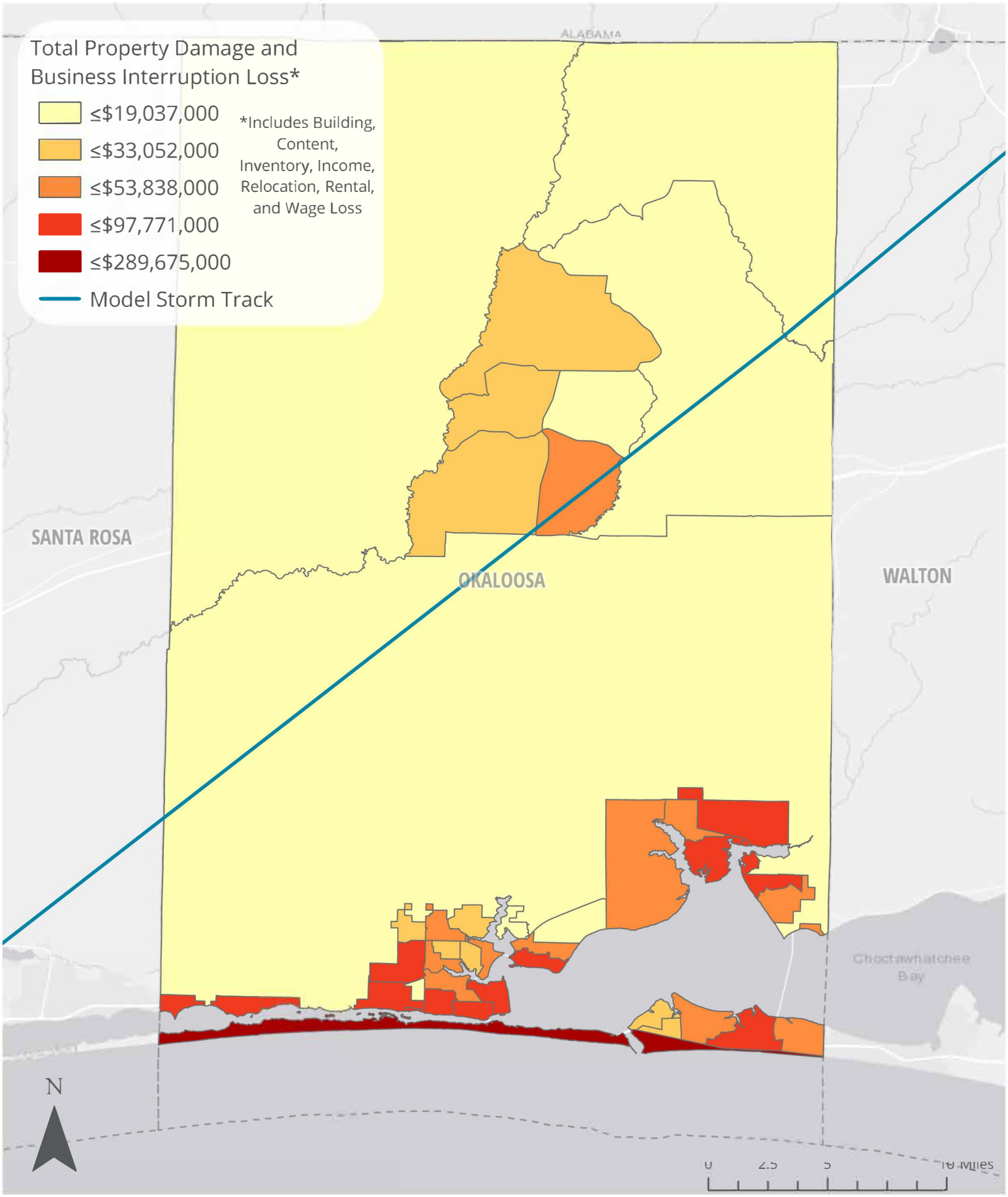
HAZUS Probabilistic Model, 100-Year Return
Building-Related Economic Loss Estimates - Escambia County



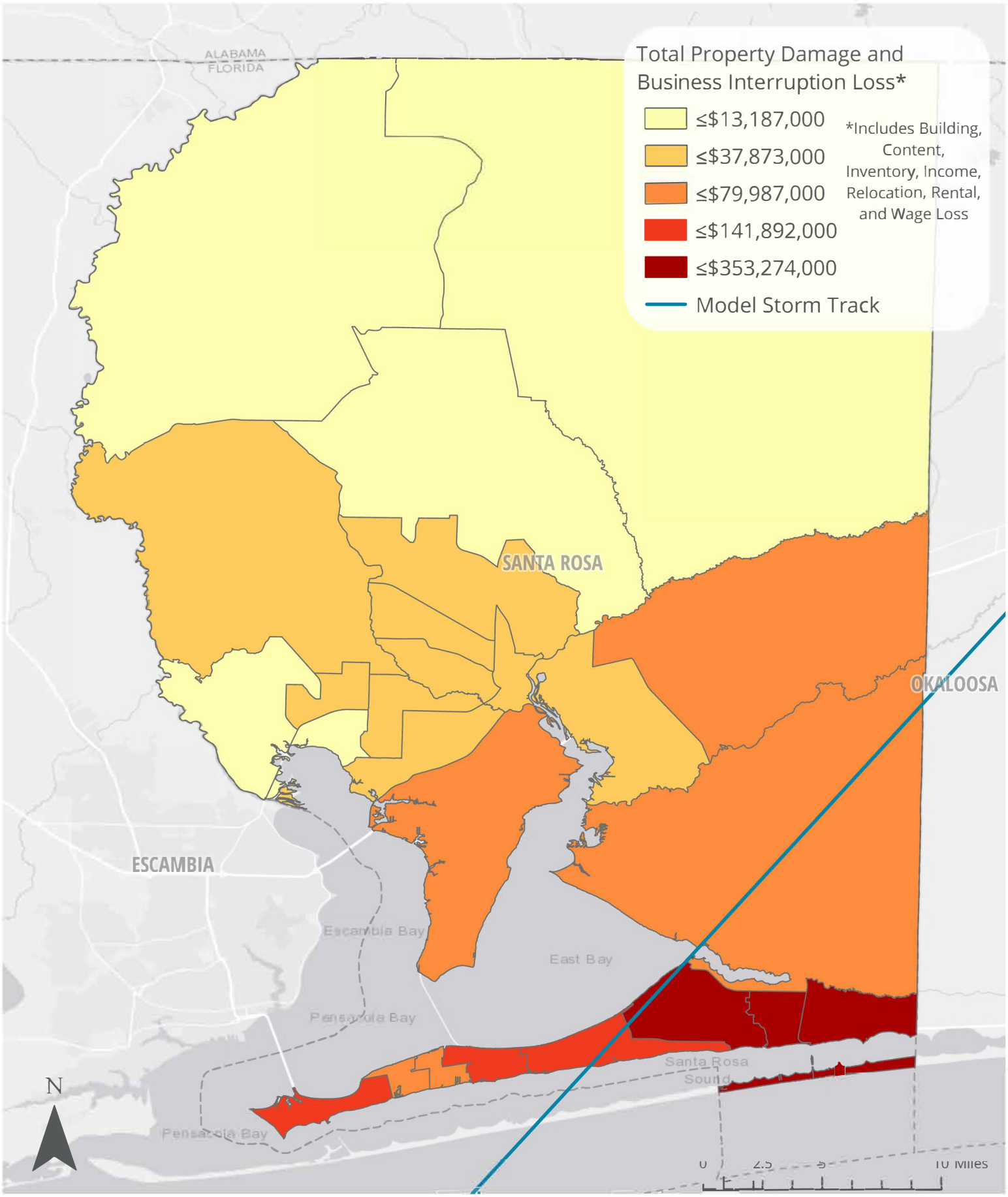
HAZUS Probabilistic Model, 100-Year Return
Building-Related Economic Loss Estimates - Holmes County



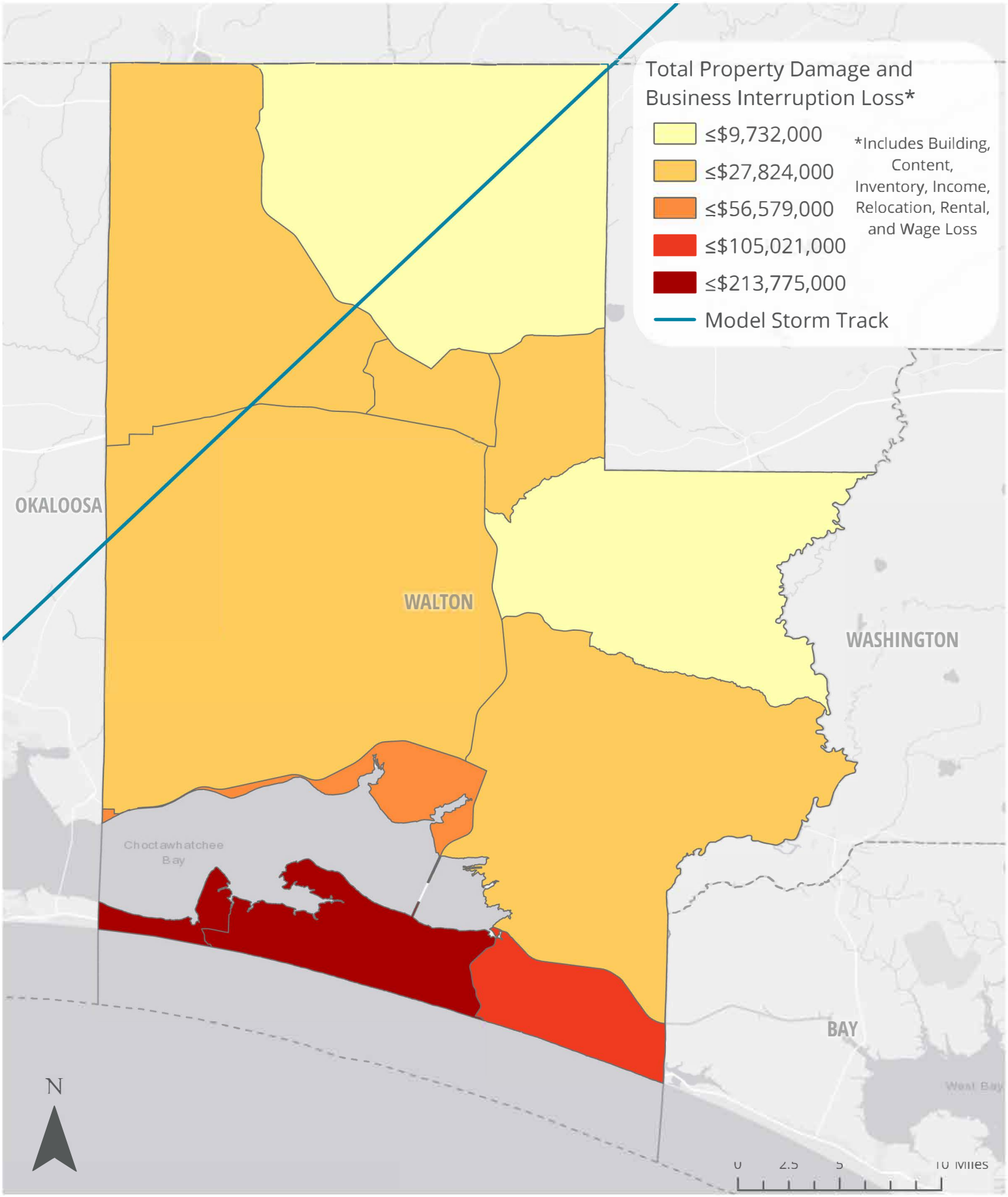
HAZUS Probabilistic Model, 100-Year Return
Building-Related Economic Loss Estimates - Okaloosa County



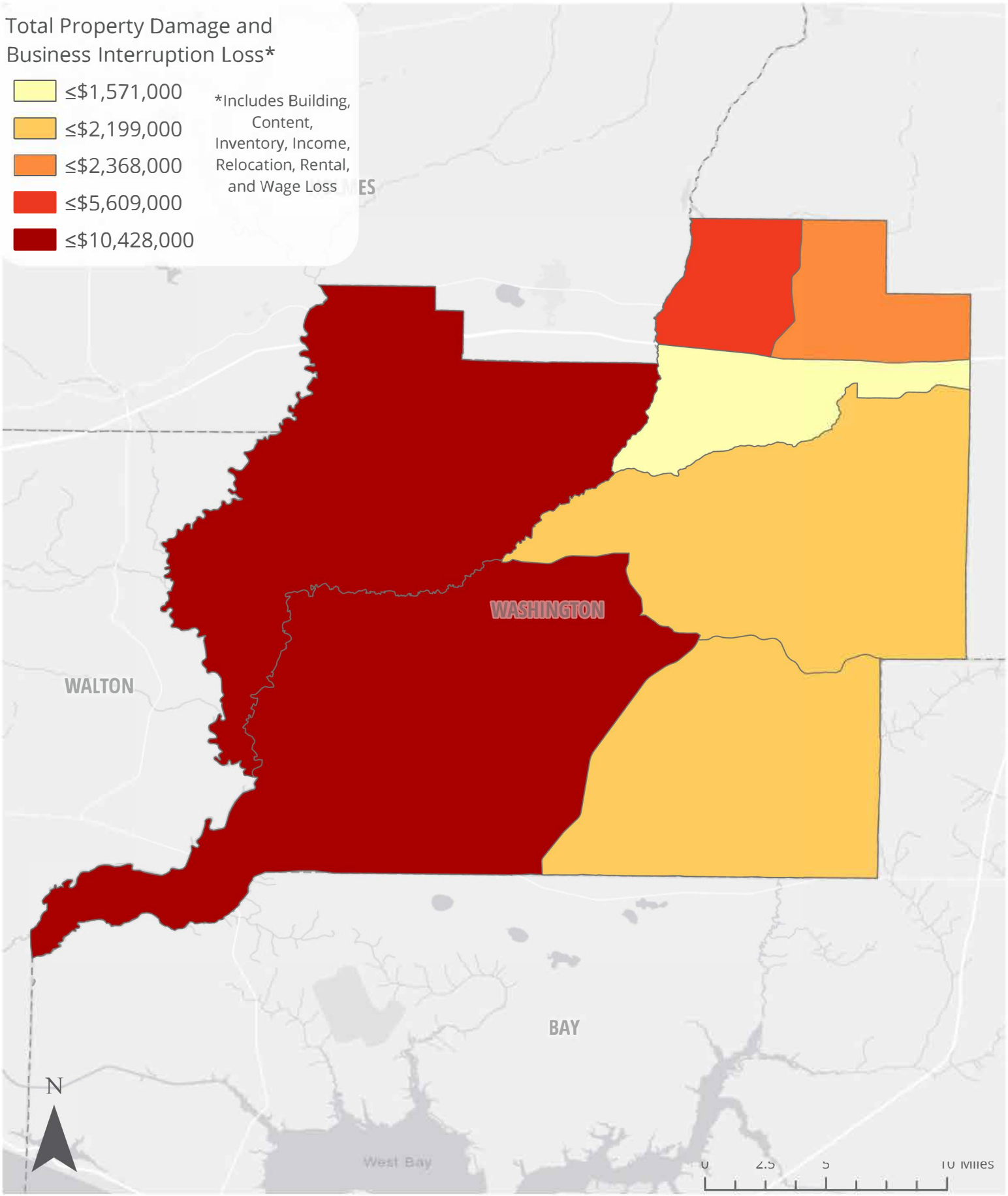
HAZUS Probabilistic Model, 100-Year Return
Building-Related Economic Loss Estimates - Santa Rosa County



HAZUS Probabilistic Model, 100-Year Return
Building-Related Economic Loss Estimates - Walton County



HAZUS Probabilistic Model, 100-Year Return Building-Related Economic Loss Estimates - Washington County



Appendix B

Haas Center Report:
Hurricane Impacts in Northwest Florida

Hurricane Impacts In Northwest Florida

Impact Analysis to Inform a

Comprehensive Post-Disaster Redevelopment Strategy

March 17, 2020

Haas Center
UNIVERSITY of WEST FLORIDA

Haas Center
UNIVERSITY of WEST FLORIDA

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UWF | Haas Center Sea3D
201 E Zaragoza St, Pensacola, FL 32502

This report is for public release by:

EMERALD COAST REGIONAL COUNCIL

About us

Haas Center's Mission: we support communities with market research, workforce development and industrial innovation. We are known for the breadth and depth of our data resources and have been for 25 years. We provide textured, meaningful analysis to an array of customers from the public and non-profit sectors to private industry, including manufacturing. Immersive public manufacturing laboratories, like Sea3D in Pensacola's Historic District, showcase what is possible when creative minds intersect with manufacturing and workforce partners. Our market research covers a variety of topics, including economic impact studies, consumer and visitor profiles, as well as research on talent gaps. Our performance advisors collaborate to bring objective and reliable information and solutions to our customers.

A partnership with FloridaMakes allows us to advance manufacturing by collaborating with business leaders, scientists and consultants. The unique teaming of these experts boosts the productivity and financial outcomes for those who aim to make MORE in Florida's Central Time Zone. The National Institute of Standards and Technology evaluates the success of the manufacturers we support. In just 21 months, 40 businesses have reported more than $118 million in direct impact to their bottom line. The addition of manufacturing to the Haas Center's mission will fuel a practice in support of Industry 4.0. Our data visualization techniques allow accurate mapping of the region's industrial resources.

☎ 850.439.5400 ✉ haascenter@uwf.edu

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Introduction

In the wake of both Hurricane Irma and Hurricane Michael, the Economic Development Administration (EDA), part of the U.S. Department of Commerce, has awarded the Emerald Coast Regional Council (ECRC) financial assistance to develop a recovery plan for the West Florida Region following a major hurricane. The scope of this project includes determining what the economic impacts are after a hurricane hits, which sectors are the most vulnerable to serious devastation after a hurricane, how to mitigate disaster and catalyze recovery.

Figure A. Emerald Coast Regional Council covers seven Northwest Florida counties: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Washington, and Holmes.

To promote a faster recovery time for the communities within the region, this project must be able to identify methods to take preemptive measures before a hurricane makes landfall. In order to create a comprehensive hurricane recovery plan, ECRC must be able to forecast to what extent and where negative impacts are most likely to occur. As such, ECRC commissioned the Haas Center for the research and analysis portion of discovering the total economic impact of a major hurricane on the Northwest Florida Region.

The following provides determinants for the potential physical impacts and economic losses following a major hurricane. Considerations include physical damage to public, private and residential buildings and facilities, such as schools, apartment complexes and grocery stores. Additionally, the recovery time and ability for complete resurgence and revitalization in the economic activity and growth of regional communities are explored. Economic losses, including the loss of jobs and subsequent increase in local job loss and unemployment, as well as the interruptions to economic activity caused by the repair of necessary economic instruments such as the reconstruction of basic municipal infrastructure and commercial buildings, are explored.

Methodology

About the Hazus model

Hazus is a geographic information system (GIS model) made available by the Federal Emergency Management Agency (FEMA). Hazus incorporates peer-reviewed methodology to model the impacts for several types of natural disasters: flooding, hurricanes, coastal surges, tsunamis and earthquakes. Additionally, Hazus models predictors for damages and losses associated with natural disasters.[1]

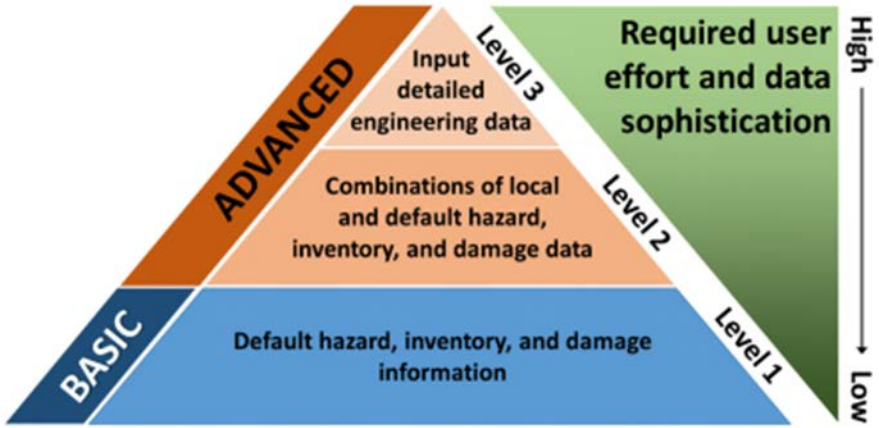

Figure B. The image shows the difference between the levels.
Source. FEMA

Hazus can provide different simulations using a combination of several factors and is an incredibly useful tool for disaster mitigation planning. The outcomes that Hazus provides can help researchers and mitigation planners determine possible economic losses, social impacts and likely physical damage as a result of a specified disaster. Once the model is created, a detailed report of estimated losses caused by a combination of the wind and flood loss is produced. Since Hazus is programmed with infrastructure and building data for the entire United States, models can estimate specific damage made to those structures. While Hazus is not programmed with every dataset that may help to accurately model a disaster, the program allows for the manual entry of data related to a region of interest. With greater manual data accuracy, the better the model can create an effective mitigation plan. The Hurricane model creates hazard data for the wind speed of a hurricane as well as storm surges that may result from a hurricane.

[1] Vickery, P. J., et al. "HAZUS-MH Hurricane Model Methodology. I: Hurricane Hazard, Terrain, and Wind Load Modeling." *NATURAL HAZARDS REVIEW*, no. 2, 2006, p. 82. *EBSCOhost*, search.ebscohost.com/login.aspx?direct=true&db=edsbl&AN=RN187561008&site=eds-live.

The default data provided by Hazus for all disaster types include seven separate data sets for inventory data: general building stock, essential facilities, high potential loss facilities, hazardous material facilities, transportation systems and demographics. The general building stock (GBS) includes residential, commercial, industrial, agricultural, religious, government and educational building types. Essential facilities refer to medical care facilities and hospitals, fire and police stations, emergency centers, schools and other facilities essential to the welfare of communities. High potential risk facilities include nuclear power plants, dams, levees, and military installations or any facility that would result in heavy losses if damaged. Hazardous material facilities refer to facilities that include the storage of corrosives, explosives, flammable materials, radioactive materials and toxins. Transportation systems encompass infrastructures relating to travel such as highways, bridges, tunnels, railways, ports and ferries and airports.

Appropriate model data is different for each type of hazard. The types of results gathered by the finished model can be filtered by building type or damage type. FEMA has written materials that are designed to give mitigation ideas to Hazus modelers that would help in the prevention of major damage caused by several types of natural hazards.

Once loss estimations are obtained, there are two types of scenarios that Hazus can filter the results through – deterministic and probabilistic. A deterministic scenario considers the impact of a single-risk scenario, while a Probabilistic scenario considers the associated impacts of many thousand potential storms that have tracks and intensities reflecting the full spectrum of Atlantic or Central Pacific hurricanes. The hurricane-related hazards considered in the Hurricane Model include estimates of casualties, damages and losses. Resultant wind losses are comprised of wind pressure, wind-borne debris missiles, tree blowdown and rainfall. The effects of storm duration are also included in the model by accumulating damage over the life of each storm. Coastal storm surge is only incorporated in the deterministic model.

Deterministic scenarios are run with a reliance on historical data as well as scientific data, such as the laws of physics or similarly relevant sets of factual data. Deterministic modeling in Hazus analyzes a single scenario with no variables and allows the user to observe the resulting event. It does not consider the full range of possible scenarios or give the likelihood of the outcomes given by the event. Deterministic approaches are best used when evacuation and mitigation plans are being developed for specific events, whereas probabilistic approaches are more appropriate to model the possible outcomes of an event which has not yet happened to the area of interest.

Probabilistic scenarios develop average yearly losses, expected loss distribution, and considers variables as well as relevant sets of factual data. Probabilistic scenarios allow Hazus users to evaluate the statistical likelihood that an event will occur and the impacts that would result from the event. It considers the full range of possible scenarios and

gives the likelihood of each outcome, based on the known data and the unknown variables, as well as both historical and scientific data.

Probabilistic scenarios utilize a return period, also known as a recurrence interval or repeat interval, is an average time or an estimated average time between events such as hurricanes, earthquakes, floods, landslides, or a river discharge flows to occur. The most common misconception is that a 100-year event will only occur once per century, but that is not true. There is a small probability that such an intense event could occur every year. If a 100-year event happened last year, it can happen again before the next century, or even this year. It is also possible for such an event to not occur within a 100-year period. As illustrated by the Global Facility for Disaster Reduction and Recovery (GFDRR), the city of Houston, Texas, USA, has experienced 500-year floods three years in a row, including one caused by Hurricane Harvey. This prompted a revision of the city's zoning regulations to account for changes in the flood drainage basins around Houston and provides an apt example as to how to evaluate probabilistic scenarios.

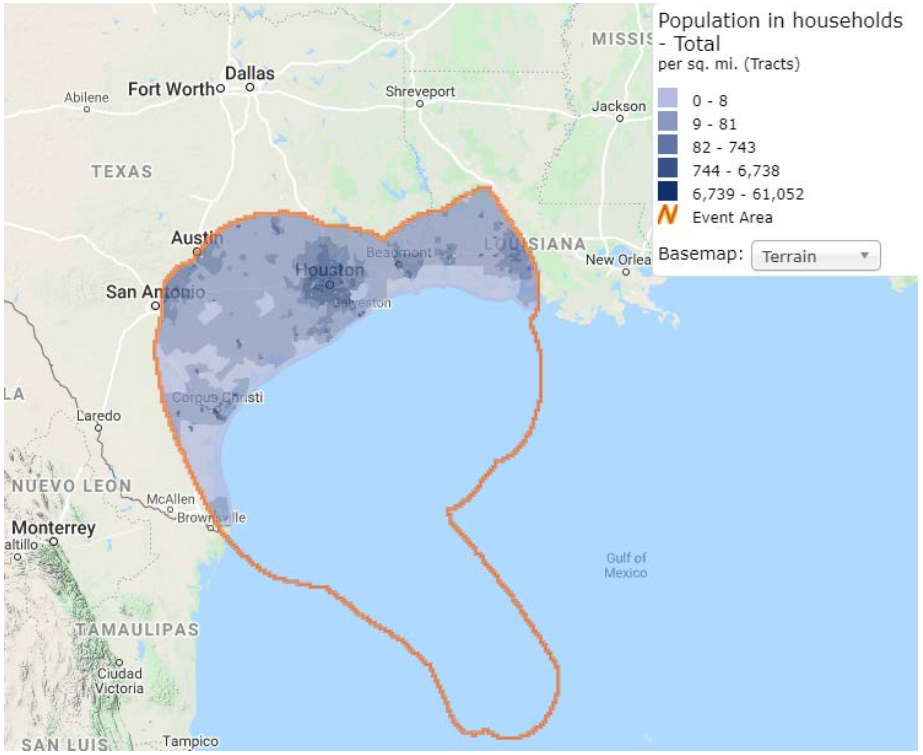

Figure C. Hurricane Harvey's Path and Population Impacted

Source. U.S. Census Bureau, Center for Economic Studies, LEHD (OnTheMap for Emergency Management)

Economic Impact Model and Assumptions.

REMI (Regional Economic Models Inc.), Policy Insight is probably the most widely applied regional economic policy analysis model. Uses of the model to predict the regional economic and demographic effects of policies cover a range of issues. The model is used by government agencies on the national, state, and local level, as well as by private consulting firms, utilities, and universities.

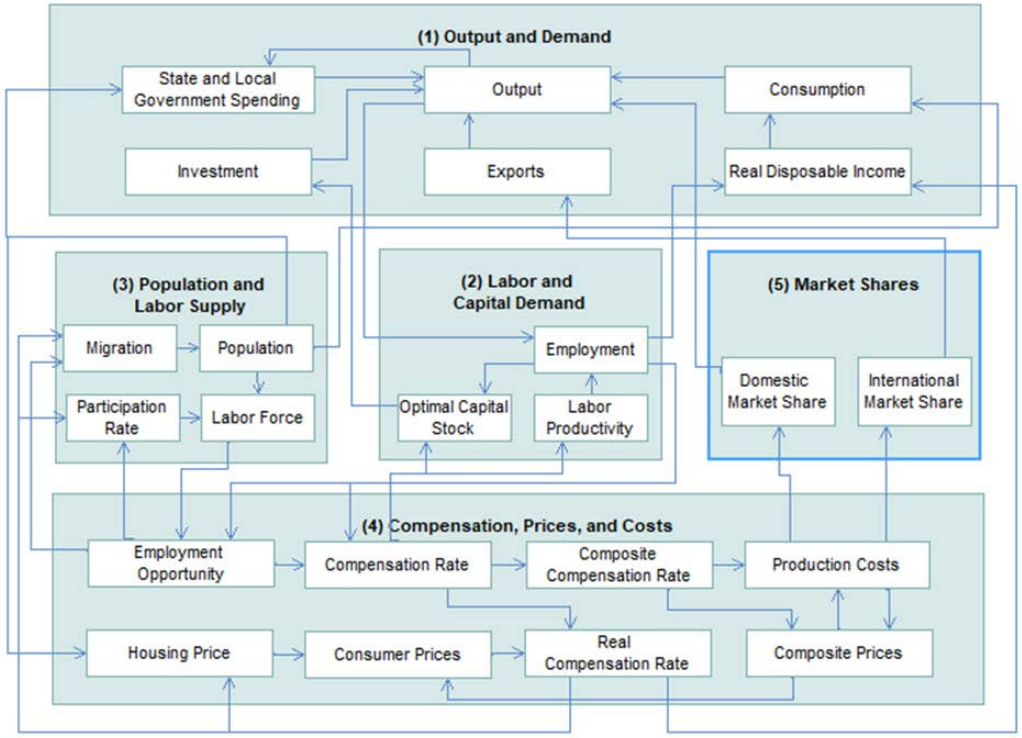

Figure D. REMI Model Linkages

Econometric simulation models combine the sector detail and geography detail of input/output models but provide for functioning economic linkages between sectors and regions over time. The current study utilizes REMI PI+ Version 2.3.1 in a 67-county Florida, 23-sector econometric model. It incorporates the basic input/output linkages, but also incorporates several econometrically estimated parameters. For example, interregional migration in response to changes in economic opportunities, in generating impact results. Due to these between-sector linkages, the model incorporates general equilibrium tendencies as the economy responds to shocks over time. That is, changes in spending in a region affect not just conditions in that market, but also in other markets within the region (economists term this phenomenon as "general equilibrium") and outside the region (trade and migration in response to changes in economic opportunities).

LITERATURE REVIEW

Results of REMI model analysis are reported in terms of employment, non-farm employment, population increases or decreases, labor force (population 16 years and older), Gross State Product (the value of all goods and services in the

economy), output (which can be thought of as sales), personal income (including wages, transfer payments, proprietor incomes, etc.) and disposable personal income (the net of personal income after taxes).

To date, published forecasts for economic impact analyses of natural disasters are sparse. However, Hazus is a broad disaster mitigation program and not specific to any one natural disaster. In an earthquake economic impact analysis performed by Kroll and Lu (2017)[2] analyses were performed through REMI with Hazus output. Among the indicators for economic impact were building damage, output losses, employment change, population change, government spending, government revenue sources and business costs. Additionally, economic forecasts were produced for the immediate future and longer terms (10 years, 20 years).

The state of Georgia released a five-year hazard mitigation plan that incorporated Hazus modeling into the state's current hazard mitigation plan.[3] Among the disaster scenarios investigated were hurricanes. However, detailed methodology, such as economic impact analysis specific to hurricane disaster mitigation, was not disclosed within Georgia's plan.

In contrast, the state of Texas Comptroller's Office performed an economic impact forecast to determine the future impacts of Hurricane Harvey on the regions where the storm made landfall.[4] Utilizing REMI, the analyses projected the economic impact following three years after the hurricane made landfall. Among assumptions that were built into the model included industry-specific inactivity, with weighting differentiation depending upon competition within the industry and logistics network location. For example, it was assumed that the hospitality industry could be excluded from productivity loss analyses due to an influx of evacuees. In total, it was projected that there would be a net gain of $800 million dollars to the economy over three years. However, when analyzing the economic impact of Hurricane Irma on Pinellas County, the hospitality industry was included in the estimated $56 million sales loss from the storm.[5]

[2] Kroll, Cynthia, and Lu, Bobby. "Estimating Economic Impacts of Multi-Hazards in USGS HayWired Scenario Using Remi PRELIMINARY RESULTS." ABAG and MTC REMI User's Conference, 25 October, 2017, Charleston, South Carolina. Conference Presentation.
[3] Georgia Emergency Management and Homeland Security Agency (GEMA/HS). *Georgia Hazard Mitigation Strategy Standard and Enhanced Plan Effective March 18, 2019 – March 17, 2024.* 2019, Print: https://gema.georgia.gov › document › publication › download
[4] Texas Comptroller of Public Accounts. *Fiscal Notes, A Review of the Texas Economy from the Office of Glenn Hagar, Texas Comptroller of Public Accounts.* "A Storm to Remember: Hurricane Harvey and the Texas Economy." February, 2018, Print: https://comptroller.texas.gov/economy/fiscal-notes/2018/special-edition/docs/fn.pdf
[5] Tampa Bay Regional Planning Council. "Regional Economic Impact Analysis Program Featuring REMI Policy Insight® and IMPLAN®." November, 2018. http://www.tbrpc.org/wp-content/uploads/2018/11/2018-Pinellas-County-Hurricane-Irma-Impact-Analysis.pdf

Also included in our review was a Hillsborough County, Florida economic impact forecast following category 3 and 5 hurricanes.[6] Although this study provided a comparatively more in-depth review of methodology (REMI along with the MEMPHIS model), overall literature reviews provided greater support for using Hazus in conjunction with REMI.

In a 2017 REMI webinar, Peter Evangelakis, Ph.D., presented an economic impact analysis of hurricanes in Hillsborough County (Tampa Bay, FL).[7] Five different hurricane components were assumed, using REMI for Hillsborough County in 2017: two-week economic shutdown (power outages, business closure); one year $10 billion loss and immediate capital stock restoration (structural damage); long-term insurance premium increases for both households and businesses (production costs), and long-term business and/or population decreases (migration).

Hurricane Impact

4 Main Stages

1. Baseline (GDP level before the hurricane)
2. Loss (sustained major loss of GDP)
3. Recovery (rebuilding efforts take effect)
4. New Equilibrium (may be several years later)

Source. REMI

Beginning with a two-week economic shutdown, a decrease in sales was estimated across all industries. In a two-week timeframe, approximately 4% of yearly sales would be lost. During this period, it was projected that there would be approximately $8.6 billion loss in output. Correspondingly, employment losses of about 60,000 jobs would be incurred. With less need for nonresidential capital (as businesses shutdown), there would be a slight disinvestment in capital on its own. Following the two weeks, businesses would re-open, returning to roughly normal levels during the twelve months that follow the hurricane. However, the long-term new equilibrium would be slightly lower than pre-hurricane levels.

While the two-week shutdown looked at an indirect effect on capital, the $10 billion loss describes a direct effect of a hurricane on capital stock in both residential (housing) and nonresidential (commercial, infrastructure). Due to deficits in what is needed by the community, investments in capital stock spike, following the initial loss. From the residential side, people that stay in the area with homes that are damaged or destroyed begin the rebuilding process. Over the following eight years, it was projected that the need for capital stock would return to equilibrium. Due mainly to

[6] Tampa Bay Regional Planning Council. "Economic Analysis of a Hurricane Event in Hillsborough County, Florida." February, 2009. https://www.hillsboroughcounty.org/library/hillsborough/media-center/documents/emergency-management/21--pdrp-economic-analysis-of-a-hurricane.pdf

[7] Evangelakis, Peter. "The Economic Impact of Hurricanes: The Four Major Impact Phases." REMI, Webinar, 29 September, 2017, https://owl.purdue.edu/owl/research_and_citation/mla_style/mla_formatting_and_style_guide/mla_works_cited_other_common_sources.html

construction increases, there is a positive output impact in the short and medium-term. As a result, there is an increase in construction employment, which corresponds to an increase in the population. Accordingly, there are increases in spending across other industries including retail trade and intermediate inputs such as manufacturing.

HAZUS Scenario	SSHWS	# of Weeks Business Closed	Annual % of Lost Sales
20 Years	Category 2	1	1.92%
100 Years	Category 3	1.5	2.88%
500 Years	Category 5	2.5	4.81%
1,000 Years	Category 5	3	5.77%

Table 1. Assumptions for the Probabilistic Economic Impact Modeling

The next two assumptions (increase in insurance premiums and migration from the hurricane-effected areas), although potentially useful in describing factors that may contribute to a decrease in output, were objectively difficult to quantify. The methodology utilized to determine the percentage increase in insurance premiums and determinants for the number or percentage of business and residents that may relocate following a hurricane was not disclosed. As such, the use of these two assumptions would not be appropriate for the purposes of this economic impact analysis.

Across all assumptions, it was predicted that there would be an initial loss in population. This reduction was attributed to output losses. It was further predicted that there would be some population gains over time, possibly attributable to the increase in construction efforts (rebuilding infrastructure, dwellings and commercial properties). However, it was estimated that there would remain 16,000 fewer residents in the Hillsborough area over the 10 years following the hurricane.

ECRC ASSUMPTIONS

The economic impact of a Hurricane was modeled using REMI PI+ version 2.3 for each of the seven counties. The REMI model was selected due to the dynamic impacts across sectors that would likely take place over time. The direct inputs were modeled in 2019, but impacts were provided until 2023 (a five-year period). The modeled results include five different scenarios (Probabilistic Table 1; Deterministic Table 10) ranging in Saffir Simpson Hurricane Wind Scale (SSHWS) or strength of the storm. The use of two assumptions were made to model the natural disaster impacts. First, the economic loss due to foregone sales was assumed, resulting in immediate job loss. The assumption was made that sales were lost across industries for several weeks, based on storm strength, in which business would have been shut down. Second, we would use the direct impacts to structures, as provided by the Hazus model.

County	Input	20 yr	100 yr	500 yr	1,000 yr
Bay	Non-Residential	-0.003	-0.252	-1.019	-1.432
Escambia	Non-Residential	-0.023	-0.942	-3.237	-4.576
Holmes	Non-Residential	0.000	-0.007	-0.041	-0.069
Okaloosa	Non-Residential	-0.008	-0.345	-1.427	-1.944
Santa Rosa	Non-Residential	-0.008	-0.220	-1.006	-1.383
Walton	Non-Residential	-0.006	-0.143	-0.765	-0.901
Washington	Non-Residential	0.000	-0.008	-0.055	-0.067
Bay	Residential	-0.127	-0.880	-3.120	-4.413
Escambia	Residential	-0.248	-2.386	-8.000	-11.074
Holmes	Residential	-0.002	-0.014	-0.046	-0.071
Okaloosa	Residential	-0.197	-1.366	-4.427	-6.121
Santa Rosa	Residential	-0.165	-1.382	-4.659	-6.540
Walton	Residential	-0.054	-0.451	-1.596	-2.369
Washington	Residential	-0.003	-0.019	-0.069	-0.132

Table 2. Impact Assumptions from Probabilistic Hazus Results in $ Billions

The third assumption was that there would be an immediate response to rebuilding residential and commercial damaged structures. The REMI PI+ model allows for lagged response to rebuilding capital structures, but this option was not selected. Utilizing the immediate response input generates a positive impact on the region as construction induces spending and creates jobs. When a lagged response is chosen, the majority of the rebuilding takes place in year two instead of year one. The dollar amount of rebuilding residential and non-residential structures in each county, for each scenario, was based on estimates from the HAZUS model (Probabilistic Table 2; Deterministic Table 11). Both assumptions together show the true net impact that occurs in year one after different classifications of storms. These results are most striking in the largest scale hurricanes, where the capital stock disaster is so widespread that robust rebuilding in year one often generates a positive job impact. Deterministic impact results begin on page 22.

Impact of Hurricanes in Northwest Florida

Before Hurricane Michael hit in October 2018, it had been 13 years[8] since a Category 3 or higher hurricane made landfall on the Gulf Coast of Florida (see Figure D). According to the National Weather Service, Michael was the first hurricane to make landfall in the United States as a category 5 since Hurricane Andrew in 1992, and only the fourth on record.[9] Michael is also the strongest hurricane landfall on record in the Florida Panhandle and only the second known category 5 landfall on the northern Gulf coast.

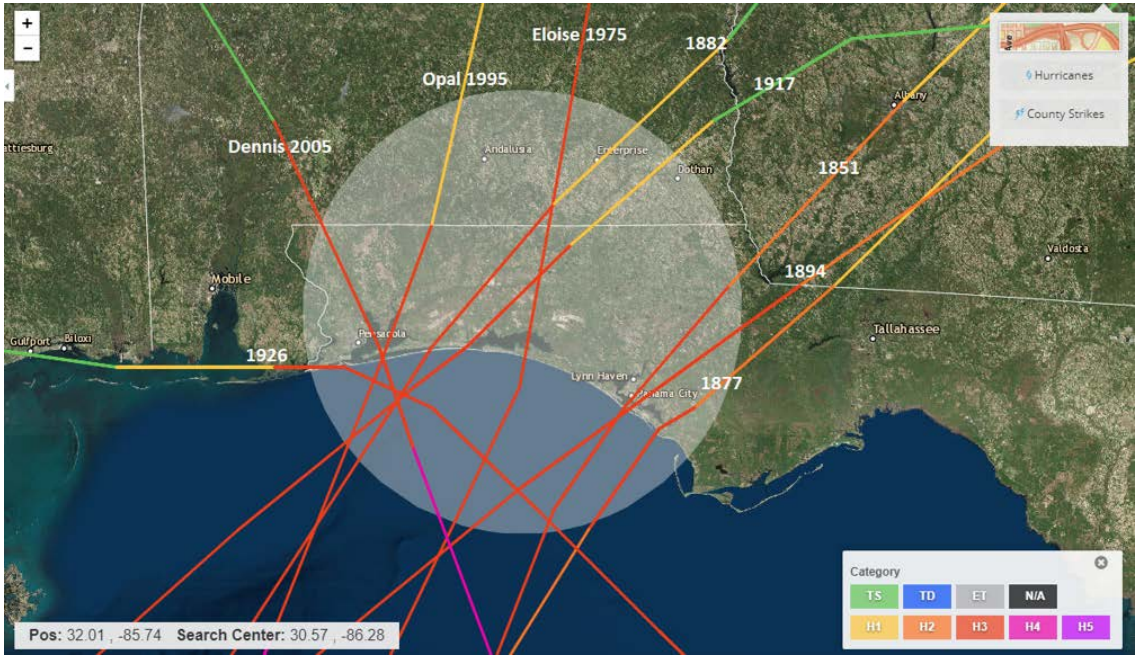

Figure E. Graphic depicting all tropical cyclones (category 3 or higher) to have made landfall over the Florida Panhandle before Hurricane Michael.

Source. National Weather Service

Those impacts were devastating. Michael caused at least $25 billion in total economic impact and resulted in 16 deaths. In Florida, the hurricane resulted in more than 31,000 individual applications to FEMA, nearly $148 million in household and individual dollars allocated for assistance, and $544 million in public assistance grants obligated. The SBA gave out $644.7 million disaster loans, while an estimated $224.1 million in claims was paid to 4,270 National Flood Insurance Program policyholders. The disaster negatively impacted the ability of Bay County to do business – in Quarter 4 of 2018, taxable gross sales was down nearly 10% over the previous year, while the state improved its taxable sales over the year by 6.75%. If Bay County had been expected to have increased its sales like the State of Florida by 6.75% over the year, then an estimate of sales impact is that the storm provided -15.35% in less Gross Sales. This result, alongside other studies covered earlier in this report, help to

[8] The previous year, Hurricane Ivan made landfall in Gulf Shores, AL, leaving significant destruction across Florida's Escambia and Santa Rosa counties.
[9] The others are the Labor Day Hurricane in 1935 and Hurricane Camille in 1969.

provide useful benchmarks to this study's assumptions about the impact on sales of communities directly affected by hurricanes.

Reading the Results

As noted in the methodology section, each of these tables provide results for each applicable hurricane scenario for each individual county. The assumptions for sales decline are assumed as discussed, where the building impact description comes from the Hazus model. In addition, these results are the **net impact** of destruction and rebuilding. As an example, if Bay County were modeled with *only* the sales lost from the hurricane, it would have assumed that nearly 6,400 jobs were lost. However, rebuilding and recovery is also anticipated to start within the same calendar year. A robust recovery effort is assumed to support more than 3,200 jobs. Thus, the net impact means that while many jobs are lost, construction and recovery mitigate some of that total loss. Each results table includes the 20-year, 100-year, 500-year, and 1,000-year probabilistic scenarios. See tables 1 and 2 for a reminder of the assumptions that support each scenario and modeling choices.

Probabilistic Scenarios

ESCAMBIA

Table 3 outlines the assumptions specific to Escambia County for each of the probabilistic hurricane scenarios. The net impact results of a 20-year storm is greater in both jobs and GDP than any other storm. In the first year of this storm, Escambia County is projected to lose nearly 4,800 jobs and $374 million in GDP.

In the case of the 1,000-year storm, it produces a net gain in jobs during year one with 1,537 net new jobs. The 1,000-year storm also raises GDP by $82 million. These gains are generated because recovery is modeled as starting as soon as clean up and recovery is possible. Although the 1,000-year storm would cause more destruction and economic loss than any of the other storms listed, the assumed immediate influx of construction and other relief-related efforts would outweigh the negative impacts of the storm. Job gains are largely supported into the long-term by the extended timeline required for such a recovery effort (i.e., construction spending, purchasing materials and home goods, and increased accommodations needs of out-of-area workers).

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	-1.92%	-2.88%	-4.81%	-5.77%
Residential (2019 $ Billions)	-0.27	-2.57	-8.61	-11.92
Non-Residential (2019 $ Billions)	-0.02	-1.01	-3.48	-4.92

Impact Results by Type of Storm in Escambia County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-4,791	304	309	349	317
100 yr	-4,068	4,327	4,478	4,131	3,469
500 yr	-631	14,892	15,453	14,100	11,800
1,000 yr	1,537	20,702	21,524	19,647	16,461
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-374	26	25	28	26
100 yr	-325	327	340	317	268
500 yr	-76	1,120	1,172	1,080	908
1,000 yr	82	1,556	1,632	1,504	1,266

Table 3. Economic Impact Results for Escambia County

SANTA ROSA

Table 4 highlights the impact results by type of probabilistic storm for Santa Rosa County. It also outlines the specific assumptions that were made based on this county's regional economy and profile of capital stock. Like Escambia County (Table 3), in the first year of a 20-year or 100-year storm scenarios, the county's expected job losses would be substantial. It is projected that 1,317 jobs would be lost for a 20-year storm and 824 jobs for a 100-year storm, during year one. Recovery and rebuilding begin to generate positive job growth in the second year, which is sustained through 2023. The first year also sees a net decline in sales between $50 and $93 million due to business closures.

For the 500-year and 1,000-year scenarios, both see a net positive job gain in year one because of the large influx of spending on recovery efforts. Moreover, spending is so substantial that it increases the region's gross sales by $108 million and $205 million, respectively. Those recovery efforts continue over the five-year period, with spending slowing down – though still substantial – by year five.

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	**-1.92%**	**-2.88%**	**-4.81%**	**-5.77%**
Residential ($2019 Billions)	**-0.18**	**-1.49**	**-5.01**	**-7.04**
Non-Residential ($2019 Billions)	**-0.01**	**-0.24**	**-1.08**	**-1.49**

Impact Results by Type of Storm in Santa Rosa County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	**-1,317**	**194**	**171**	**164**	**138**
100 yr	**-824**	**1,789**	**1,791**	**1,626**	**1,360**
500 yr	**1,102**	**6,146**	**6,256**	**5,668**	**4,766**
1,000 yr	**2,286**	**8,626**	**8,801**	**7,975**	**6,712**
Impact ($2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	**-93**	**16**	**14**	**14**	**11**
100 yr	**-50**	**140**	**142**	**130**	**110**
500 yr	**108**	**481**	**495**	**452**	**382**
1,000 yr	**205**	**675**	**696**	**636**	**1,266**

Table 4. Economic Impact Results for Santa Rosa County

Escambia County and Santa Rosa County make up one metropolitan area – the Pensacola-Ferry Pass-Brent Metropolitan Statistical Area (MSA) – and thus it is intuitive that these two counties would have similar trends. They are the only two counties in which recovery efforts are so amplified for the worst scenarios that job and sales immediately become positive.

OKALOOSA

Table 5 details the impact results in both jobs and sales lost for Okaloosa County for each of the hurricane probabilistic scenarios modeled. The assumptions specific to this county and its economy are outlined in the top third of the table. Okaloosa County hurricane impacts generate an anticipated job loss between 1,624 and 2,883 in year one. Recovery efforts in year two generate a positive job impact for all probabilistic scenarios.

Table 5 also breaks down the impacts of the hurricane scenarios by Gross Domestic Product. In the year of the hurricane, it is projected that Okaloosa County would lose between $100 million and $235 million in sales. In 2020, the sales impacts become positive for all probabilistic scenarios, though some are substantially higher (e.g., 1,000-year impacts, $819 million) than others. Positive GDP impacts are generated through year five after the hurricane.

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	**-1.92%**	**-2.88%**	**-4.81%**	**-5.77%**
Residential (2019 $ Billions)	**-0.21**	**-1.47**	**-4.76**	**-6.59**
Non-Residential (2019 $ Billions)	**-0.01**	**-0.37**	**-1.54**	**-2.09**

Impact Results by Type of Storm in Okaloosa County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	**-2,777**	**192**	**199**	**210**	**184**
100 yr	**-2,883**	**1,925**	**1,985**	**1,827**	**1,527**
500 yr	**-2,153**	**6,550**	**6,799**	**6,201**	**5,178**
1,000 yr	**-1,624**	**9,104**	**9,468**	**8,632**	**7,209**
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	**-233**	**19**	**19**	**20**	**18**
100 yr	**-235**	**175**	**181**	**168**	**141**
500 yr	**-155**	**590**	**616**	**567**	**477**
1,000 yr	**-100**	**819**	**857**	**789**	**664**

Table 5. Economic Impact Results for Okaloosa County

WALTON

Walton County's net economic impacts are documented by probabilistic hurricane scenario in Table 6. Its assumptions for lost sales, residential and non-residential stock impacts are detailed in the top third of the table.

Walton County is projected to lose between 639 and 1,149 jobs in the year that a hurricane strikes the county. Recovery begins that year as modeled due to the immediate recovery spending but does not begin to generate positive job growth until 2020. Similarly, Walton is modeled to lose between $57 million and $108 million in the year of the hurricane. Sales related to recovery and reconstruction begin the same year, but do not generate positive GDP impacts until the year after the storm. In that year, positive sales are projected to be between $8 and $322 million.

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	-1.92%	-2.88%	-4.81%	-5.77%
Residential (2019 $ Billions)	-0.06	-0.48	-1.72	-2.55
Non-Residential (2019 $ Billions)	-0.01	-0.15	-0.82	-0.97

Impact Results by Type of Storm in Walton County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-1,039	72	58	61	53
100 yr	-1,149	620	605	548	448
500 yr	-894	2,262	2,270	2,032	1,666
1,000 yr	-639	3,298	3,309	2,951	2,412
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-98	8	6	6	5
100 yr	-108	62	60	54	45
500 yr	-83	221	222	201	166
1,000 yr	-57	322	324	292	240

Table 6. Economic Impact Results for Walton County

BAY

Table 7 provides the probabilistic impact assumptions and outcomes on GDP and jobs for Bay County. Job losses would range between 2,618 – 3,413 within the first year of the hurricane. By year five, however, there is an anticipated net increase in jobs of 179 (20-year hurricane) – 6,828 (100-year hurricane), linked to storm intensity.

Regarding GDP, probabilistic scenarios predicted the greatest first year losses with a 100–year storm ($295 million). By year two, the largest second year gains in GDP were projected to be $665 million in the 1,000-year storm scenario. Across all scenarios, year five GDP moves closer to year two estimates. For example, in the 20–year storm scenario, the GDP for both years (2020 and 2023) are positive $15 million.

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	-1.92%	-2.88%	-4.81%	-5.77%
Residential (2019 $ Billions)	-0.14	-0.95	-3.36	-4.75
Non-Residential (2019 $ Billions)	0.00	-0.27	-1.10	-1.54

Impact Results by Type of Storm in Bay County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-3,006	154	155	191	179
100 yr	-3,413	1,616	1,662	1,560	1,311
500 yr	-3,054	6,030	6,252	5,744	4,785
1,000 yr	-2,618	8,586	8,934	8,196	6,828
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-253	15	13	16	15
100 yr	-295	128	129	123	104
500 yr	-287	468	484	449	376
1,000 yr	-264	665	692	641	537

Table 7. Economic Impact Results for Bay County

WASHINGTON

Washington County's year one net job losses ranged from 167 (20-year storm) – 421 (1,000-year storm). Unlike all other counties in this analysis, Washington County is the only area that is projected to have jobs loss across all years of interest following a 20-year storm. All other probabilistic storm categories projected between 8 – 74 jobs increase by year 2023.

The impact on GDP following a hurricane in Washington County was arguably the most conservative, compared to all other counties. Losses in year one ranged from $9 million to $23 million. By year two, only the 20-year storm had a projected loss ($1 million). Moreover, it was projected that the GDP for years three through five would go unchanged. That is, there would be no net GDP gain or loss for both the 20 and 100-year storms. A 500-year storm was projected to maintain a positive $1 million GDP from years three to five. However, a 1,000-year storm would maintain a positive $3 million GDP from years three to five.

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	-1.92%	-2.88%	-4.81%	-5.77%
Residential (2019 $ Billions)	0.00	-0.02	-0.07	-0.14
Non-Residential (2019 $ Billions)	0.00	-0.01	-0.06	-0.07

Impact Results by Type of Storm in Washington County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-167	-8	-4	-2	-1
100 yr	-241	0	6	8	8
500 yr	-372	32	43	45	40
1,000 yr	-421	73	88	86	74
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-9	-1	0	0	0
100 yr	-13	0	0	0	0
500 yr	-20	0	1	1	1
1,000 yr	-23	2	3	3	3

Table 8. Economic Impact Results for Washington County

HOLMES

Table 9 provides the probabilistic outcomes for the final county without a deterministic scenario. Year one jobs lost ranged between 101 – 256. The only storm that was forecasted to not have a net gain in jobs for Holmes County was the 20-year hurricane. Indeed, it was projected that there would be a net jobs loss of 0 by 2023. All other storms were projected to have net job gains between 7–50 by the fifth year following a hurricane.

Holmes County's probabilistic projections for GDP impact were the least substantial during year one, with projected losses between $5 million and $12 million. By year two, there was no projected GDP impact for both a 20-year and 100-year hurricane. By 2022, the GDP impact was projected to be stable into the fifth year, with impacts ranging from 0 - $4 million.

Impact Assumptions				
Inputs (2019 Impacts)	**20 yr**	**100 yr**	**500 yr**	**1,000 yr**
Output - Lost Sales (Percent)	-1.92%	-2.88%	-4.81%	-5.77%
Residential (2019 $ Billions)	0.00	-0.02	-0.05	-0.08
Non-Residential (2019 $ Billions)	0.00	-0.01	-0.04	-0.07

Impact Results by Type of Storm in Holmes County					
Impact (Jobs)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-101	-6	-3	-1	0
100 yr	-145	1	5	7	7
500 yr	-223	22	32	34	31
1,000 yr	-256	41	54	56	50
Impact (GDP $2019 Millions)	**2019**	**2020**	**2021**	**2022**	**2023**
20 yr	-5	0	0	0	0
100 yr	-7	0	0	1	1
500 yr	-11	2	3	3	3
1,000 yr	-12	3	4	4	4

Table 9. Economic Impact Results for Holmes County

Deterministic Scenarios

HAZUS Scenario	SSHWS	# of Weeks Business Closed	Annual % of Lost Sales
Deterministic	High Category 3	2	3.85%

Table 70. Deterministic Impact Assumptions for the Economic Impact Modeling

The following provides clarification for deterministic impact results for Escambia, Santa Rosa, Okaloosa, Walton, and Bay counties. Counties of interest excluded from the deterministic scenarios were those that are not coastal counties, since the deterministic scenarios include storm surges. Deterministic scenarios utilized assumptions for a single impact scenario for a SSHWS High Category 3 hurricane (i.e., Category 3 hurricane with sustained winds of 129 mph), including a 2-week business closure, and a 3.85% annual sales loss across all counties with deterministic scenarios. All dollar amounts are given in 2019 dollars.

Compared to all other counties with deterministic scenarios, Escambia County is projected to have the greatest losses for construction, jobs, and GDP in year one of a High Category 3 hurricane. It was forecasted that Escambia would suffer $4.10 billion loss in residential construction and a loss of $1.44 billion in non-residential construction (2019 dollars). In addition, Escambia's year one job losses were projected to be 4,563. Years two through five projected net gains in jobs, with the greatest net gains occurring in year three (7,139). The GDP impact for year one was projected to have a net loss of $368 million. Just as with jobs projections, years two through five were anticipated to have a positive impact on GDP, with the greatest net gains occurring in year three ($544 million). By year five, the net gains in GDP are projected to reach $424 million, resulting in a $100 million decline between years two and five. Compared to all other counties, Escambia is projected to have the greatest losses in GDP between years four and five ($80 million decline).

Across all measures, Santa Rosa County is forecasted to have the second smallest impact from a High Category 3 hurricane. Anticipated construction losses were totaled $2.02 billion in residential construction and $0.40 billion in non-residential losses. Although year one job losses would total 1,030, years two though five would include net gain in jobs, with years two and three nearly tied for the largest number of net job gains for Santa Rosa County (2,456 and 2,466, respectively). Regarding GDP, year one had a loss of $61 million and positive GDP growth in years two through five. Like jobs growth, GDP in years two and three were very similar ($193 million and $196 million, respectively).

Compared to all other deterministic scenarios, Okaloosa County is projected to have the second largest impact for construction losses. Residential and non-residential construction losses included $2.96 billion in residential and $0.81 billion in non-residential. Following the first year's 2,736 lost jobs, a net gain in jobs ranged from 3,133 (year five) to 4,117 (year three). Gross domestic product loss in year one was $214 million, followed by positive GDP growth. Year

three had the largest GDP ($374 million) for the county. Compared to all other counties, however, Okaloosa was projected to incur the second largest drop in GDP between years four and five ($290 million, $55 million difference).

To perform Walton County's deterministic scenario, it was modeled in Hazus with both Okaloosa and Walton counties combined, due to an inability for the Hazus model to populate Walton County's storm surge impacts as a sole county deterministic scenario. After the model was run with both counties included, Okaloosa's deterministic data were removed.

County	Input	Deterministic
Bay	Non-Residential	-0.592
Escambia	Non-Residential	-1.337
Okaloosa	Non-Residential	-0.750
Santa Rosa	Non-Residential	-0.375
Walton	Non-Residential	-0.635
Bay	Residential	-2.073
Escambia	Residential	-3.809
Okaloosa	Residential	-2.747
Santa Rosa	Residential	-1.881
Walton	Residential	-2.496

Table 11. Deterministic Impact Assumptions from Hazus Results in $ Billions

Compared to all other counties with deterministic scenarios, Walton was projected to have the smallest numbers in economic impact, across all measures. Walton County's deterministic impact analysis included losses of $1 billion in residential and $0.43 billion in non-residential construction. Following a deficit of 1,133 jobs in year one, net job gains ranged from 955 (year five) and 1,306 (year two). Consistent with jobs, GDP was projected to decline in year one (-$107 million), followed by GDP growth that ranged from $96 million (year five) and $129 million (year two).

Preceded by Escambia and Okaloosa counties, Bay is anticipated to have the third greatest construction dollars loss within the deterministic scenario - $2.23 billion in residential and $0.64 billion in non-residential construction dollars lost. The deterministic scenario projected job losses totaling 3,157 in the first year of High Category 3 hurricane, with a net gain in jobs of 3,112 by year five. Gross domestic product loss within year one totaled $285 million. Although year two would see a growth in GDP of $308 million, followed by $316 million in year three, considerable declines are projected for years four and five. Indeed, GDP is anticipated to fall from $316 million in year three to $293 million in year four ($23 million decline), with year five projected GDP at $245 million ($62 million decline between years four and five).

County	Impact Assumptions		2019	2020	2021	2022	2023
Escambia	3.85% lost sales	Jobs	**-4,563**	**6,910**	**7,139**	**6,552**	**5,485**
	-$4.10 B in residential and -$1.44 B in non-residential	GDP $ 2019 Mil	-368	524	544	504	424
Santa Rosa	3.85% lost sales	Jobs	**-1,030**	**2,456**	**2,466**	**2,242**	**1,880**
	-$2.02 B in residential and -$0.40 B in non-residential	GDP $ 2019 Mil	-61	193	196	180	151
Okaloosa	3.85% lost sales	Jobs	**-2,736**	**3,984**	**4,117**	**3,758**	**3,133**
	-$2.96 B in residential and -$0.81 B in non-residential	GDP $ 2019 Mil	-214	361	374	345	290
Walton	3.85% lost sales	Jobs	-1,133	1,306	1,298	1,166	955
	-1.00 B in residential and -0.43 B in non-residential	GDP $ 2019 Mil	-107	129	128	116	96
Bay	3.85% lost sales	Jobs	**-3,157**	**3,945**	**4,068**	**3,740**	**3,112**
	-$2.23 B in residential and -$0.64 B in non-residential	GDP $ 2019 Mil	-285	308	316	293	245

Table 11. Deterministic Impact Results

Appendix C

East Central Florida Regional Planning Council:

Economic Impact of the COVID-19 Pandemic

Economic Impact of the COVID-19 Pandemic

PREPARED FOR THE EMERALD COAST REGIONAL PLANNING COUNCIL

BY THE

EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL

September 23, 2020

ABOUT THE EMERALD COAST FLORIDA REGIONAL PLANNING COUNCIL

The Emerald Coast Regional Planning Council (ERC) is one of ten regional planning councils in the state of Florida. ECRC supports northwest Florida by planning for and coordinating intergovernmental solutions to growth-related problems, providing technical assistance to local governments, and meeting the needs of the municipalities in our seven-county region: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Washington, and Holmes. The mission of Emerald Coast Regional Council is to preserve and enhance the quality of life in northwest Florida by providing professional technical assistance, planning, coordinating, and advisory services to local governments, state and federal agencies, and the public.

ABOUT THE EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL

The East Central Florida Regional Planning Council (ECFRPC) was established in 1962 as an area-wide association of local governments. It is one of Florida's ten regional planning councils and serves governments and organizations located within Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter and Volusia counties. Council staff provides technical assistance in the areas of land use and environmental planning, emergency preparedness, geographic information systems (GIS), health, housing, urban design, transportation, and economic and fiscal analysis among others. Because of the ECFRPC, member governments have received more than $10.6 million in federal grants since 2011. This represents a return on investment of $2.53 for every dollar paid in assessments

Since 2003, The ECFRPC has been using the Regional Economic Models, Inc. Policy Insight (REMI PI+) model to calculate the economic effects of a variety of policies and investments. The REMI model builds on the strengths of four major modeling approaches: Input-Output, General Equilibrium, Econometric, and Economic Geography. More detailed information about the model can be found at www.remi.com.

For any questions about this economic impact simulation, please contact Luis Nieves-Ruiz, AICP at 407-245-0300 x 308 or via e-mail at luis@ecfrpc.org.

The Economic Impact of the COVID-19 Pandemic

The COVID-19 pandemic has led to a global economic contraction in 2020 mainly because of the lockdowns imposed by local governments to avoid the spread of the virus. On April 1, Governor Ron DeSantis issued a 30-day stay at home order that also closed most of the state's non-essential businesses including stores, gyms, and other personal service establishments. Essential businesses such as restaurants were allowed to work on a limited capacity which prohibited sit down service. At this time though, most businesses had already closed their doors because of social distancing guidelines proposed by the federal government in early March. The Plan for Florida's Recovery delineated that the state's businesses will reopen in four phases based on the spread of the COVID-19 virus. The first phase (Phase 0) permitted only essential services and activities. Phase 1 allowed restaurants, fitness centers, personal services businesses, and retail establishments to operate at a 50 percent capacity. Phase 2 increases building capacity to 75 percent for all these same business categories. These establishments will be allowed to open at full capacity in Phase 3.

The purpose of this simulation is to estimate how a decline in annual business sales could affect the economy of the Emerald Coast region. This economic impact scenario follows closely the guidelines suggested by the Plan for Florida's Recovery when mapping the potential economic losses. However, when available, the ECFRPC also used air passenger traffic and hotel occupancy data to estimate the monthly losses in the Air Transportation and Accommodation industries.

Model Inputs and Assumptions

The first step in the development of this scenario was to identify the industry sectors that would be most impacted by the current economic lockdown. The ECFRPC focused its research on six industries: Retail Trade; Transportation and Warehousing; Information; Arts, Entertainment, and Recreation,; Accommodations and Restaurants, and Other Personal Services. The ECFRPC used information from the Infogroup business database to determine the proportion of essential and nonessential retail businesses within the Emerald Coast region. Essential businesses such as supermarkets and gas stations were allowed to continue their operations fully or in a limited capacity during the March-April business shutdown. All other retail establishments, which comprise about 60 percent of retail operations, shut down their operations during this time. The ECFRPC eliminated all of the April sales and reduced the annual sales 30 percent over the rest of the year for this nonessential businesses.

The ECFRPC also used Infogroup data to isolate Airport sales from the rest of the Transportation and Warehousing sector. Staff then examined the monthly traffic reports for the region's three airports to look at the percentage decline of passengers. The ECFRPC treated this loss in capacity as loss in business sales.

For the Information sector, the ECFRPC eliminated all sales that could be attributed to movie theaters. While the governor allowed these businesses to open in Phase 2, the movie industry has continued to struggle with most sites not opening until September or later. Most businesses within the Arts, Entertainment, and Recreation have suffered a similar fate with the closure of concert and other live event venues. Only golf courses, marinas, and nature parks have remained open during the pandemic. Because of this, the ECFRPC divided these

Industry Sectors Most Impacted by COVID-19 Pandemic		
Economic Industry Sector	**Definition**	**Examples**
Retail Trade	Retail merchandise and render services incidental to the sale of merchandise	**Supermarkets, Gas Stations, Clothing Stores**
Transportation and Warehousing	Provide transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and supporting activities	**Air Transportation, Taxis, Warehouses**
Information	Produce, distribute, transmit or distribute information and cultural products	**Movie theaters, Libraries**
Arts, Entertainment, and Recreation	Operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons	**Live performance promoters and venues, museums, gyms, golf courses, marinas**
Accommodations and Restaurants	Provide customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption	**Hotels, Restaurants**
Other Personal Services	Provide a variety of services to the public	**Beauty Salons, Barber Shops, Nail Salons, Non-Profit Organizations**

Source: https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=81&search=2017%20NAICS%20Search

establishments into two groups, and reduced the annual sales by 31 percent.

The ECFRPC used Infogroup data to separate Accommodation and Restaurant establishments. The ECFRPC then used the reductions of Tourism Development Tax collections to estimate the decline in sales for hotels and other lodging establishments. This information was available for most of the large counties, except Okaloosa. Overall, the ECFRPC reduced sales within this industry by 18 percent for the whole year. For Restaurants, the ECFRPC used the state's reopening plan to estimate the reduction in sales.

The ECFRPC also divided Personal Service establishments based on whether they were considered as essential or nonessential businesses. All Personal Care Service businesses such as nail salons and barber shops were closed in April and have remained working under limited capacity since then. On the other hand, businesses that provide repair and maintenance services have continued their operations without any interruption.

Finally, the ECFRPC only made minor adjustments to the 13 remaining industry sectors. The assumption is that businesses within these sectors have being able to continue their operations without any major disruptions. Overall, the ECFRPC reduced the total annual sales for these sectors by only three percent..

Once the economic assumptions were made, the ECFRPC divided the REMI forecast sales by 12 to obtain the monthly business sales for each of the industry sectors located within the corridor. These numbers were not modified for seasonal variations. Based on the previously explained assumptions, the ECFRPC reduced the annual business sales by seven percent or almost $4 billion dollars. The ECFRPC believes that this is a very conservative numbers as the state of Florida in one of the most affected in the country.

ECFRPC Adjustments to the REMI Forecast by Industry		
Industries	Estimated Sales Losses	Percent Change
Accomodation and Restaurants	($1,224,630,701)	-31
Retail Trade	($1,067,254,688)	-18
Real Estate and Rental and Leasing	($269,865,399)	-3
Other Personal Services	($244,557,708)	-13
Health Care and Social Assistance	($153,374,788)	-3
Information	($147,838,188)	-6
Manufacturing	($132,760,544)	-3
Arts, Entertainment, and Recreation	($128,738,655)	-26
Professional, Scientific, and Technical Services	($125,288,709)	-3
Construction	($100,261,029)	-3
Transportation and Warehousing	($98,203,968)	-8
Finance and Insurance	($89,914,998)	-3
Wholesale Trade	($77,541,606)	-3
Administrative, Support, Waste Management, and Remediation Services	($72,989,472)	-3
Utilities	($25,349,136)	-3
Management of Companies and Enterprises	($11,818,248)	-3
Educational Services; Private	($8,829,841)	-3
Forestry, Fishing, and Hunting	($4,675,678)	-3
Mining	($3,435,592)	-3
TOTAL	($3,987,328,949)	-7

Source: REMI PI+ Florida Counties and Border States v2.4.1 Forecast, ECFRPC Calculations

Economic Impact Scenario Results

The ECFRPC uses four indicators to measure the economic impact: total employment, output/sales, personal income, and gross domestic product. All these losses are based on the REMI PI+ forecast. According to the REMI model, the Emerald Coast region could expect to lose close to 72,000 positions in 2020 because of the COVID-19 pandemic. This represents about 14 percent less of what was forecasted by REMI during for 2020. The region is also expected to lose almost $8.6 billion in output and just over $2.8 billion in personal income. Finally, the region's annual Gross Domestic Product will be reduced by 12 percent or just over $5 billion. The most affected counties will be Escambia, Okaloosa, and Bay. Together these three counties account for 75 percent of all the economic losses. These results should not only be considered as a loss of current economic capacity, but they also represent a potential growth that will never be reached because of the COVID-19 pandemic closures.

Total employment includes all full-time, part-time, and temporary positions. Not surprisingly, the most affected industry sectors that would lose the most jobs are Accommodation and Food Services and Retail Trade. These are the industries that have been most directly affected by the pandemic and the economic shutdown. When combined, these industry sectors account for 44 percent of the employment losses. These are followed by the Construction, Other Services, and Administrative and Support and Waste Management and Remediation Services (ASWR) industry sectors. Most of the positions lost within the Construction and ASWR sectors were indirect and induced positons. This means that these job losses could be attributed to less spending on suppliers and consumer goods and services.

Summary of Economic Losses Spurred by COVID-19 Pandemic		
Economic Indicators	Total	Pct. Change
Total Employment	(71,899)	-14%
Output	($8,558,000,000)	-12%
Personal Income	($2,844,000,000)	-6%
Gross Domestic Product	($5,074,000,000)	-12%

Source: REMI PI+ Florida Counties and Border States v2.4.1

Summary of Economic Losses Spurred by COVID-19 Pandemic by County				
County	Total Employment	Output/Sales	Personal Income	Gross Domestic Product
Bay	(14,931)	($1,640,000,000)	($570,000,000)	($967,000,000)
Escambia	(24,148)	($3,131,000,000)	($811,000,000)	($1,847,000,000)
Holmes	(487)	($41,000,000)	($19,000,000)	($25,000,000)
Okaloosa	(15,027)	($1,836,000,000)	($432,000,000)	($1,096,000,000)
Santa Rosa	(9,987)	($1,111,000,000)	($641,000,000)	($664,000,000)
Walton	(6,351)	($714,000,000)	($336,000,000)	($424,000,000)
Washington	(969)	($85,000,000)	($35,000,000)	($51,000,000)

Source: REMI PI+ Florida Counties and Border States v2.4.1

Job Losses by Type for the Most Affected Industries within Emerald Coast

Source: Source: REMI PI+ Florida Counties and Border States v2.4.1

Often referred to as total sales volume, output measures the gross level of business revenue which includes both the costs of labor and materials (intermediate inputs) and value added activities (compensation and profits). Since business output is the broadest measure of economic activity, it tends to generate the largest numbers. According to REMI, the industry sectors that are expected to lose the most sales are Information ($1.6B), Retail Trade ($1.3B), Accommodation and Food Services ($1.2B), Real Estate and Rental and Leasing ($1B) and Construction ($682M). In the case of Retail Trade and Accommodations and Food Services, the ECFRPC directly reduced the annual sales for these industries based on the reopening phase and current economic conditions. The output loss for the other three industry sectors is mostly the result of indirect and induced effects.

Personal income refers to total earnings from employee compensation, wage supplements, rents, transfer payments, and other business ventures. Again, the Accommodation and Food Services ($422M), Retail Trade ($403M), Construction ($203M), and Information ($174M) industry sectors showed the steepest losses. The Professional, Scientific, and Technical Services industry sector ($170M) will also be severely affected.

Finally, another important economic indicator is gross regional product. Sometimes referred to as gross domestic product (GDP), this figure represents the market value of all goods and services produced by labor and property, regardless of nationality. The Emerald Coast Region's GDP will be reduced by $5 billion because of the COVID-19 pandemic. The most affected counties will be Escambia (S1.8B), Okaloosa (almost $1.1B), and Bay ($967M).

Industries	Output by Industry	Pct. Change
Information	($1,635,000,000)	-74%
Retail trade	($1,316,000,000)	-24%
Accommodation and Food Services	($1,181,000,000)	-32%
Real Estate and Rental and Leasing	($1,006,000,000)	-10%
Construction	($682,000,000)	-19%

Source: REMI PI+ Florida Counties and Border States v2.4.1

Industries	Loss of Wages Salaries
Accommodation and Food services	-$422,000,000
Retail trade	-$403,000,000
Construction	-$203,000,000
Information	-$174,000,000
Professional, Scientific, and Technical Services	-$170,000,000

Source: REMI PI+ Florida Counties and Border States v2.4.1

Conclusion

The COVID-19 pandemic has and will continue to affect regional economies because of the business lockdowns imposed by local governments to deter the spread of the virus. This simulation scenario attempted to model the economic impact of the virus on the Emerald Coast region using the most currently available air passenger traffic and hotel occupancy data. However, most of this information was only available up to the month of July. Therefore, the ECFRPC had to make some conservative assumptions regarding how these industries would recover throughout the year. In addition to this hard data, the ECFRPC used Florida's Reopening Plan to assume the annual sales losses for other economic sectors such as retail, business services, and personal services. These industries could recuperate much faster depending on how well the state controls the spread of the virus or if there is a vaccine this year. The ECFRPC recommends revisiting this project next year when there is more actualized data that could be used to improve the certainty of this economic simulation.

Appendix D

County Profiles

Bay County

Florida's 28th most populous county

with 0.9% of Florida's population

Population

Census Population	Bay County	Florida
1980 Census	97,740	9,746,961
1990 Census	126,994	12,938,071
% change 1980-90	29.9%	32.7%
2000 Census	148,217	15,982,824
% change 1990-00	16.7%	23.5%
2010 Census	168,852	18,801,332
% change 2000-10	13.9%	17.6%
Age		
% Under 18 years of age	22.0%	21.3%
% 65 years of age and over	14.5%	17.3%
Race & Ethnicity		
% White alone	82.2%	75.0%
% Black or African American alone	10.8%	16.0%
% Hispanic or Latino (of any race)	4.8%	22.5%
Estimates and Projections		
2018 Estimate	181,199	20,840,568
% change 2010-18	7.3%	10.8%
2020 Projection based on 2018 estimate	178,486	21,517,610
% change 2018-20	-1.5%	3.2%
2025 Projection based on 2018 estimate	189,645	23,050,820
% change 2020-25	6.3%	7.1%
2017 Median Age	39.8	41.6

Density

Persons per square mile		
2000	194.1	296.4
2010	222.6	350.6
2018	238.9	392.7

Households and Family Households

Households	Bay County	Florida
Total households, 2000 Census	59,597	6,338,075
Family households, 2000 Census	40,480	4,210,760
% with own children under 18	45.0%	42.3%
Total households, 2010 Census	68,438	7,420,802
Family households, 2010 Census	44,451	4,835,475
% with own children under 18	40.8%	40.0%
Average Household Size, 2010 Census	2.41	2.48
Average Family Size, 2010 Census	2.92	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Bay County	Florida
Housing units, 2000 Census	78,435	7,302,947
Occupied	59,597	6,337,929
Owner-occupied	40,887	4,441,799
Renter-occupied	18,710	1,896,130
Vacant	18,838	965,018
Housing units, 2010 Census	99,650	8,989,580
Occupied	68,438	7,420,802
Owner-occupied	43,207	4,998,979
Renter-occupied	25,231	2,421,823
Vacant	31,212	1,568,778
Units Permitted		
1990	725	126,384
2000	1,452	155,269
2010	309	38,679
2011	343	42,360
2012	440	64,810
2013	592	86,752
2014	601	84,075
2015	884	109,924
2016	898	116,240
2017	1,654	122,719

Population Characteristics

Language spoken at home other than English	Bay County	Florida
Persons aged 5 and over	6.9%	28.7%
Place of birth		
Foreign born	5.7%	20.2%
Veteran status		
Civilian population 18 and over	15.9%	9.0%

Residence 1 Year Ago		
Persons aged 1 and over		
Same house	79.8%	84.1%
Different house in the U.S.	19.6%	14.8%
Same county in Florida	12.8%	8.9%
Different county in Florida	2.4%	3.1%
Different county in another state	4.5%	2.8%
Abroad	0.6%	1.1%

Employment by Industry

Number of Establishments		
2017	**Bay County**	**Florida**
All industries	5,576	679,976
Natural Resource & Mining	34	5,274
Construction	683	68,218
Manufacturing	147	20,585
Trade, Transportation and Utilities	1,203	139,467
Information	49	10,989
Financial Activities	585	72,393
Professional & Business Services	963	159,259
Education & Health Services	635	72,778
Leisure and Hospitality	698	55,767
Other Services	414	55,357
Government	130	6,037

Percent of All Establishments		
2017	**Bay County**	**Florida**
All industries	5,576	679,976
Natural Resource & Mining	0.6%	0.8%
Construction	12.2%	10.0%
Manufacturing	2.6%	3.0%
Trade, Transportation and Utilities	21.6%	20.5%
Information	0.9%	1.6%
Financial Activities	10.5%	10.6%
Professional & Business Services	17.3%	23.4%
Education & Health Services	11.4%	10.7%
Leisure and Hospitality	12.5%	8.2%
Other Services	7.4%	8.1%
Government	2.3%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Bay County	Florida
All industries	77,414	8,495,250
Natural Resource & Mining	0.3%	0.9%
Construction	5.9%	5.9%
Manufacturing	4.1%	4.3%
Trade, Transportation and Utilities	20.0%	20.5%
Information	0.9%	1.6%
Financial Activities	5.3%	6.6%
Professional & Business Services	12.7%	15.6%
Education & Health Services	13.9%	14.8%
Leisure and Hospitality	17.6%	14.1%
Other Services	2.7%	3.2%
Government	16.5%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Bay County	Florida
All industries	$39,321	$48,452
Natural Resource & Mining	$40,137	$32,773
Construction	$38,988	$49,255
Manufacturing	$58,193	$59,389
Trade, Transportation and Utilities	$34,674	$43,218
Information	$39,548	$80,303
Financial Activities	$47,137	$72,712
Professional & Business Services	$45,341	$58,701
Education & Health Services	$46,297	$49,450
Leisure and Hospitality	$20,752	$24,901
Other Services	$30,127	$35,320
Government	$48,613	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Bay County	Florida
1990	65.0%	64.3%
2000	63.9%	63.7%
2010	65.3%	62.2%
2018	62.7%	61.6%

Unemployment Rate	Bay County	Florida
1990	9.1%	6.1%
2000	4.6%	3.7%
2010	10.5%	11.1%
2018	4.0%	3.6%

Income and Financial Health

Personal Income ($000s)	Bay County	Florida
1990	$2,117,283	$260,093,568
2000	$3,691,759	$477,315,998
% change 1990-2000	74.4%	83.5%
2010	$6,224,875	$725,801,140
% change 2000-10	68.6%	52.1%
2011	$6,402,397	$766,185,838
% change 2010-11	2.9%	5.6%
2012	$6,429,988	$791,918,553
% change 2011-12	0.4%	3.4%
2013	$6,521,655	$794,796,980
% change 2012-13	1.4%	0.4%
2014	$6,929,572	$858,498,660
% change 2013-14	6.3%	8.0%
2015	$7,342,644	$919,226,924
% change 2014-15	6.0%	7.1%
2016	$7,562,586	$953,260,614
% change 2015-16	3.0%	3.7%
2017	$7,796,975	$1,000,624,065
% change 2016-17	3.1%	5.0%

Per Capita Personal Income	Bay County	Florida
1990	$16,629	$19,956
2000	$24,878	$29,744
% change 1990-00	49.6%	49.0%
2010	$36,789	$38,511
% change 2000-10	47.9%	29.5%
2011	$37,768	$40,120
% change 2010-11	2.7%	4.2%
2012	$37,437	$40,944
% change 2011-12	-0.9%	2.1%
2013	$37,346	$40,582
% change 2012-13	-0.2%	-0.9%
2014	$38,882	$43,146
% change 2013-14	4.1%	6.3%
2015	$40,526	$45,352
% change 2014-15	4.2%	5.1%
2016	$41,327	$46,148
% change 2015-16	2.0%	1.8%
2017	$42,476	$47,684
% change 2016-17	2.8%	3.3%

Earnings by Place of Work ($000s)	Bay County	Florida
1990	$1,467,305	$161,317,329
2000	$2,509,236	$313,054,047
% change 1990-2000	71.0%	94.1%
2010	$4,104,614	$438,991,235
% change 2000-10	63.6%	40.2%
2011	$4,079,017	$450,502,115
% change 2010-11	-0.6%	2.6%
2012	$4,130,940	$468,412,894
% change 2011-12	1.3%	4.0%
2013	$4,229,494	$482,900,406
% change 2012-13	2.4%	3.1%
2014	$4,487,884	$512,331,048
% change 2013-14	6.1%	6.1%
2015	$4,730,122	$545,122,402
% change 2014-15	11.8%	12.9%
2016	$4,868,275	$567,712,460
% change 2015-16	8.5%	10.8%
2017	$4,968,070	$596,159,864
% change 2016-17	5.0%	9.4%

Median Income	Bay County	Florida
Median Household Income	$50,283	$50,883
Median Family Income	$61,750	$61,442

Percent in Poverty, 2017	Bay County	Florida
All ages in poverty	14.9%	14.1%
Under age 18 in poverty	21.6%	20.6%
Ages 5-17 in families in poverty	20.8%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Bay County	Florida
12-Month Period Ending Dec. 31, 2017	1.33	1.99
12-Month Period Ending Dec. 31, 2018	1.20	2.02
State Rank	43	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Bay County School District	Florida
Total (state total includes special districts)	47	3,186
Elementary	23	1,898
Middle	8	580
Senior High	10	708
Combination	6	531

Educational attainment Persons aged 25 and older	Bay County	Florida
% HS graduate or higher	89.1%	87.6%
% bachelor's degree or higher	22.4%	28.5%

Quality of Life

Crime	Bay County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	4,283.6	2,989.5
Admissions to prison FY 2017-18	765	27,917
Admissions to prison per 100,000 population FY 2017-18	422.2	134.0

Workers Aged 16 and Over	Bay County	Florida
Place of Work in Florida		
Worked outside county of residence	4.3%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	22.8	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Bay County	Florida*
Total - All Revenue Account Codes		
($000s)	$241,091.2	$40,323,612.7
Per Capita $	$1,369.71	$2,097.46
% of Total	100.0%	100.0%
Taxes		
($000s)	$100,785.6	$12,835,034.6
Per Capita $	$572.59	$667.62
% of Total	41.8%	31.8%
Permits, Fee, and Special Assessments		
($000s)	$2,545.3	$1,732,457.6
Per Capita $	$14.46	$90.11
% of Total	1.1%	4.3%
Intergovernmental Revenues		
($000s)	$37,880.7	$4,079,466.6
Per Capita $	$215.21	$212.20
% of Total	15.7%	10.1%
Charges for Services		
($000s)	$85,595.2	$12,526,050.9
Per Capita $	$486.29	$651.55
% of Total	35.5%	31.1%
Judgments, Fines, and Forfeits		
($000s)	$1,325.1	$202,607.1
Per Capita $	$7.53	$10.54
% of Total	0.5%	0.5%
Miscellaneous Revenues		
($000s)	$8,764.4	$908,143.1
Per Capita $	$49.79	$47.24
% of Total	3.6%	2.3%
Other Sources		
($000s)	$4,194.8	$8,039,852.7
Per Capita $	$23.83	$418.20
% of Total	1.7%	19.9%

Expenditures 2015-16	Bay County	Florida*
Total - All Expenditure Account Codes		
($000s)	$250,862.17	$38,724,729.62
Per Capita $	$1,425.22	$2,014.29
% of Total	104.1%	96.0%
General Government Services**		
($000s)	$34,913.10	$7,520,342.77
Per Capita $	$198.35	$391.18
% of Total	14.5%	18.6%
Public Safety		
($000s)	$72,036.44	$9,077,106.65
Per Capita $	$409.26	$472.15
% of Total	29.9%	22.5%
Physical Environment		
($000s)	$50,215.39	$4,450,581.04
Per Capita $	$285.29	$231.50
% of Total	20.8%	11.0%
Transportation		
($000s)	$25,761.36	$4,573,528.57
Per Capita $	$146.36	$237.89
% of Total	10.7%	11.3%
Economic Environment		
($000s)	$44,537.38	$1,451,926.79
Per Capita $	$253.03	$75.52
% of Total	18.5%	3.6%
Human Services		
($000s)	$6,152.34	$3,212,191.93
Per Capita $	$34.95	$167.08
% of Total	2.6%	8.0%
Culture / Recreation		
($000s)	$5,445.73	$1,496,681.81
Per Capita $	$30.94	$77.85
% of Total	2.3%	3.7%
Other Uses and Non-Operating		
($000s)	$3,266.59	$6,041,997.10
Per Capita $	$18.56	$314.28
% of Total	1.4%	15.0%
Court-Related Expenditures		
($000s)	$8,533.85	$900,372.95
Per Capita $	$48.48	$46.83
% of Total	3.5%	2.2%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

State Infrastructure

Transportation	Bay County	Florida
State Highway		
Centerline Miles	215.1	12,106.8
Lane Miles	671.2	44,204.6
State Bridges		
Number	52	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	106	9,498
Square Footage	545,051	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	120	38,326
Acreage	7,219.0	3,140,422.9
Non-Conservation Lands		
Parcels	174	5,880
Acreage	79.6	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Bay County	
	County-Wide	Not County-Wide*
County	4.4362	0.0899
School	6.1220	
Municipal		1.1395
Special Districts	0.0338	0.8234

*MSTU included in Not County-Wide "County" category

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May 2019

Escambia County

Florida's 20th most populous county

with 1.5% of Florida's population

Population

Census Population	Escambia County	Florida
1980 Census	233,794	9,746,961
1990 Census	262,798	12,938,071
% change 1980-90	12.4%	32.7%
2000 Census	294,410	15,982,824
% change 1990-00	12.0%	23.5%
2010 Census	297,619	18,801,332
% change 2000-10	1.1%	17.6%
Age		
% Under 18 years of age	21.6%	21.3%
% 65 years of age and over	14.4%	17.3%
Race & Ethnicity		
% White alone	68.9%	75.0%
% Black or African American alone	22.9%	16.0%
% Hispanic or Latino (of any race)	4.7%	22.5%
Estimates and Projections		
2018 Estimate	318,560	20,840,568
% change 2010-18	7.0%	10.8%
2020 Projection based on 2018 estimate	324,438	21,517,610
% change 2018-20	1.8%	3.2%
2025 Projection based on 2018 estimate	337,325	23,050,820
% change 2020-25	4.0%	7.1%
2017 Median Age	38.0	41.6

Density

Persons per square mile		
2000	444.5	296.4
2010	453.4	350.6
2018	484.9	392.7

Households and Family Households

Households	Escambia County	Florida
Total households, 2000 Census	111,049	6,338,075
Family households, 2000 Census	74,163	4,210,760
% with own children under 18	44.7%	42.3%
Total households, 2010 Census	116,238	7,420,802
Family households, 2010 Census	74,040	4,835,475
% with own children under 18	40.0%	40.0%
Average Household Size, 2010 Census	2.41	2.48
Average Family Size, 2010 Census	2.96	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Escambia County	Florida
Housing units, 2000 Census	124,647	7,302,947
Occupied	111,049	6,337,929
Owner-occupied	74,687	4,441,799
Renter-occupied	36,362	1,896,130
Vacant	13,598	965,018
Housing units, 2010 Census	136,703	8,989,580
Occupied	116,238	7,420,802
Owner-occupied	75,418	4,998,979
Renter-occupied	40,820	2,421,823
Vacant	20,465	1,568,778
Units Permitted		
1990	1,093	126,384
2000	1,455	155,269
2010	973	38,679
2011	638	42,360
2012	655	64,810
2013	830	86,752
2014	698	84,075
2015	1,392	109,924
2016	1,456	116,240
2017	1,073	122,719

Population Characteristics

Language spoken at home other than English	Escambia County	Florida
Persons aged 5 and over	7.0%	28.7%
Place of birth		
Foreign born	4.8%	20.2%
Veteran status		
Civilian population 18 and over	14.3%	9.0%

Residence 1 Year Ago		
Persons aged 1 and over		
Same house	82.0%	84.1%
Different house in the U.S.	17.6%	14.8%
Same county in Florida	9.0%	8.9%
Different county in Florida	2.7%	3.1%
Different county in another state	5.9%	2.8%
Abroad	0.5%	1.1%

Employment by Industry

Number of Establishments		
2017	**Escambia County**	**Florida**
All industries	8,099	679,976
Natural Resource & Mining	33	5,274
Construction	947	68,218
Manufacturing	229	20,585
Trade, Transportation and Utilities	1,823	139,467
Information	96	10,989
Financial Activities	777	72,393
Professional & Business Services	1,559	159,259
Education & Health Services	950	72,778
Leisure and Hospitality	812	55,767
Other Services	678	55,357
Government	137	6,037

Percent of All Establishments		
2017	**Escambia County**	**Florida**
All industries	8,099	679,976
Natural Resource & Mining	0.4%	0.8%
Construction	11.7%	10.0%
Manufacturing	2.8%	3.0%
Trade, Transportation and Utilities	22.5%	20.5%
Information	1.2%	1.6%
Financial Activities	9.6%	10.6%
Professional & Business Services	19.2%	23.4%
Education & Health Services	11.7%	10.7%
Leisure and Hospitality	10.0%	8.2%
Other Services	8.4%	8.1%
Government	1.7%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Escambia County	Florida
All industries	133,754	8,495,250
Natural Resource & Mining	0.2%	0.9%
Construction	6.1%	5.9%
Manufacturing	4.0%	4.3%
Trade, Transportation and Utilities	18.4%	20.5%
Information	1.0%	1.6%
Financial Activities	8.4%	6.6%
Professional & Business Services	12.2%	15.6%
Education & Health Services	18.1%	14.8%
Leisure and Hospitality	13.5%	14.1%
Other Services	2.9%	3.2%
Government	15.2%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Escambia County	Florida
All industries	$42,922	$48,452
Natural Resource & Mining	$39,468	$32,773
Construction	$41,631	$49,255
Manufacturing	$62,928	$59,389
Trade, Transportation and Utilities	$36,765	$43,218
Information	$72,364	$80,303
Financial Activities	$55,819	$72,712
Professional & Business Services	$48,888	$58,701
Education & Health Services	$50,326	$49,450
Leisure and Hospitality	$18,103	$24,901
Other Services	$31,175	$35,320
Government	$47,391	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Escambia County	Florida
1990	62.1%	64.3%
2000	58.8%	63.7%
2010	59.9%	62.2%
2018	58.5%	61.6%

Unemployment Rate	Escambia County	Florida
1990	5.8%	6.1%
2000	4.0%	3.7%
2010	10.1%	11.1%
2018	3.5%	3.6%

Income and Financial Health

Personal Income ($000s)	Escambia County	Florida
1990	$4,428,343	$260,093,568
2000	$7,214,346	$477,315,998
% change 1990-2000	62.9%	83.5%
2010	$10,255,412	$725,801,140
% change 2000-10	42.2%	52.1%
2011	$10,735,004	$766,185,838
% change 2010-11	4.7%	5.6%
2012	$11,020,858	$791,918,553
% change 2011-12	2.7%	3.4%
2013	$11,018,592	$794,796,980
% change 2012-13	0.0%	0.4%
2014	$11,526,767	$858,498,660
% change 2013-14	4.6%	8.0%
2015	$12,141,597	$919,226,924
% change 2014-15	5.3%	7.1%
2016	$12,390,204	$953,260,614
% change 2015-16	2.0%	3.7%
2017	$12,808,448	$1,000,624,065
% change 2016-17	3.4%	5.0%

Per Capita Personal Income	Escambia County	Florida
1990	$16,820	$19,956
2000	$24,478	$29,744
% change 1990-00	45.5%	49.0%
2010	$34,410	$38,511
% change 2000-10	40.6%	29.5%
2011	$35,859	$40,120
% change 2010-11	4.2%	4.2%
2012	$36,316	$40,944
% change 2011-12	1.3%	2.1%
2013	$35,918	$40,582
% change 2012-13	-1.1%	-0.9%
2014	$37,412	$43,146
% change 2013-14	4.2%	6.3%
2015	$39,226	$45,352
% change 2014-15	4.8%	5.1%
2016	$39,749	$46,148
% change 2015-16	1.3%	1.8%
2017	$40,855	$47,684
% change 2016-17	2.8%	3.3%

Earnings by Place of Work ($000s)	Escambia County	Florida
1990	$3,429,616	$161,317,329
2000	$5,587,816	$313,054,047
% change 1990-2000	62.9%	94.1%
2010	$7,689,695	$438,991,235
% change 2000-10	37.6%	40.2%
2011	$7,858,787	$450,502,115
% change 2010-11	2.2%	2.6%
2012	$8,060,165	$468,412,894
% change 2011-12	2.6%	4.0%
2013	$8,195,083	$482,900,406
% change 2012-13	1.7%	3.1%
2014	$8,416,128	$512,331,048
% change 2013-14	2.7%	6.1%
2015	$8,776,827	$545,122,402
% change 2014-15	7.1%	12.9%
2016	$9,024,358	$567,712,460
% change 2015-16	7.2%	10.8%
2017	$9,382,667	$596,159,864
% change 2016-17	6.9%	9.4%

Median Income	Escambia County	Florida
Median Household Income	$47,361	$50,883
Median Family Income	$59,598	$61,442

Percent in Poverty, 2017	Escambia County	Florida
All ages in poverty	16.4%	14.1%
Under age 18 in poverty	26.6%	20.6%
Ages 5-17 in families in poverty	26.0%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Escambia County	Florida
12-Month Period Ending Dec. 31, 2017	1.63	1.99
12-Month Period Ending Dec. 31, 2018	1.76	2.02
State Rank	18	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Escambia County School District	Florida
Total (state total includes special districts)	61	3,186
Elementary	38	1,898
Middle	9	580
Senior High	10	708
Combination	4	531

Educational attainment Persons aged 25 and older	Escambia County	Florida
% HS graduate or higher	90.6%	87.6%
% bachelor's degree or higher	26.0%	28.5%

Quality of Life

Crime	Escambia County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	3,804.0	2,989.5
Admissions to prison FY 2017-18	853	27,917
Admissions to prison per 100,000 population FY 2017-18	267.8	134.0

Workers Aged 16 and Over	Escambia County	Florida
Place of Work in Florida		
Worked outside county of residence	5.0%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	21.9	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Escambia County	Florida*
Total - All Revenue Account Codes		
($000s)	$426,772.5	$40,323,612.7
Per Capita $	$1,376.75	$2,097.46
% of Total	100.0%	100.0%
Taxes		
($000s)	$177,312.1	$12,835,034.6
Per Capita $	$572.00	$667.62
% of Total	41.5%	31.8%
Permits, Fee, and Special Assessments		
($000s)	$30,848.4	$1,732,457.6
Per Capita $	$99.52	$90.11
% of Total	7.2%	4.3%
Intergovernmental Revenues		
($000s)	$79,559.1	$4,079,466.6
Per Capita $	$256.65	$212.20
% of Total	18.6%	10.1%
Charges for Services		
($000s)	$103,160.4	$12,526,050.9
Per Capita $	$332.79	$651.55
% of Total	24.2%	31.1%
Judgments, Fines, and Forfeits		
($000s)	$2,528.8	$202,607.1
Per Capita $	$8.16	$10.54
% of Total	0.6%	0.5%
Miscellaneous Revenues		
($000s)	$9,849.6	$908,143.1
Per Capita $	$31.77	$47.24
% of Total	2.3%	2.3%
Other Sources		
($000s)	$23,514.0	$8,039,852.7
Per Capita $	$75.86	$418.20
% of Total	5.5%	19.9%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

Expenditures 2015-16	Escambia County	Florida*
Total - All Expenditure Account Codes		
($000s)	$420,289.26	$38,724,729.62
Per Capita $	$1,355.83	$2,014.29
% of Total	98.5%	96.0%
General Government Services**		
($000s)	$106,223.38	$7,520,342.77
Per Capita $	$342.67	$391.18
% of Total	24.9%	18.6%
Public Safety		
($000s)	$148,482.33	$9,077,106.65
Per Capita $	$479.00	$472.15
% of Total	34.8%	22.5%
Physical Environment		
($000s)	$13,879.21	$4,450,581.04
Per Capita $	$44.77	$231.50
% of Total	3.3%	11.0%
Transportation		
($000s)	$52,096.37	$4,573,528.57
Per Capita $	$168.06	$237.89
% of Total	12.2%	11.3%
Economic Environment		
($000s)	$35,057.88	$1,451,926.79
Per Capita $	$113.10	$75.52
% of Total	8.2%	3.6%
Human Services		
($000s)	$2,548.92	$3,212,191.93
Per Capita $	$8.22	$167.08
% of Total	0.6%	8.0%
Culture / Recreation		
($000s)	$14,962.64	$1,496,681.81
Per Capita $	$48.27	$77.85
% of Total	3.5%	3.7%
Other Uses and Non-Operating		
($000s)	$33,041.81	$6,041,997.10
Per Capita $	$106.59	$314.28
% of Total	7.7%	15.0%
Court-Related Expenditures		
($000s)	$13,996.73	$900,372.95
Per Capita $	$45.15	$46.83
% of Total	3.3%	2.2%

State Infrastructure

Transportation	Escambia County	Florida
State Highway		
Centerline Miles	259.1	12,106.8
Lane Miles	855.5	44,204.6
State Bridges		
Number	114	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	123	9,498
Square Footage	641,031	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	74	38,326
Acreage	5,707.4	3,140,422.9
Non-Conservation Lands		
Parcels	134	5,880
Acreage	2,172.7	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Escambia County	
	County-Wide	Not County-Wide*
County	6.6165	0.8430
School	6.3250	
Municipal		0.9625
Special Districts	0.0338	

*MSTU included in Not County-Wide "County" category

Prepared by:
Florida Legislature
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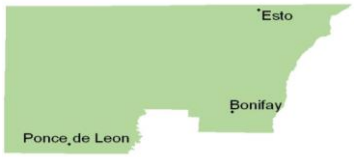
May 2019

Holmes County

Florida's 55th most populous county

with 0.1% of Florida's population



Population

Census Population	Holmes County	Florida
1980 Census	14,723	9,746,961
1990 Census	15,778	12,938,071
% change 1980-90	7.2%	32.7%
2000 Census	18,564	15,982,824
% change 1990-00	17.7%	23.5%
2010 Census	19,927	18,801,332
% change 2000-10	7.3%	17.6%
Age		
% Under 18 years of age	21.5%	21.3%
% 65 years of age and over	17.2%	17.3%
Race & Ethnicity		
% White alone	90.5%	75.0%
% Black or African American alone	5.8%	16.0%
% Hispanic or Latino (of any race)	2.2%	22.5%
Estimates and Projections		
2018 Estimate	20,133	20,840,568
% change 2010-18	1.0%	10.8%
2020 Projection based on 2018 estimate	20,330	21,517,610
% change 2018-20	1.0%	3.2%
2025 Projection based on 2018 estimate	20,636	23,050,820
% change 2020-25	1.5%	7.1%
2017 Median Age	43.0	41.6

Density

Persons per square mile		
2000	38.5	296.4
2010	41.6	350.6
2018	42.0	392.7

Households and Family Households

Households	Holmes County	Florida
Total households, 2000 Census	6,921	6,338,075
Family households, 2000 Census	4,893	4,210,760
% with own children under 18	43.7%	42.3%
Total households, 2010 Census	7,354	7,420,802
Family households, 2010 Census	5,102	4,835,475
% with own children under 18	38.3%	40.0%
Average Household Size, 2010 Census	2.47	2.48
Average Family Size, 2010 Census	2.96	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Holmes County	Florida
Housing units, 2000 Census	7,998	7,302,947
Occupied	6,921	6,337,929
Owner-occupied	5,639	4,441,799
Renter-occupied	1,282	1,896,130
Vacant	1,077	965,018
Housing units, 2010 Census	8,641	8,989,580
Occupied	7,354	7,420,802
Owner-occupied	5,710	4,998,979
Renter-occupied	1,644	2,421,823
Vacant	1,287	1,568,778
Units Permitted		
1990	65	126,384
2000	41	155,269
2010	16	38,679
2011	19	42,360
2012	20	64,810
2013	24	86,752
2014	31	84,075
2015	19	109,924
2016	18	116,240
2017	8	122,719

Population Characteristics

Language spoken at home other than English	Holmes County	Florida
Persons aged 5 and over	2.5%	28.7%
Place of birth		
Foreign born	1.9%	20.2%
Veteran status		
Civilian population 18 and over	10.8%	9.0%

Residence 1 Year Ago		
Persons aged 1 and over		
Same house	82.9%	84.1%
Different house in the U.S.	17.1%	14.8%
Same county in Florida	6.0%	8.9%
Different county in Florida	8.7%	3.1%
Different county in another state	2.4%	2.8%
Abroad	0.1%	1.1%

Employment by Industry

Number of Establishments 2017	Holmes County	Florida
All industries	333	679,976
Natural Resource & Mining	17	5,274
Construction	59	68,218
Manufacturing	10	20,585
Trade, Transportation and Utilities	81	139,467
Information	2	10,989
Financial Activities	22	72,393
Professional & Business Services	29	159,259
Education & Health Services	30	72,778
Leisure and Hospitality	23	55,767
Other Services	25	55,357
Government	35	6,037

Percent of All Establishments 2017	Holmes County	Florida
All industries	333	679,976
Natural Resource & Mining	5.1%	0.8%
Construction	17.7%	10.0%
Manufacturing	3.0%	3.0%
Trade, Transportation and Utilities	24.3%	20.5%
Information	0.6%	1.6%
Financial Activities	6.6%	10.6%
Professional & Business Services	8.7%	23.4%
Education & Health Services	9.0%	10.7%
Leisure and Hospitality	6.9%	8.2%
Other Services	7.5%	8.1%
Government	10.5%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Holmes County	Florida
All industries	3,270	8,495,250
Natural Resource & Mining	2.2%	0.9%
Construction	8.1%	5.9%
Manufacturing	2.4%	4.3%
Trade, Transportation and Utilities	14.8%	20.5%
Information	NA	1.6%
Financial Activities	3.5%	6.6%
Professional & Business Services	3.1%	15.6%
Education & Health Services	10.8%	14.8%
Leisure and Hospitality	8.9%	14.1%
Other Services	3.2%	3.2%
Government	42.2%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Holmes County	Florida
All industries	$31,061	$48,452
Natural Resource & Mining	$32,826	$32,773
Construction	$28,789	$49,255
Manufacturing	$39,973	$59,389
Trade, Transportation and Utilities	$25,341	$43,218
Information	NA	$80,303
Financial Activities	$29,270	$72,712
Professional & Business Services	$37,657	$58,701
Education & Health Services	$28,464	$49,450
Leisure and Hospitality	$13,775	$24,901
Other Services	$25,646	$35,320
Government	$36,800	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Holmes County	Florida
1990	57.2%	64.3%
2000	54.2%	63.7%
2010	46.0%	62.2%
2018	43.0%	61.6%

Unemployment Rate	Holmes County	Florida
1990	6.9%	6.1%
2000	4.8%	3.7%
2010	10.4%	11.1%
2018	4.0%	3.6%

Income and Financial Health

Personal Income ($000s)	Holmes County	Florida
1990	$181,879	$260,093,568
2000	$339,113	$477,315,998
% change 1990-2000	86.4%	83.5%
2010	$493,503	$725,801,140
% change 2000-10	45.5%	52.1%
2011	$510,947	$766,185,838
% change 2010-11	3.5%	5.6%
2012	$513,760	$791,918,553
% change 2011-12	0.6%	3.4%
2013	$504,812	$794,796,980
% change 2012-13	-1.7%	0.4%
2014	$515,632	$858,498,660
% change 2013-14	2.1%	8.0%
2015	$539,721	$919,226,924
% change 2014-15	4.7%	7.1%
2016	$545,100	$953,260,614
% change 2015-16	1.0%	3.7%
2017	$571,913	$1,000,624,065
% change 2016-17	4.9%	5.0%

Per Capita Personal Income	Holmes County	Florida
1990	$11,503	$19,956
2000	$18,278	$29,744
% change 1990-00	58.9%	49.0%
2010	$24,868	$38,511
% change 2000-10	36.1%	29.5%
2011	$25,755	$40,120
% change 2010-11	3.6%	4.2%
2012	$26,086	$40,944
% change 2011-12	1.3%	2.1%
2013	$25,758	$40,582
% change 2012-13	-1.3%	-0.9%
2014	$26,348	$43,146
% change 2013-14	2.3%	6.3%
2015	$27,988	$45,352
% change 2014-15	6.2%	5.1%
2016	$28,088	$46,148
% change 2015-16	0.4%	1.8%
2017	$29,242	$47,684
% change 2016-17	4.1%	3.3%

Earnings by Place of Work ($000s)	Holmes County	Florida
1990	$78,979	$161,317,329
2000	$136,052	$313,054,047
% change 1990-2000	72.3%	94.1%
2010	$173,779	$438,991,235
% change 2000-10	27.7%	40.2%
2011	$181,641	$450,502,115
% change 2010-11	4.5%	2.6%
2012	$184,288	$468,412,894
% change 2011-12	1.5%	4.0%
2013	$172,213	$482,900,406
% change 2012-13	-6.6%	3.1%
2014	$176,127	$512,331,048
% change 2013-14	2.3%	6.1%
2015	$181,743	$545,122,402
% change 2014-15	5.5%	12.9%
2016	$172,218	$567,712,460
% change 2015-16	-2.2%	10.8%
2017	$182,563	$596,159,864
% change 2016-17	0.5%	9.4%

Median Income	Holmes County	Florida
Median Household Income	$37,474	$50,883
Median Family Income	$48,609	$61,442

Percent in Poverty, 2017	Holmes County	Florida
All ages in poverty	21.2%	14.1%
Under age 18 in poverty	30.5%	20.6%
Ages 5-17 in families in poverty	28.3%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Holmes County	Florida
12-Month Period Ending Dec. 31, 2017	0.99	1.99
12-Month Period Ending Dec. 31, 2018	0.79	2.02
State Rank	56	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Holmes County School District	Florida
Total (state total includes special districts)	7	3,186
Elementary	1	1,898
Middle	0	580
Senior High	3	708
Combination	3	531

Educational attainment Persons aged 25 and older	Holmes County	Florida
% HS graduate or higher	76.1%	87.6%
% bachelor's degree or higher	11.5%	28.5%

Quality of Life

Crime	Holmes County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	1,761.5	2,989.5
Admissions to prison FY 2017-18	99	27,917
Admissions to prison per 100,000 population FY 2017-18	491.7	134.0

Workers Aged 16 and Over	Holmes County	Florida
Place of Work in Florida		
Worked outside county of residence	39.7%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	28.2	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Holmes County	Florida*
Total - All Revenue Account Codes		
($000s)	$18,237.1	$40,323,612.7
Per Capita $	$911.72	$2,097.46
% of Total	100.0%	100.0%
Taxes		
($000s)	$5,238.5	$12,835,034.6
Per Capita $	$261.89	$667.62
% of Total	28.7%	31.8%
Permits, Fee, and Special Assessments		
($000s)	$105.7	$1,732,457.6
Per Capita $	$5.28	$90.11
% of Total	0.6%	4.3%
Intergovernmental Revenues		
($000s)	$8,950.5	$4,079,466.6
Per Capita $	$447.46	$212.20
% of Total	49.1%	10.1%
Charges for Services		
($000s)	$1,672.2	$12,526,050.9
Per Capita $	$83.60	$651.55
% of Total	9.2%	31.1%
Judgments, Fines, and Forfeits		
($000s)	$323.5	$202,607.1
Per Capita $	$16.17	$10.54
% of Total	1.8%	0.5%
Miscellaneous Revenues		
($000s)	$656.9	$908,143.1
Per Capita $	$32.84	$47.24
% of Total	3.6%	2.3%
Other Sources		
($000s)	$1,289.7	$8,039,852.7
Per Capita $	$64.48	$418.20
% of Total	7.1%	19.9%

Expenditures 2015-16	Holmes County	Florida*
Total - All Expenditure Account Codes		
($000s)	$17,969.96	$38,724,729.62
Per Capita $	$898.36	$2,014.29
% of Total	98.5%	96.0%
General Government Services**		
($000s)	$2,580.31	$7,520,342.77
Per Capita $	$129.00	$391.18
% of Total	14.1%	18.6%
Public Safety		
($000s)	$5,857.20	$9,077,106.65
Per Capita $	$292.82	$472.15
% of Total	32.1%	22.5%
Physical Environment		
($000s)	$304.26	$4,450,581.04
Per Capita $	$15.21	$231.50
% of Total	1.7%	11.0%
Transportation		
($000s)	$6,088.45	$4,573,528.57
Per Capita $	$304.38	$237.89
% of Total	33.4%	11.3%
Economic Environment		
($000s)	$279.08	$1,451,926.79
Per Capita $	$13.95	$75.52
% of Total	1.5%	3.6%
Human Services		
($000s)	$449.08	$3,212,191.93
Per Capita $	$22.45	$167.08
% of Total	2.5%	8.0%
Culture / Recreation		
($000s)	$223.33	$1,496,681.81
Per Capita $	$11.16	$77.85
% of Total	1.2%	3.7%
Other Uses and Non-Operating		
($000s)	$1,182.37	$6,041,997.10
Per Capita $	$59.11	$314.28
% of Total	6.5%	15.0%
Court-Related Expenditures		
($000s)	$1,005.89	$900,372.95
Per Capita $	$50.29	$46.83
% of Total	5.5%	2.2%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

State Infrastructure

Transportation	Holmes County	Florida
State Highway		
Centerline Miles	104.8	12,106.8
Lane Miles	246.2	44,204.6
State Bridges		
Number	48	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	86	9,498
Square Footage	383,097	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	12	38,326
Acreage	282.8	3,140,422.9
Non-Conservation Lands		
Parcels	26	5,880
Acreage	405.1	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Holmes County	
	County-Wide	Not County-Wide*
County	9.4916	
School	6.2230	
Municipal		0.0271
Special Districts	0.0338	

*MSTU included in Not County-Wide "County" category

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Okaloosa County

Florida's 26th most populous county

with 1% of Florida's population

Population

Census Population	Okaloosa County	Florida
1980 Census	109,920	9,746,961
1990 Census	143,777	12,938,071
% change 1980-90	30.8%	32.7%
2000 Census	170,498	15,982,824
% change 1990-00	18.6%	23.5%
2010 Census	180,822	18,801,332
% change 2000-10	6.1%	17.6%
Age		
% Under 18 years of age	22.3%	21.3%
% 65 years of age and over	13.9%	17.3%
Race & Ethnicity		
% White alone	81.1%	75.0%
% Black or African American alone	9.3%	16.0%
% Hispanic or Latino (of any race)	6.8%	22.5%
Estimates and Projections		
2018 Estimate	198,152	20,840,568
% change 2010-18	9.6%	10.8%
2020 Projection based on 2018 estimate	202,591	21,517,610
% change 2018-20	2.2%	3.2%
2025 Projection based on 2018 estimate	212,083	23,050,820
% change 2020-25	4.7%	7.1%
2017 Median Age	38.7	41.6

Density

Persons per square mile		
2000	182.2	296.4
2010	194.4	350.6
2018	213.0	392.7

Households and Family Households

Households	Okaloosa County	Florida
Total households, 2000 Census	66,269	6,338,075
Family households, 2000 Census	46,499	4,210,760
% with own children under 18	47.1%	42.3%
Total households, 2010 Census	72,379	7,420,802
Family households, 2010 Census	48,457	4,835,475
% with own children under 18	41.6%	40.0%
Average Household Size, 2010 Census	2.43	2.48
Average Family Size, 2010 Census	2.92	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Okaloosa County	Florida
Housing units, 2000 Census	78,593	7,302,947
Occupied	66,269	6,337,929
Owner-occupied	43,995	4,441,799
Renter-occupied	22,274	1,896,130
Vacant	12,324	965,018
Housing units, 2010 Census	92,407	8,989,580
Occupied	72,379	7,420,802
Owner-occupied	47,095	4,998,979
Renter-occupied	25,284	2,421,823
Vacant	20,028	1,568,778
Units Permitted		
1990	1,065	126,384
2000	1,489	155,269
2010	547	38,679
2011	749	42,360
2012	922	64,810
2013	1,045	86,752
2014	590	84,075
2015	702	109,924
2016	837	116,240
2017	1,199	122,719

Population Characteristics

Language spoken at home other than English	Okaloosa County	Florida
Persons aged 5 and over	10.8%	28.7%
Place of birth		
Foreign born	6.8%	20.2%
Veteran status		
Civilian population 18 and over	22.7%	9.0%

Residence 1 Year Ago		
Persons aged 1 and over		
Same house	80.7%	84.1%
Different house in the U.S.	18.4%	14.8%
Same county in Florida	9.4%	8.9%
Different county in Florida	2.7%	3.1%
Different county in another state	6.3%	2.8%
Abroad	0.8%	1.1%

Employment by Industry

Number of Establishments		
2017	**Okaloosa County**	**Florida**
All industries	6,373	679,976
Natural Resource & Mining	21	5,274
Construction	761	68,218
Manufacturing	159	20,585
Trade, Transportation and Utilities	1,220	139,467
Information	69	10,989
Financial Activities	704	72,393
Professional & Business Services	1,324	159,259
Education & Health Services	667	72,778
Leisure and Hospitality	750	55,767
Other Services	492	55,357
Government	142	6,037

Percent of All Establishments		
2017	**Okaloosa County**	**Florida**
All industries	6,373	679,976
Natural Resource & Mining	0.3%	0.8%
Construction	11.9%	10.0%
Manufacturing	2.5%	3.0%
Trade, Transportation and Utilities	19.1%	20.5%
Information	1.1%	1.6%
Financial Activities	11.0%	10.6%
Professional & Business Services	20.8%	23.4%
Education & Health Services	10.5%	10.7%
Leisure and Hospitality	11.8%	8.2%
Other Services	7.7%	8.1%
Government	2.2%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Okaloosa County	Florida
All industries	82,729	8,495,250
Natural Resource & Mining	0.1%	0.9%
Construction	5.1%	5.9%
Manufacturing	3.5%	4.3%
Trade, Transportation and Utilities	17.6%	20.5%
Information	1.1%	1.6%
Financial Activities	5.9%	6.6%
Professional & Business Services	14.3%	15.6%
Education & Health Services	11.2%	14.8%
Leisure and Hospitality	18.0%	14.1%
Other Services	3.2%	3.2%
Government	20.0%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Okaloosa County	Florida
All industries	$44,315	$48,452
Natural Resource & Mining	$32,299	$32,773
Construction	$39,760	$49,255
Manufacturing	$65,112	$59,389
Trade, Transportation and Utilities	$35,441	$43,218
Information	$72,947	$80,303
Financial Activities	$46,026	$72,712
Professional & Business Services	$63,291	$58,701
Education & Health Services	$44,378	$49,450
Leisure and Hospitality	$19,945	$24,901
Other Services	$37,251	$35,320
Government	$57,084	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Okaloosa County	Florida
1990	62.3%	64.3%
2000	62.6%	63.7%
2010	63.4%	62.2%
2018	62.4%	61.6%

Unemployment Rate	Okaloosa County	Florida
1990	5.9%	6.1%
2000	3.7%	3.7%
2010	8.4%	11.1%
2018	2.9%	3.6%

Income and Financial Health

Personal Income ($000s)	Okaloosa County	Florida
1990	$2,708,545	$260,093,568
2000	$5,024,557	$477,315,998
% change 1990-2000	85.5%	83.5%
2010	$7,381,151	$725,801,140
% change 2000-10	46.9%	52.1%
2011	$7,596,202	$766,185,838
% change 2010-11	2.9%	5.6%
2012	$8,084,727	$791,918,553
% change 2011-12	6.4%	3.4%
2013	$8,145,456	$794,796,980
% change 2012-13	0.8%	0.4%
2014	$8,548,867	$858,498,660
% change 2013-14	5.0%	8.0%
2015	$8,952,618	$919,226,924
% change 2014-15	4.7%	7.1%
2016	$9,178,031	$953,260,614
% change 2015-16	2.5%	3.7%
2017	$9,627,521	$1,000,624,065
% change 2016-17	4.9%	5.0%

Per Capita Personal Income	Okaloosa County	Florida
1990	$18,750	$19,956
2000	$29,349	$29,744
% change 1990-00	56.5%	49.0%
2010	$40,844	$38,511
% change 2000-10	39.2%	29.5%
2011	$41,491	$40,120
% change 2010-11	1.6%	4.2%
2012	$42,599	$40,944
% change 2011-12	2.7%	2.1%
2013	$42,262	$40,582
% change 2012-13	-0.8%	-0.9%
2014	$43,924	$43,146
% change 2013-14	3.9%	6.3%
2015	$45,282	$45,352
% change 2014-15	3.1%	5.1%
2016	$45,910	$46,148
% change 2015-16	1.4%	1.8%
2017	$47,433	$47,684
% change 2016-17	3.3%	3.3%

Earnings by Place of Work ($000s)	Okaloosa County	Florida
1990	$1,880,641	$161,317,329
2000	$3,474,987	$313,054,047
% change 1990-2000	84.8%	94.1%
2010	$5,504,808	$438,991,235
% change 2000-10	58.4%	40.2%
2011	$5,696,835	$450,502,115
% change 2010-11	3.5%	2.6%
2012	$6,177,730	$468,412,894
% change 2011-12	8.4%	4.0%
2013	$6,264,725	$482,900,406
% change 2012-13	1.4%	3.1%
2014	$6,374,815	$512,331,048
% change 2013-14	1.8%	6.1%
2015	$6,631,519	$545,122,402
% change 2014-15	5.9%	12.9%
2016	$6,870,553	$567,712,460
% change 2015-16	7.8%	10.8%
2017	$7,231,821	$596,159,864
% change 2016-17	9.1%	9.4%

Median Income		
Median Household Income	$59,955	$50,883
Median Family Income	$71,292	$61,442

Percent in Poverty, 2017		
All ages in poverty	10.9%	14.1%
Under age 18 in poverty	16.4%	20.6%
Ages 5-17 in families in poverty	15.8%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Okaloosa County	Florida
12-Month Period Ending Dec. 31, 2017	1.28	1.99
12-Month Period Ending Dec. 31, 2018	1.45	2.02
State Rank	29	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Okaloosa County School District	Florida
Total (state total includes special districts)	42	3,186
Elementary	19	1,898
Middle	7	580
Senior High	5	708
Combination	11	531

Educational attainment Persons aged 25 and older	Okaloosa County	Florida
% HS graduate or higher	91.6%	87.6%
% bachelor's degree or higher	29.8%	28.5%

Quality of Life

Crime	Okaloosa County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	2,799.1	2,989.5
Admissions to prison FY 2017-18	455	27,917
Admissions to prison per 100,000 population FY 2017-18	229.6	134.0

Workers Aged 16 and Over	Okaloosa County	Florida
Place of Work in Florida		
Worked outside county of residence	8.5%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	23.6	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Okaloosa County	Florida*
Total - All Revenue Account Codes		
($000s)	$265,033.9	$40,323,612.7
Per Capita $	$1,373.77	$2,097.46
% of Total	100.0%	100.0%
Taxes		
($000s)	$78,314.2	$12,835,034.6
Per Capita $	$405.93	$667.62
% of Total	29.5%	31.8%
Permits, Fee, and Special Assessments		
($000s)	$2,656.1	$1,732,457.6
Per Capita $	$13.77	$90.11
% of Total	1.0%	4.3%
Intergovernmental Revenues		
($000s)	$34,247.3	$4,079,466.6
Per Capita $	$177.52	$212.20
% of Total	12.9%	10.1%
Charges for Services		
($000s)	$105,404.4	$12,526,050.9
Per Capita $	$546.35	$651.55
% of Total	39.8%	31.1%
Judgments, Fines, and Forfeits		
($000s)	$1,431.5	$202,607.1
Per Capita $	$7.42	$10.54
% of Total	0.5%	0.5%
Miscellaneous Revenues		
($000s)	$10,403.2	$908,143.1
Per Capita $	$53.92	$47.24
% of Total	3.9%	2.3%
Other Sources		
($000s)	$32,577.2	$8,039,852.7
Per Capita $	$168.86	$418.20
% of Total	12.3%	19.9%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

Expenditures 2015-16	Okaloosa County	Florida*
Total - All Expenditure Account Codes		
($000s)	$233,687.56	$38,724,729.62
Per Capita $	$1,211.29	$2,014.29
% of Total	88.2%	96.0%
General Government Services**		
($000s)	$59,252.49	$7,520,342.77
Per Capita $	$307.13	$391.18
% of Total	22.4%	18.6%
Public Safety		
($000s)	$67,737.52	$9,077,106.65
Per Capita $	$351.11	$472.15
% of Total	25.6%	22.5%
Physical Environment		
($000s)	$35,750.51	$4,450,581.04
Per Capita $	$185.31	$231.50
% of Total	13.5%	11.0%
Transportation		
($000s)	$32,073.83	$4,573,528.57
Per Capita $	$166.25	$237.89
% of Total	12.1%	11.3%
Economic Environment		
($000s)	$9,174.47	$1,451,926.79
Per Capita $	$47.55	$75.52
% of Total	3.5%	3.6%
Human Services		
($000s)	$4,783.44	$3,212,191.93
Per Capita $	$24.79	$167.08
% of Total	1.8%	8.0%
Culture / Recreation		
($000s)	$7,755.27	$1,496,681.81
Per Capita $	$40.20	$77.85
% of Total	2.9%	3.7%
Other Uses and Non-Operating		
($000s)	$9,274.15	$6,041,997.10
Per Capita $	$48.07	$314.28
% of Total	3.5%	15.0%
Court-Related Expenditures		
($000s)	$7,885.87	$900,372.95
Per Capita $	$40.88	$46.83
% of Total	3.0%	2.2%

State Infrastructure

Transportation	Okaloosa County	Florida
State Highway		
Centerline Miles	215.5	12,106.8
Lane Miles	705.4	44,204.6
State Bridges		
Number	85	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	87	9,498
Square Footage	420,233	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	169	38,326
Acreage	62,924.0	3,140,422.9
Non-Conservation Lands		
Parcels	65	5,880
Acreage	214.9	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Okaloosa County	
	County-Wide	Not County-Wide*
County	3.8308	0.1403
School	6.3610	
Municipal		1.7505
Special Districts	0.0338	1.1594

*MSTU included in Not County-Wide "County" category

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May 2019

Santa Rosa County

Florida's 30th most populous county

with 0.8% of Florida's population

Population

Census Population	Santa Rosa County	Florida
1980 Census	55,988	9,746,961
1990 Census	81,608	12,938,071
% change 1980-90	45.8%	32.7%
2000 Census	117,743	15,982,824
% change 1990-00	44.3%	23.5%
2010 Census	151,372	18,801,332
% change 2000-10	28.6%	17.6%
Age		
% Under 18 years of age	23.9%	21.3%
% 65 years of age and over	12.9%	17.3%
Race & Ethnicity		
% White alone	87.8%	75.0%
% Black or African American alone	5.4%	16.0%
% Hispanic or Latino (of any race)	4.3%	22.5%
Estimates and Projections		
2018 Estimate	174,887	20,840,568
% change 2010-18	15.5%	10.8%
2020 Projection based on 2018 estimate	182,635	21,517,610
% change 2018-20	4.4%	3.2%
2025 Projection based on 2018 estimate	199,900	23,050,820
% change 2020-25	9.5%	7.1%
2017 Median Age	39.5	41.6

Density

Persons per square mile		
2000	115.8	296.4
2010	149.6	350.6
2018	172.7	392.7

Households and Family Households

Households	Santa Rosa County	Florida
Total households, 2000 Census	43,793	6,338,075
Family households, 2000 Census	33,321	4,210,760
% with own children under 18	48.0%	42.3%
Total households, 2010 Census	56,910	7,420,802
Family households, 2010 Census	41,553	4,835,475
% with own children under 18	43.2%	40.0%
Average Household Size, 2010 Census	2.59	2.48
Average Family Size, 2010 Census	2.99	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Santa Rosa County	Florida
Housing units, 2000 Census	49,119	7,302,947
Occupied	43,793	6,337,929
Owner-occupied	35,194	4,441,799
Renter-occupied	8,599	1,896,130
Vacant	5,326	965,018
Housing units, 2010 Census	64,760	8,989,580
Occupied	56,910	7,420,802
Owner-occupied	43,453	4,998,979
Renter-occupied	13,457	2,421,823
Vacant	7,850	1,568,778
Units Permitted		
1990	904	126,384
2000	1,056	155,269
2010	781	38,679
2011	567	42,360
2012	839	64,810
2013	1,301	86,752
2014	1,127	84,075
2015	1,242	109,924
2016	1,417	116,240
2017	1,536	122,719

Population Characteristics

Language spoken at home other than English	Santa Rosa County	Florida
Persons aged 5 and over	5.8%	28.7%
Place of birth		
Foreign born	4.7%	20.2%
Veteran status		
Civilian population 18 and over	18.5%	9.0%
Residence 1 Year Ago		
Persons aged 1 and over		
Same house	80.9%	84.1%
Different house in the U.S.	18.6%	14.8%
Same county in Florida	8.0%	8.9%
Different county in Florida	4.8%	3.1%
Different county in another state	5.9%	2.8%
Abroad	0.5%	1.1%

Employment by Industry

Number of Establishments 2017	Santa Rosa County	Florida
All industries	3,399	679,976
Natural Resource & Mining	57	5,274
Construction	524	68,218
Manufacturing	89	20,585
Trade, Transportation and Utilities	621	139,467
Information	24	10,989
Financial Activities	369	72,393
Professional & Business Services	672	159,259
Education & Health Services	353	72,778
Leisure and Hospitality	294	55,767
Other Services	272	55,357
Government	74	6,037

Percent of All Establishments 2017	Santa Rosa County	Florida
All industries	3,399	679,976
Natural Resource & Mining	1.7%	0.8%
Construction	15.4%	10.0%
Manufacturing	2.6%	3.0%
Trade, Transportation and Utilities	18.3%	20.5%
Information	0.7%	1.6%
Financial Activities	10.9%	10.6%
Professional & Business Services	19.8%	23.4%
Education & Health Services	10.4%	10.7%
Leisure and Hospitality	8.6%	8.2%
Other Services	8.0%	8.1%
Government	2.2%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Santa Rosa County	Florida
All industries	36,829	8,495,250
Natural Resource & Mining	0.9%	0.9%
Construction	7.7%	5.9%
Manufacturing	2.2%	4.3%
Trade, Transportation and Utilities	21.1%	20.5%
Information	1.6%	1.6%
Financial Activities	3.6%	6.6%
Professional & Business Services	12.2%	15.6%
Education & Health Services	14.3%	14.8%
Leisure and Hospitality	15.9%	14.1%
Other Services	3.0%	3.2%
Government	17.3%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Santa Rosa County	Florida
All industries	$36,834	$48,452
Natural Resource & Mining	$40,133	$32,773
Construction	$37,970	$49,255
Manufacturing	$56,061	$59,389
Trade, Transportation and Utilities	$30,339	$43,218
Information	$43,446	$80,303
Financial Activities	$39,834	$72,712
Professional & Business Services	$52,551	$58,701
Education & Health Services	$43,337	$49,450
Leisure and Hospitality	$16,223	$24,901
Other Services	$29,794	$35,320
Government	$44,172	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Santa Rosa County	Florida
1990	66.0%	64.3%
2000	63.6%	63.7%
2010	61.9%	62.2%
2018	59.5%	61.6%

Unemployment Rate	Santa Rosa County	Florida
1990	5.5%	6.1%
2000	3.8%	3.7%
2010	9.3%	11.1%
2018	3.3%	3.6%

Income and Financial Health

Personal Income ($000s)	Santa Rosa County	Florida
1990	$1,358,513	$260,093,568
2000	$2,959,171	$477,315,998
% change 1990-2000	117.8%	83.5%
2010	$5,551,100	$725,801,140
% change 2000-10	87.6%	52.1%
2011	$5,854,191	$766,185,838
% change 2010-11	5.5%	5.6%
2012	$6,081,061	$791,918,553
% change 2011-12	3.9%	3.4%
2013	$6,104,008	$794,796,980
% change 2012-13	0.4%	0.4%
2014	$6,429,035	$858,498,660
% change 2013-14	5.3%	8.0%
2015	$6,738,767	$919,226,924
% change 2014-15	4.8%	7.1%
2016	$7,120,444	$953,260,614
% change 2015-16	5.7%	3.7%
2017	$7,477,766	$1,000,624,065
% change 2016-17	5.0%	5.0%

Per Capita Personal Income	Santa Rosa County	Florida
1990	$16,480	$19,956
2000	$25,001	$29,744
% change 1990-00	51.7%	49.0%
2010	$36,303	$38,511
% change 2000-10	45.2%	29.5%
2011	$37,593	$40,120
% change 2010-11	3.6%	4.2%
2012	$38,438	$40,944
% change 2011-12	2.2%	2.1%
2013	$38,050	$40,582
% change 2012-13	-1.0%	-0.9%
2014	$39,498	$43,146
% change 2013-14	3.8%	6.3%
2015	$40,506	$45,352
% change 2014-15	2.6%	5.1%
2016	$41,869	$46,148
% change 2015-16	3.4%	1.8%
2017	$42,909	$47,684
% change 2016-17	2.5%	3.3%

Earnings by Place of Work ($000s)		
1990	$569,950	$161,317,329
2000	$1,022,701	$313,054,047
% change 1990-2000	79.4%	94.1%
2010	$1,822,027	$438,991,235
% change 2000-10	78.2%	40.2%
2011	$1,960,491	$450,502,115
% change 2010-11	7.6%	2.6%
2012	$2,062,499	$468,412,894
% change 2011-12	5.2%	4.0%
2013	$1,988,922	$482,900,406
% change 2012-13	-3.6%	3.1%
2014	$2,084,730	$512,331,048
% change 2013-14	4.8%	6.1%
2015	$2,247,640	$545,122,402
% change 2014-15	13.0%	12.9%
2016	$2,363,461	$567,712,460
% change 2015-16	13.4%	10.8%
2017	$2,459,927	$596,159,864
% change 2016-17	9.4%	9.4%

Median Income		
Median Household Income	$62,731	$50,883
Median Family Income	$69,748	$61,442

Percent in Poverty, 2017		
All ages in poverty	10.2%	14.1%
Under age 18 in poverty	14.3%	20.6%
Ages 5-17 in families in poverty	13.1%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Santa Rosa County	Florida
12-Month Period Ending Dec. 31, 2017	1.65	1.99
12-Month Period Ending Dec. 31, 2018	1.42	2.02
State Rank	32	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Santa Rosa County School District	Florida
Total (state total includes special districts)	34	3,186
Elementary	19	1,898
Middle	7	580
Senior High	6	708
Combination	2	531

Educational attainment Persons aged 25 and older	Santa Rosa County	Florida
% HS graduate or higher	90.7%	87.6%
% bachelor's degree or higher	27.1%	28.5%

Quality of Life

Crime	Santa Rosa County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	1,263.2	2,989.5
Admissions to prison FY 2017-18	217	27,917
Admissions to prison per 100,000 population FY 2017-18	124.1	134.0

Workers Aged 16 and Over	Santa Rosa County	Florida
Place of Work in Florida		
Worked outside county of residence	50.7%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	28.7	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Santa Rosa County	Florida*
Total - All Revenue Account Codes ($000s)	$155,793.9	$40,323,612.7
Per Capita $	$932.85	$2,097.46
% of Total	100.0%	100.0%
Taxes ($000s)	$59,737.0	$12,835,034.6
Per Capita $	$357.69	$667.62
% of Total	38.3%	31.8%
Permits, Fee, and Special Assessments ($000s)	$13,785.8	$1,732,457.6
Per Capita $	$82.55	$90.11
% of Total	8.8%	4.3%
Intergovernmental Revenues ($000s)	$31,265.6	$4,079,466.6
Per Capita $	$187.21	$212.20
% of Total	20.1%	10.1%
Charges for Services ($000s)	$25,634.5	$12,526,050.9
Per Capita $	$153.49	$651.55
% of Total	16.5%	31.1%
Judgments, Fines, and Forfeits ($000s)	$1,412.3	$202,607.1
Per Capita $	$8.46	$10.54
% of Total	0.9%	0.5%
Miscellaneous Revenues ($000s)	$4,419.4	$908,143.1
Per Capita $	$26.46	$47.24
% of Total	2.8%	2.3%
Other Sources ($000s)	$19,539.3	$8,039,852.7
Per Capita $	$117.00	$418.20
% of Total	12.5%	19.9%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

Expenditures 2015-16	Santa Rosa County	Florida*
Total - All Expenditure Account Codes ($000s)	$151,098.69	$38,724,729.62
Per Capita $	$904.73	$2,014.29
% of Total	97.0%	96.0%
General Government Services** ($000s)	$27,264.03	$7,520,342.77
Per Capita $	$163.25	$391.18
% of Total	17.5%	18.6%
Public Safety ($000s)	$54,401.49	$9,077,106.65
Per Capita $	$325.74	$472.15
% of Total	34.9%	22.5%
Physical Environment ($000s)	$22,469.28	$4,450,581.04
Per Capita $	$134.54	$231.50
% of Total	14.4%	11.0%
Transportation ($000s)	$14,582.48	$4,573,528.57
Per Capita $	$87.32	$237.89
% of Total	9.4%	11.3%
Economic Environment ($000s)	$3,494.30	$1,451,926.79
Per Capita $	$20.92	$75.52
% of Total	2.2%	3.6%
Human Services ($000s)	$5,043.00	$3,212,191.93
Per Capita $	$30.20	$167.08
% of Total	3.2%	8.0%
Culture / Recreation ($000s)	$3,966.99	$1,496,681.81
Per Capita $	$23.75	$77.85
% of Total	2.5%	3.7%
Other Uses and Non-Operating ($000s)	$14,257.10	$6,041,997.10
Per Capita $	$85.37	$314.28
% of Total	9.2%	15.0%
Court-Related Expenditures ($000s)	$5,620.03	$900,372.95
Per Capita $	$33.65	$46.83
% of Total	3.6%	2.2%

State Infrastructure

Transportation	Santa Rosa County	Florida
State Highway		
Centerline Miles	196.2	12,106.8
Lane Miles	565.0	44,204.6
State Bridges		
Number	56	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	203	9,498
Square Footage	1,394,712	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	318	38,326
Acreage	150,361.5	3,140,422.9
Non-Conservation Lands		
Parcels	74	5,880
Acreage	1,020.8	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Santa Rosa County	
	County-Wide	Not County-Wide*
County	6.0953	
School	6.2990	
Municipal		0.2963
Special Districts	0.0338	0.4621

*MSTU included in Not County-Wide "County" category

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May 2019

Walton County

Florida's 41st most populous county

with 0.3% of Florida's population

Population

Census Population	Walton County	Florida
1980 Census	21,300	9,746,961
1990 Census	27,759	12,938,071
% change 1980-90	30.3%	32.7%
2000 Census	40,601	15,982,824
% change 1990-00	46.3%	23.5%
2010 Census	55,043	18,801,332
% change 2000-10	35.6%	17.6%
Age		
% Under 18 years of age	20.6%	21.3%
% 65 years of age and over	16.2%	17.3%
Race & Ethnicity		
% White alone	87.8%	75.0%
% Black or African American alone	5.8%	16.0%
% Hispanic or Latino (of any race)	5.3%	22.5%
Estimates and Projections		
2018 Estimate	67,656	20,840,568
% change 2010-18	22.9%	10.8%
2020 Projection based on 2018 estimate	71,814	21,517,610
% change 2018-20	6.1%	3.2%
2025 Projection based on 2018 estimate	81,272	23,050,820
% change 2020-25	13.2%	7.1%
2017 Median Age	42.9	41.6

Density

Persons per square mile		
2000	38.4	296.4
2010	53.0	350.6
2018	65.2	392.7

Households and Family Households

Households	Walton County	Florida
Total households, 2000 Census	16,548	6,338,075
Family households, 2000 Census	11,119	4,210,760
% with own children under 18	39.3%	42.3%
Total households, 2010 Census	22,301	7,420,802
Family households, 2010 Census	14,512	4,835,475
% with own children under 18	37.3%	40.0%
Average Household Size, 2010 Census	2.38	2.48
Average Family Size, 2010 Census	2.87	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Walton County	Florida
Housing units, 2000 Census	29,083	7,302,947
Occupied	16,548	6,337,929
Owner-occupied	13,075	4,441,799
Renter-occupied	3,473	1,896,130
Vacant	12,535	965,018
Housing units, 2010 Census	45,132	8,989,580
Occupied	22,301	7,420,802
Owner-occupied	16,194	4,998,979
Renter-occupied	6,107	2,421,823
Vacant	22,831	1,568,778
Units Permitted		
1990	340	126,384
2000	1,464	155,269
2010	388	38,679
2011	552	42,360
2012	1,111	64,810
2013	1,187	86,752
2014	1,076	84,075
2015	1,325	109,924
2016	1,692	116,240
2017	1,272	122,719

Population Characteristics

Language spoken at home other than English	Walton County	Florida
Persons aged 5 and over	7.9%	28.7%
Place of birth		
Foreign born	5.9%	20.2%
Veteran status		
Civilian population 18 and over	11.7%	9.0%

Residence 1 Year Ago		
Persons aged 1 and over		
Same house	82.2%	84.1%
Different house in the U.S.	17.5%	14.8%
Same county in Florida	8.2%	8.9%
Different county in Florida	5.2%	3.1%
Different county in another state	4.1%	2.8%
Abroad	0.2%	1.1%

Employment by Industry

Number of Establishments 2017	Walton County	Florida
All industries	2,612	679,976
Natural Resource & Mining	16	5,274
Construction	380	68,218
Manufacturing	47	20,585
Trade, Transportation and Utilities	530	139,467
Information	29	10,989
Financial Activities	377	72,393
Professional & Business Services	540	159,259
Education & Health Services	164	72,778
Leisure and Hospitality	309	55,767
Other Services	146	55,357
Government	39	6,037

Percent of All Establishments 2017	Walton County	Florida
All industries	2,612	679,976
Natural Resource & Mining	0.6%	0.8%
Construction	14.5%	10.0%
Manufacturing	1.8%	3.0%
Trade, Transportation and Utilities	20.3%	20.5%
Information	1.1%	1.6%
Financial Activities	14.4%	10.6%
Professional & Business Services	20.7%	23.4%
Education & Health Services	6.3%	10.7%
Leisure and Hospitality	11.8%	8.2%
Other Services	5.6%	8.1%
Government	1.5%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Walton County	Florida
All industries	25,544	8,495,250
Natural Resource & Mining	0.2%	0.9%
Construction	8.6%	5.9%
Manufacturing	1.5%	4.3%
Trade, Transportation and Utilities	21.4%	20.5%
Information	0.5%	1.6%
Financial Activities	6.1%	6.6%
Professional & Business Services	9.0%	15.6%
Education & Health Services	9.8%	14.8%
Leisure and Hospitality	26.4%	14.1%
Other Services	3.6%	3.2%
Government	12.8%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Walton County	Florida
All industries	$37,312	$48,452
Natural Resource & Mining	$22,865	$32,773
Construction	$41,611	$49,255
Manufacturing	$40,530	$59,389
Trade, Transportation and Utilities	$31,079	$43,218
Information	$42,717	$80,303
Financial Activities	$51,308	$72,712
Professional & Business Services	$54,017	$58,701
Education & Health Services	$46,101	$49,450
Leisure and Hospitality	$26,961	$24,901
Other Services	$30,679	$35,320
Government	$42,411	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Walton County	Florida
1990	61.4%	64.3%
2000	61.0%	63.7%
2010	59.4%	62.2%
2018	57.1%	61.6%

Unemployment Rate	Walton County	Florida
1990	6.4%	6.1%
2000	3.5%	3.7%
2010	9.4%	11.1%
2018	3.1%	3.6%

Income and Financial Health

Personal Income ($000s)	Walton County	Florida
1990	$353,994	$260,093,568
2000	$835,282	$477,315,998
% change 1990-2000	136.0%	83.5%
2010	$2,185,745	$725,801,140
% change 2000-10	161.7%	52.1%
2011	$2,339,358	$766,185,838
% change 2010-11	7.0%	5.6%
2012	$2,616,336	$791,918,553
% change 2011-12	11.8%	3.4%
2013	$2,699,385	$794,796,980
% change 2012-13	3.2%	0.4%
2014	$2,995,901	$858,498,660
% change 2013-14	11.0%	8.0%
2015	$3,293,385	$919,226,924
% change 2014-15	9.9%	7.1%
2016	$3,642,822	$953,260,614
% change 2015-16	10.6%	3.7%
2017	$3,834,265	$1,000,624,065
% change 2016-17	5.3%	5.0%

Per Capita Personal Income	Walton County	Florida
1990	$12,717	$19,956
2000	$20,495	$29,744
% change 1990-00	61.2%	49.0%
2010	$39,588	$38,511
% change 2000-10	93.2%	29.5%
2011	$42,084	$40,120
% change 2010-11	6.3%	4.2%
2012	$45,754	$40,944
% change 2011-12	8.7%	2.1%
2013	$45,614	$40,582
% change 2012-13	-0.3%	-0.9%
2014	$48,950	$43,146
% change 2013-14	7.3%	6.3%
2015	$52,204	$45,352
% change 2014-15	6.6%	5.1%
2016	$55,667	$46,148
% change 2015-16	6.6%	1.8%
2017	$56,076	$47,684
% change 2016-17	0.7%	3.3%

Earnings by Place of Work ($000s)	Walton County	Florida
1990	$175,845	$161,317,329
2000	$423,638	$313,054,047
% change 1990-2000	140.9%	94.1%
2010	$956,738	$438,991,235
% change 2000-10	125.8%	40.2%
2011	$980,061	$450,502,115
% change 2010-11	2.4%	2.6%
2012	$1,113,539	$468,412,894
% change 2011-12	13.6%	4.0%
2013	$1,229,235	$482,900,406
% change 2012-13	10.4%	3.1%
2014	$1,349,576	$512,331,048
% change 2013-14	9.8%	6.1%
2015	$1,461,527	$545,122,402
% change 2014-15	18.9%	12.9%
2016	$1,578,245	$567,712,460
% change 2015-16	16.9%	10.8%
2017	$1,671,043	$596,159,864
% change 2016-17	14.3%	9.4%

Median Income	Walton County	Florida
Median Household Income	$50,619	$50,883
Median Family Income	$62,284	$61,442

Percent in Poverty, 2017	Walton County	Florida
All ages in poverty	15.9%	14.1%
Under age 18 in poverty	27.0%	20.6%
Ages 5-17 in families in poverty	26.3%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Walton County	Florida
12-Month Period Ending Dec. 31, 2017	1.33	1.99
12-Month Period Ending Dec. 31, 2018	1.08	2.02
State Rank	45	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Walton County School District	Florida
Total (state total includes special districts)	16	3,186
Elementary	6	1,898
Middle	3	580
Senior High	5	708
Combination	2	531

Educational attainment Persons aged 25 and older	Walton County	Florida
% HS graduate or higher	85.9%	87.6%
% bachelor's degree or higher	26.7%	28.5%

Quality of Life

Crime	Walton County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	2,147.0	2,989.5
Admissions to prison FY 2017-18	145	27,917
Admissions to prison per 100,000 population FY 2017-18	214.3	134.0

Workers Aged 16 and Over	Walton County	Florida
Place of Work in Florida		
Worked outside county of residence	26.9%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	28.2	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Walton County	Florida*
Total - All Revenue Account Codes		
($000s)	$164,777.6	$40,323,612.7
Per Capita $	$2,617.89	$2,097.46
% of Total	100.0%	100.0%
Taxes		
($000s)	$97,267.8	$12,835,034.6
Per Capita $	$1,545.33	$667.62
% of Total	59.0%	31.8%
Permits, Fee, and Special Assessments		
($000s)	$2,902.9	$1,732,457.6
Per Capita $	$46.12	$90.11
% of Total	1.8%	4.3%
Intergovernmental Revenues		
($000s)	$24,836.9	$4,079,466.6
Per Capita $	$394.59	$212.20
% of Total	15.1%	10.1%
Charges for Services		
($000s)	$11,897.4	$12,526,050.9
Per Capita $	$189.02	$651.55
% of Total	7.2%	31.1%
Judgments, Fines, and Forfeits		
($000s)	$630.4	$202,607.1
Per Capita $	$10.02	$10.54
% of Total	0.4%	0.5%
Miscellaneous Revenues		
($000s)	$8,498.4	$908,143.1
Per Capita $	$135.02	$47.24
% of Total	5.2%	2.3%
Other Sources		
($000s)	$18,743.9	$8,039,852.7
Per Capita $	$297.79	$418.20
% of Total	11.4%	19.9%

Expenditures 2015-16	Walton County	Florida*
Total - All Expenditure Account Codes		
($000s)	$162,725.36	$38,724,729.62
Per Capita $	$2,585.28	$2,014.29
% of Total	98.8%	96.0%
General Government Services**		
($000s)	$27,946.65	$7,520,342.77
Per Capita $	$444.00	$391.18
% of Total	17.0%	18.6%
Public Safety		
($000s)	$45,020.47	$9,077,106.65
Per Capita $	$715.26	$472.15
% of Total	27.3%	22.5%
Physical Environment		
($000s)	$10,324.79	$4,450,581.04
Per Capita $	$164.03	$231.50
% of Total	6.3%	11.0%
Transportation		
($000s)	$22,515.34	$4,573,528.57
Per Capita $	$357.71	$237.89
% of Total	13.7%	11.3%
Economic Environment		
($000s)	$34,493.44	$1,451,926.79
Per Capita $	$548.01	$75.52
% of Total	20.9%	3.6%
Human Services		
($000s)	$2,221.10	$3,212,191.93
Per Capita $	$35.29	$167.08
% of Total	1.3%	8.0%
Culture / Recreation		
($000s)	$1,841.45	$1,496,681.81
Per Capita $	$29.26	$77.85
% of Total	1.1%	3.7%
Other Uses and Non-Operating		
($000s)	$17,898.84	$6,041,997.10
Per Capita $	$284.37	$314.28
% of Total	10.9%	15.0%
Court-Related Expenditures		
($000s)	$463.29	$900,372.95
Per Capita $	$7.36	$46.83
% of Total	0.3%	2.2%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

State Infrastructure

Transportation	Walton County	Florida
State Highway		
Centerline Miles	203.6	12,106.8
Lane Miles	553.1	44,204.6
State Bridges		
Number	60	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	170	9,498
Square Footage	440,575	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	99	38,326
Acreage	42,082.9	3,140,422.9
Non-Conservation Lands		
Parcels	94	5,880
Acreage	885.7	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Walton County	
	County-Wide	Not County-Wide*
County	3.6363	
School	5.0610	
Municipal		0.1321
Special Districts	0.0338	1.1500

*MSTU included in Not County-Wide "County" category

Prepared by:
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May 2019

Washington County

Florida's 53rd most populous county

with 0.1% of Florida's population

Population

Census Population	Washington County	Florida
1980 Census	14,509	9,746,961
1990 Census	16,919	12,938,071
% change 1980-90	16.6%	32.7%
2000 Census	20,973	15,982,824
% change 1990-00	24.0%	23.5%
2010 Census	24,896	18,801,332
% change 2000-10	18.7%	17.6%
Age		
% Under 18 years of age	21.2%	21.3%
% 65 years of age and over	15.4%	17.3%
Race & Ethnicity		
% White alone	80.4%	75.0%
% Black or African American alone	15.0%	16.0%
% Hispanic or Latino (of any race)	2.9%	22.5%
Estimates and Projections		
2018 Estimate	25,129	20,840,568
% change 2010-18	0.9%	10.8%
2020 Projection based on 2018 estimate	25,476	21,517,610
% change 2018-20	1.4%	3.2%
2025 Projection based on 2018 estimate	26,290	23,050,820
% change 2020-25	3.2%	7.1%
2017 Median Age	41.5	41.6

Density

Persons per square mile		
2000	36.2	296.4
2010	42.7	350.6
2018	43.0	392.7

Households and Family Households

Households	Washington County	Florida
Total households, 2000 Census	7,931	6,338,075
Family households, 2000 Census	5,648	4,210,760
% with own children under 18	42.5%	42.3%
Total households, 2010 Census	8,864	7,420,802
Family households, 2010 Census	6,195	4,835,475
% with own children under 18	38.9%	40.0%
Average Household Size, 2010 Census	2.50	2.48
Average Family Size, 2010 Census	2.97	3.01

According to Census definitions, a household includes all of the people who occupy a housing unit. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption.
Census counts may be corrected for Census Count Question Resolution (CQR).

Housing

Housing Counts	Washington County	Florida
Housing units, 2000 Census	9,503	7,302,947
Occupied	7,931	6,337,929
Owner-occupied	6,493	4,441,799
Renter-occupied	1,438	1,896,130
Vacant	1,572	965,018
Housing units, 2010 Census	10,796	8,989,580
Occupied	8,864	7,420,802
Owner-occupied	6,894	4,998,979
Renter-occupied	1,970	2,421,823
Vacant	1,932	1,568,778
Units Permitted		
1990	108	126,384
2000	79	155,269
2010	23	38,679
2011	23	42,360
2012	22	64,810
2013	25	86,752
2014	21	84,075
2015	26	109,924
2016	45	116,240
2017	41	122,719

Population Characteristics

Language spoken at home other than English	Washington County	Florida
Persons aged 5 and over	3.9%	28.7%
Place of birth		
Foreign born	2.8%	20.2%
Veteran status		
Civilian population 18 and over	10.9%	9.0%
Residence 1 Year Ago		
Persons aged 1 and over		
Same house	85.2%	84.1%
Different house in the U.S.	14.7%	14.8%
Same county in Florida	4.9%	8.9%
Different county in Florida	9.2%	3.1%
Different county in another state	0.7%	2.8%
Abroad	0.0%	1.1%

Employment by Industry

Number of Establishments 2017	Washington County	Florida
All industries	459	679,976
Natural Resource & Mining	19	5,274
Construction	68	68,218
Manufacturing	14	20,585
Trade, Transportation and Utilities	88	139,467
Information	4	10,989
Financial Activities	30	72,393
Professional & Business Services	67	159,259
Education & Health Services	59	72,778
Leisure and Hospitality	38	55,767
Other Services	32	55,357
Government	38	6,037

Percent of All Establishments 2017	Washington County	Florida
All industries	459	679,976
Natural Resource & Mining	4.1%	0.8%
Construction	14.8%	10.0%
Manufacturing	3.1%	3.0%
Trade, Transportation and Utilities	19.2%	20.5%
Information	0.9%	1.6%
Financial Activities	6.5%	10.6%
Professional & Business Services	14.6%	23.4%
Education & Health Services	12.9%	10.7%
Leisure and Hospitality	8.3%	8.2%
Other Services	7.0%	8.1%
Government	8.3%	0.9%

Industries may not add to the total due to confidentiality and unclassified.

Employment by Industry

Average Annual Employment, % of All Industries, 2017	Washington County	Florida
All industries	5,843	8,495,250
Natural Resource & Mining	2.0%	0.9%
Construction	5.8%	5.9%
Manufacturing	NA	4.3%
Trade, Transportation and Utilities	17.1%	20.5%
Information	NA	1.6%
Financial Activities	2.1%	6.6%
Professional & Business Services	7.9%	15.6%
Education & Health Services	15.7%	14.8%
Leisure and Hospitality	10.6%	14.1%
Other Services	1.4%	3.2%
Government	32.2%	12.4%

Industries may not add to the total due to confidentiality and unclassified.

Average Annual Wage 2017	Washington County	Florida
All industries	$34,625	$48,452
Natural Resource & Mining	$42,139	$32,773
Construction	$33,550	$49,255
Manufacturing	NA	$59,389
Trade, Transportation and Utilities	$32,860	$43,218
Information	NA	$80,303
Financial Activities	$41,351	$72,712
Professional & Business Services	$45,755	$58,701
Education & Health Services	$31,959	$49,450
Leisure and Hospitality	$18,491	$24,901
Other Services	$24,956	$35,320
Government	$40,314	$53,214

Labor Force

Labor Force as Percent of Population Aged 18 and Older	Washington County	Florida
1990	58.9%	64.3%
2000	55.7%	63.7%
2010	52.5%	62.2%
2018	49.3%	61.6%

Unemployment Rate	Washington County	Florida
1990	6.9%	6.1%
2000	4.5%	3.7%
2010	10.6%	11.1%
2018	3.8%	3.6%

Income and Financial Health

Personal Income ($000s)	Washington County	Florida
1990	$207,445	$260,093,568
2000	$381,723	$477,315,998
% change 1990-2000	84.0%	83.5%
2010	$635,215	$725,801,140
% change 2000-10	66.4%	52.1%
2011	$641,140	$766,185,838
% change 2010-11	0.9%	5.6%
2012	$621,884	$791,918,553
% change 2011-12	-3.0%	3.4%
2013	$615,796	$794,796,980
% change 2012-13	-1.0%	0.4%
2014	$633,081	$858,498,660
% change 2013-14	2.8%	8.0%
2015	$655,978	$919,226,924
% change 2014-15	3.6%	7.1%
2016	$677,123	$953,260,614
% change 2015-16	3.2%	3.7%
2017	$704,484	$1,000,624,065
% change 2016-17	4.0%	5.0%

Per Capita Personal Income	Washington County	Florida
1990	$12,223	$19,956
2000	$18,157	$29,744
% change 1990-00	48.5%	49.0%
2010	$25,695	$38,511
% change 2000-10	41.5%	29.5%
2011	$26,162	$40,120
% change 2010-11	1.8%	4.2%
2012	$25,138	$40,944
% change 2011-12	-3.9%	2.1%
2013	$25,131	$40,582
% change 2012-13	0.0%	-0.9%
2014	$26,056	$43,146
% change 2013-14	3.7%	6.3%
2015	$26,726	$45,352
% change 2014-15	2.6%	5.1%
2016	$27,694	$46,148
% change 2015-16	3.6%	1.8%
2017	$28,676	$47,684
% change 2016-17	3.5%	3.3%

Earnings by Place of Work ($000s)		
1990	$109,067	$161,317,329
2000	$220,748	$313,054,047
% change 1990-2000	102.4%	94.1%
2010	$296,945	$438,991,235
% change 2000-10	34.5%	40.2%
2011	$300,494	$450,502,115
% change 2010-11	1.2%	2.6%
2012	$294,657	$468,412,894
% change 2011-12	-1.9%	4.0%
2013	$288,640	$482,900,406
% change 2012-13	-2.0%	3.1%
2014	$289,147	$512,331,048
% change 2013-14	0.2%	6.1%
2015	$296,099	$545,122,402
% change 2014-15	2.6%	12.9%
2016	$304,093	$567,712,460
% change 2015-16	5.2%	10.8%
2017	$318,611	$596,159,864
% change 2016-17	7.6%	9.4%

Median Income		
Median Household Income	$36,989	$50,883
Median Family Income	$47,753	$61,442

Percent in Poverty, 2017		
All ages in poverty	21.1%	14.1%
Under age 18 in poverty	28.7%	20.6%
Ages 5-17 in families in poverty	27.2%	19.6%

Personal Bankruptcy Filing Rate (per 1,000 population)	Washington County	Florida
12-Month Period Ending Dec. 31, 2017	0.80	1.99
12-Month Period Ending Dec. 31, 2018	0.80	2.02
State Rank	55	NA

Chapter 7 & Chapter 13

Education

Public Education Schools Traditional Setting (2018-19)	Washington County School	Florida
Total (state total includes special districts)	8	3,186
Elementary	2	1,898
Middle	2	580
Senior High	3	708
Combination	1	531

Educational attainment Persons aged 25 and older	Washington County	Florida
% HS graduate or higher	80.5%	87.6%
% bachelor's degree or higher	11.3%	28.5%

Quality of Life

Crime	Washington County	Florida
Crime rate, 2017 (index crimes per 100,000 population)	1,460.9	2,989.5
Admissions to prison FY 2017-18	116	27,917
Admissions to prison per 100,000 population FY 2017-18	461.6	134.0

Workers Aged 16 and Over	Washington County	Florida
Place of Work in Florida		
Worked outside county of residence	42.0%	17.6%
Travel Time to Work		
Mean travel time to work (minutes)	30.5	27.0

Reported County Government Revenues and Expenditures

Revenue 2015-16	Washington County	Florida*
Total - All Revenue Account Codes ($000s)	$36,842.0	$40,323,612.7
Per Capita $	$1,480.31	$2,097.46
% of Total	100.0%	100.0%
Taxes ($000s)	$12,436.4	$12,835,034.6
Per Capita $	$499.70	$667.62
% of Total	33.8%	31.8%
Permits, Fee, and Special Assessments ($000s)	$154.1	$1,732,457.6
Per Capita $	$6.19	$90.11
% of Total	0.4%	4.3%
Intergovernmental Revenues ($000s)	$17,644.9	$4,079,466.6
Per Capita $	$708.97	$212.20
% of Total	47.9%	10.1%
Charges for Services ($000s)	$3,290.5	$12,526,050.9
Per Capita $	$132.21	$651.55
% of Total	8.9%	31.1%
Judgments, Fines, and Forfeits ($000s)	$6.6	$202,607.1
Per Capita $	$0.27	$10.54
% of Total	0.0%	0.5%
Miscellaneous Revenues ($000s)	$624.3	$908,143.1
Per Capita $	$25.08	$47.24
% of Total	1.7%	2.3%
Other Sources ($000s)	$2,685.2	$8,039,852.7
Per Capita $	$107.89	$418.20
% of Total	7.3%	19.9%

* All County Governments Except Duval - The consolidated City of Jacksonville / Duval County figures are included in municipal totals rather than county government totals.

** (Not Court-Related)

Expenditures 2015-16	Washington County	Florida*
Total - All Expenditure Account Codes ($000s)	$35,918.45	$38,724,729.62
Per Capita $	$1,443.20	$2,014.29
% of Total	97.5%	96.0%
General Government Services** ($000s)	$12,452.79	$7,520,342.77
Per Capita $	$500.35	$391.18
% of Total	33.8%	18.6%
Public Safety ($000s)	$7,804.46	$9,077,106.65
Per Capita $	$313.58	$472.15
% of Total	21.2%	22.5%
Physical Environment ($000s)	$429.25	$4,450,581.04
Per Capita $	$17.25	$231.50
% of Total	1.2%	11.0%
Transportation ($000s)	$9,110.08	$4,573,528.57
Per Capita $	$366.04	$237.89
% of Total	24.7%	11.3%
Economic Environment ($000s)	$1,194.64	$1,451,926.79
Per Capita $	$48.00	$75.52
% of Total	3.2%	3.6%
Human Services ($000s)	$635.50	$3,212,191.93
Per Capita $	$25.53	$167.08
% of Total	1.7%	8.0%
Culture / Recreation ($000s)	$812.80	$1,496,681.81
Per Capita $	$32.66	$77.85
% of Total	2.2%	3.7%
Other Uses and Non-Operating ($000s)	$2,685.22	$6,041,997.10
Per Capita $	$107.89	$314.28
% of Total	7.3%	15.0%
Court-Related Expenditures ($000s)	$793.72	$900,372.95
Per Capita $	$31.89	$46.83
% of Total	2.2%	2.2%

State Infrastructure

Transportation	Washington County	Florida
State Highway		
Centerline Miles	112.2	12,106.8
Lane Miles	293.3	44,204.6
State Bridges		
Number	44	6,929
State Facilities		
Buildings/Facilities (min. 300 Square Feet)		
Number	129	9,498
Square Footage	828,557	64,170,217
State Owned Lands		
State Lands		
Conservation Lands		
Parcels	28	38,326
Acreage	2,170.8	3,140,422.9
Non-Conservation Lands		
Parcels	31	5,880
Acreage	725.5	160,353.7

State and Local Taxation

2018 Ad Valorem Millage Rates	Washington County	
	County-Wide	Not County-Wide*
County	8.9735	
School	6.2900	
Municipal		1.2532
Special Districts	0.0338	

*MSTU included in Not County-Wide "County" category

Prepared by:
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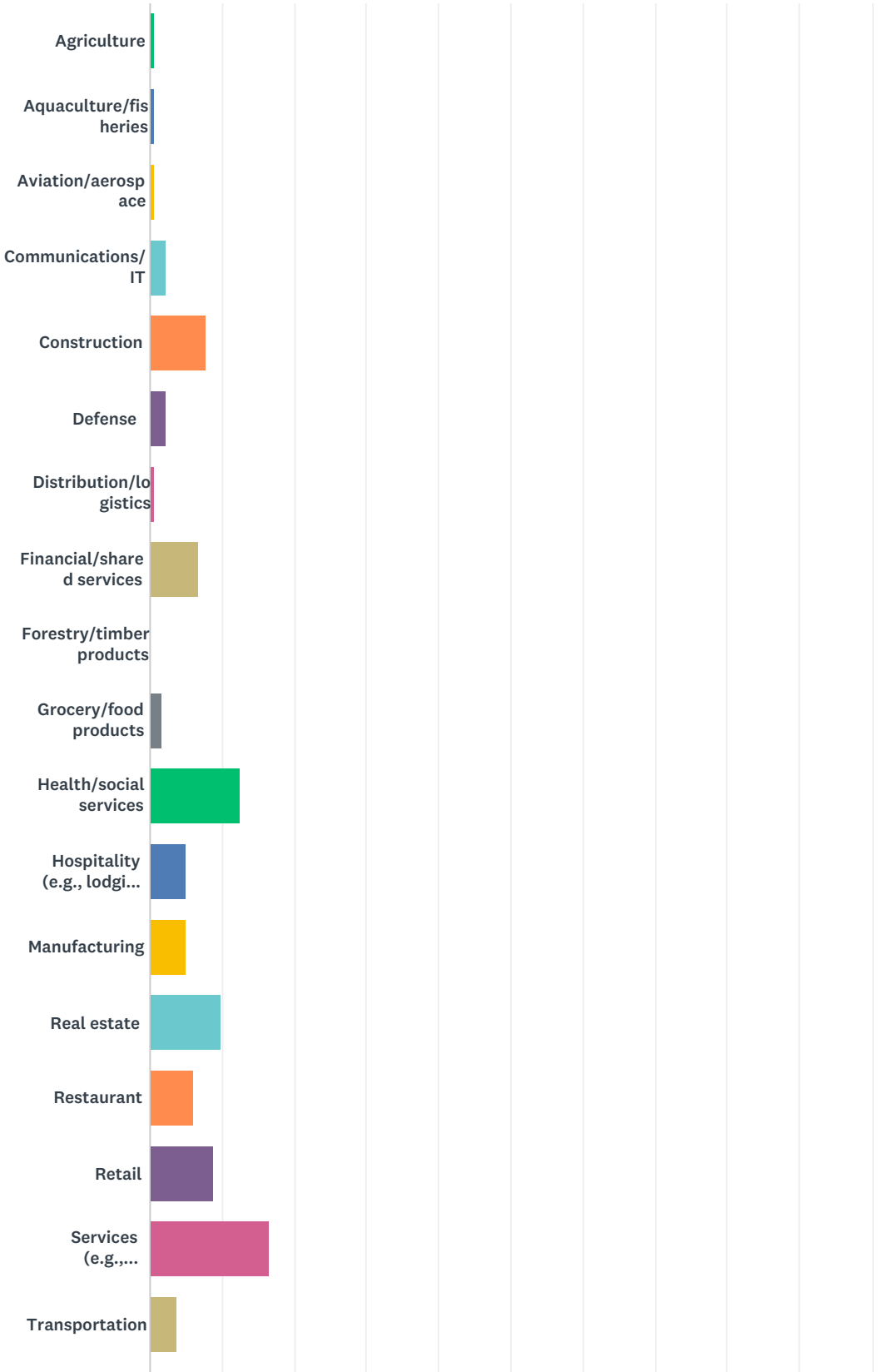
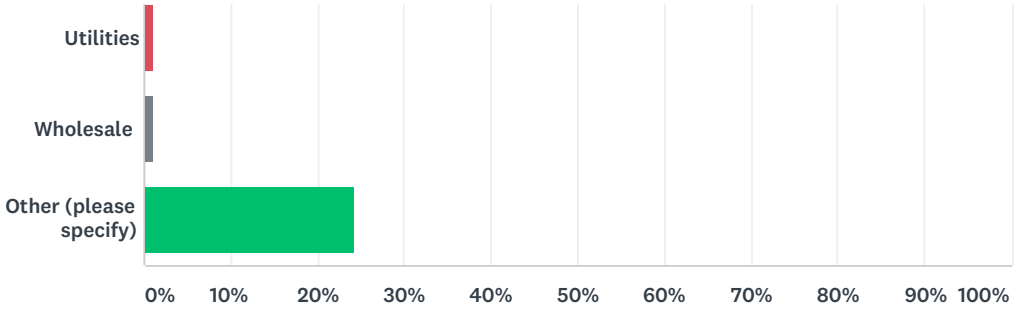
May 2019

Q1 In which industry sector does your business, or the business you are responding on behalf of, operate?

Answered: 182 Skipped: 0





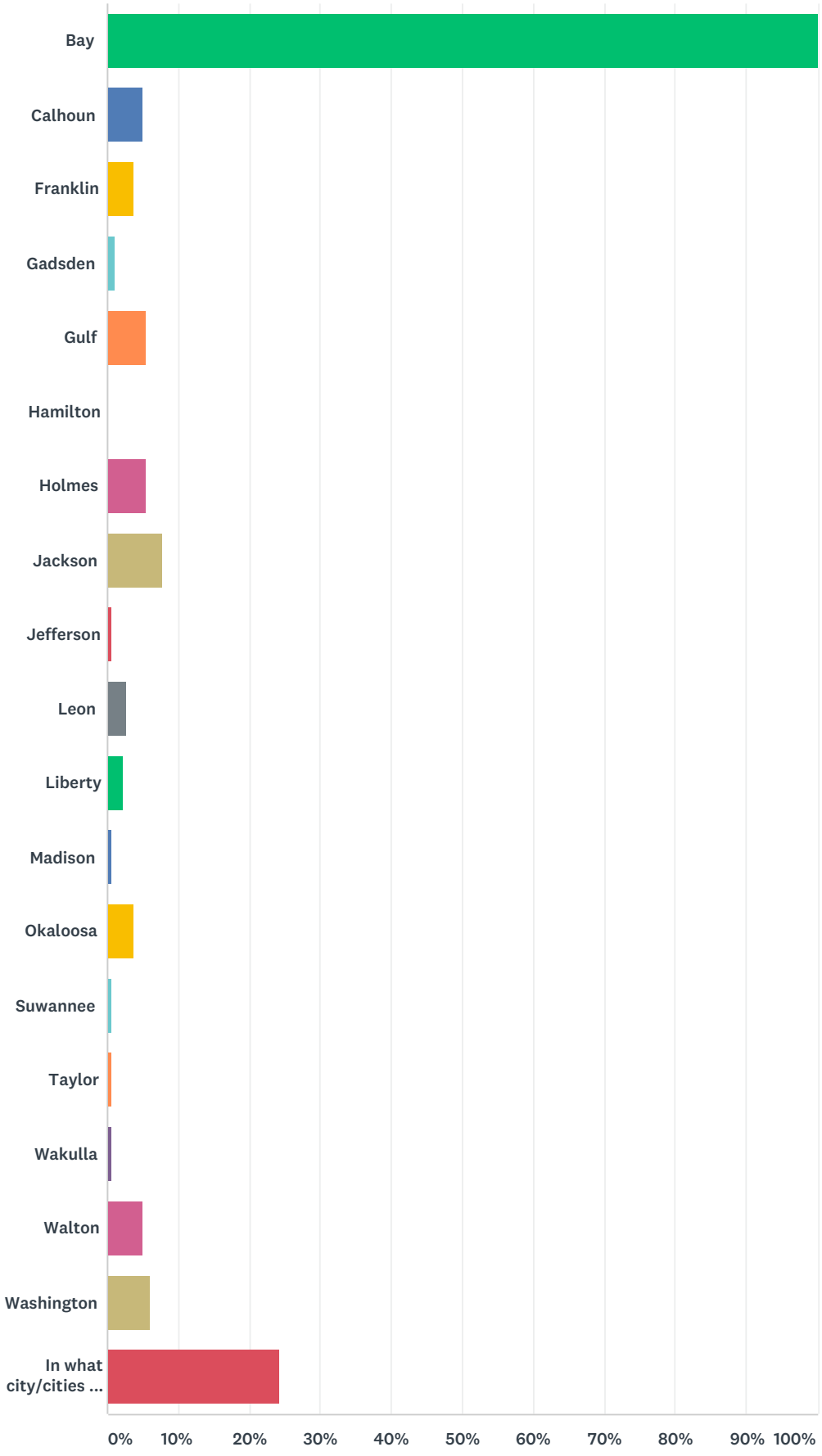
ANSWER CHOICES	RESPONSES	
Agriculture	0.55%	1
Aquaculture/fisheries	0.55%	1
Aviation/aerospace	0.55%	1
Communications/IT	2.20%	4
Construction	7.69%	14
Defense	2.20%	4
Distribution/logistics	0.55%	1
Financial/shared services	6.59%	12
Forestry/timber products	0.00%	0
Grocery/food products	1.65%	3
Health/social services	12.64%	23
Hospitality (e.g., lodging, attractions)	4.95%	9
Manufacturing	4.95%	9
Real estate	9.89%	18
Restaurant	6.04%	11
Retail	8.79%	16
Services (e.g., consulting, legal, etc.)	16.48%	30
Transportation	3.85%	7
Utilities	1.10%	2
Wholesale	1.10%	2
Other (please specify)	24.18%	44
Total Respondents: 182		

Q2 Please describe the specific goods and/or services your business provides.

Answered: 180 Skipped: 2

Q3 In which county is this business based?

Answered: 182 Skipped: 0

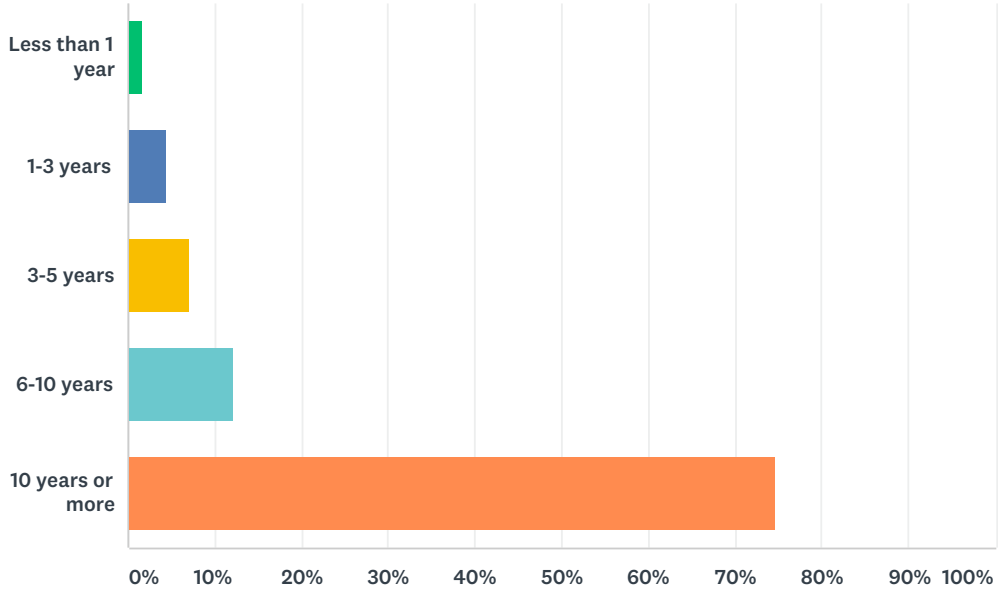


ANSWER CHOICES	RESPONSES

Bay	100.00%	182
Calhoun	4.95%	9
Franklin	3.85%	7
Gadsden	1.10%	2
Gulf	5.49%	10
Hamilton	0.00%	0
Holmes	5.49%	10
Jackson	7.69%	14
Jefferson	0.55%	1
Leon	2.75%	5
Liberty	2.20%	4
Madison	0.55%	1
Okaloosa	3.85%	7
Suwannee	0.55%	1
Taylor	0.55%	1
Wakulla	0.55%	1
Walton	4.95%	9
Washington	6.04%	11
In what city/cities is it located?	24.18%	44
Total Respondents: 182		

Q4 How long has the business been operating?

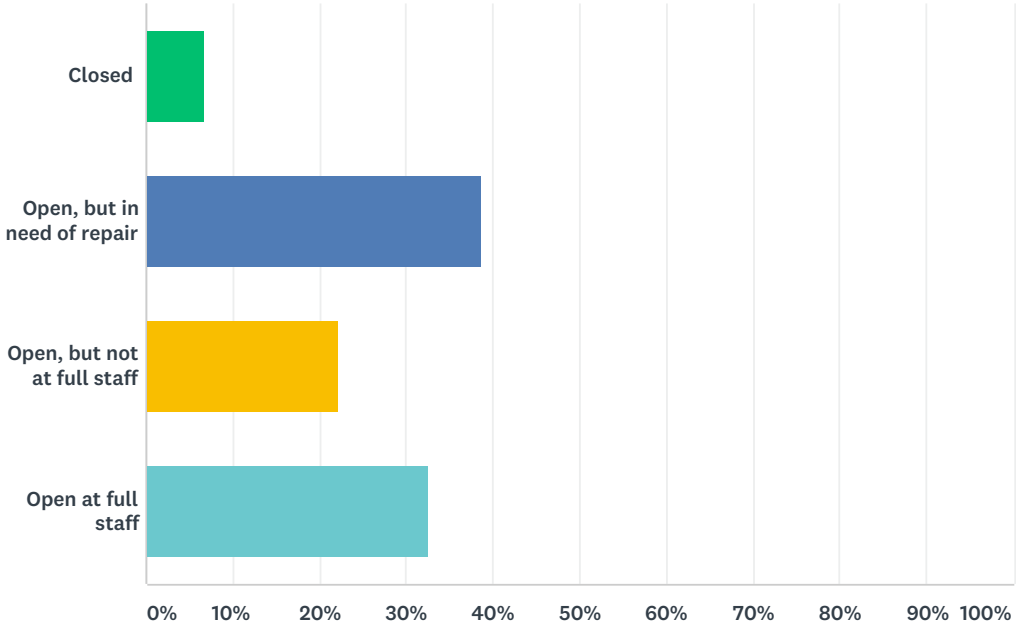
Answered: 182 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than 1 year	1.65%	3
1-3 years	4.40%	8
3-5 years	7.14%	13
6-10 years	12.09%	22
10 years or more	74.73%	136
TOTAL		182

Q5 What is the current condition of the business?

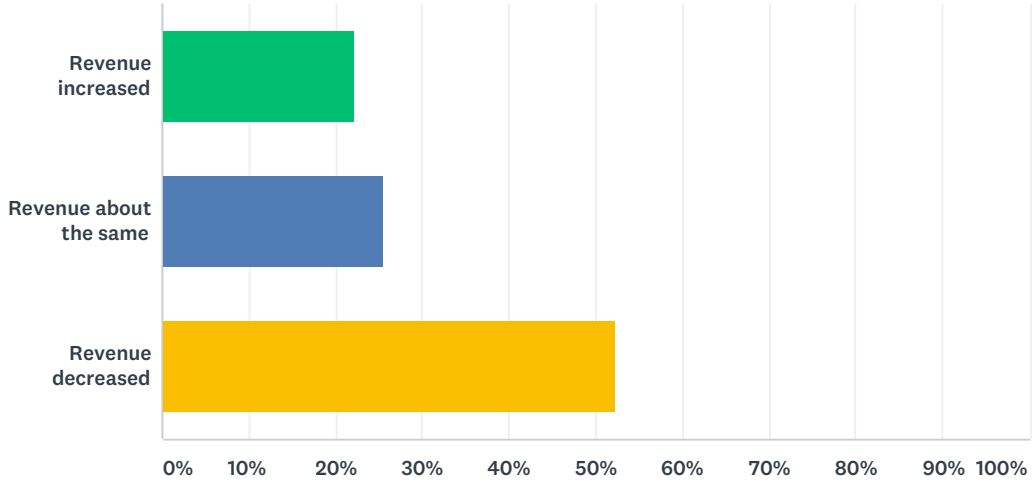
Answered: 181 Skipped: 1



ANSWER CHOICES	RESPONSES	
Closed	6.63%	12
Open, but in need of repair	38.67%	70
Open, but not at full staff	22.10%	40
Open at full staff	32.60%	59
TOTAL		181

Q6 Compared to a year ago, how is the business doing?

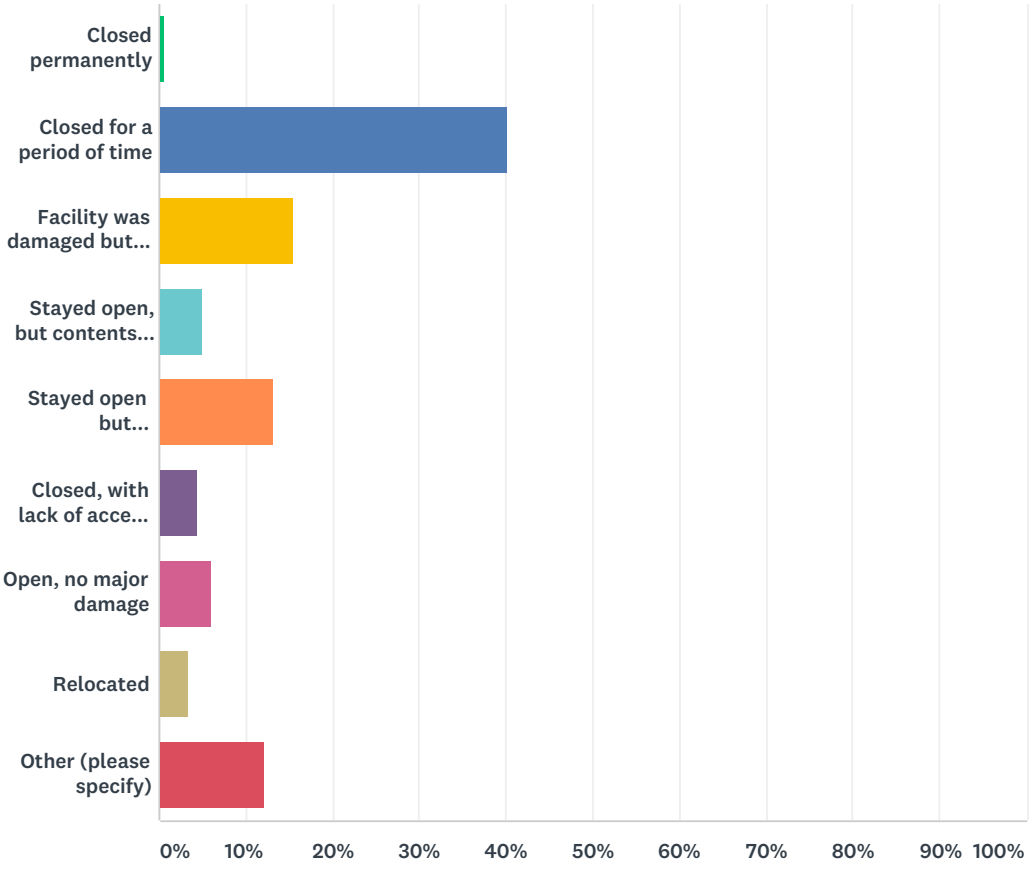
Answered: 180 Skipped: 2



ANSWER CHOICES	RESPONSES	
Revenue increased	22.22%	40
Revenue about the same	25.56%	46
Revenue decreased	52.22%	94
TOTAL		180

Q7 What was the direct or indirect impact to the business from Hurricane Michael?

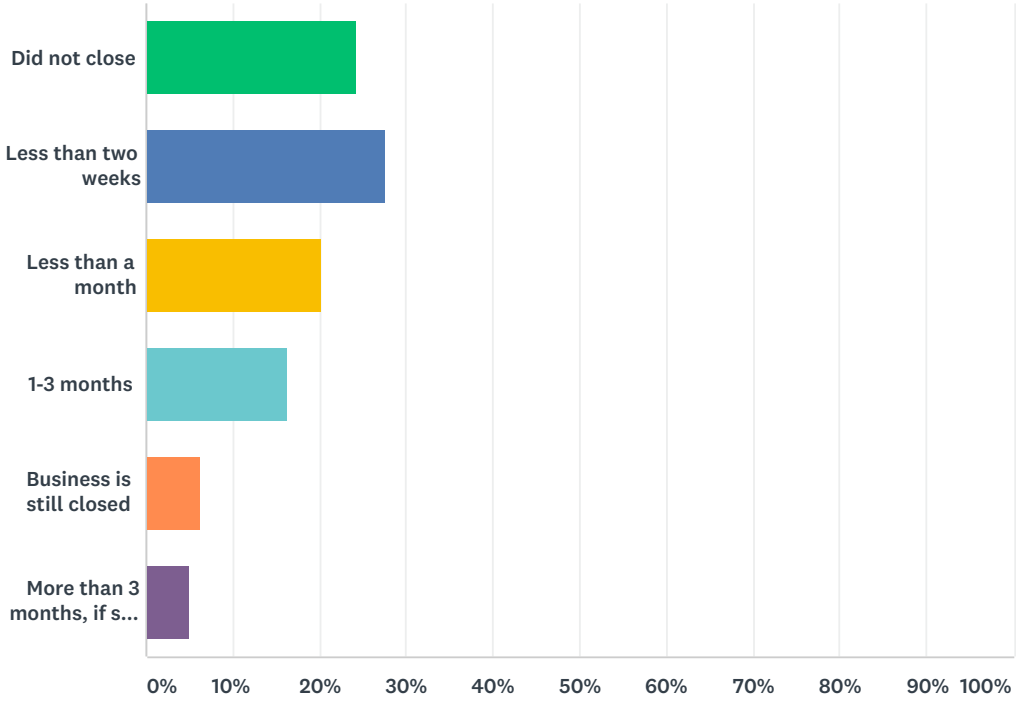
Answered: 182 Skipped: 0



ANSWER CHOICES	RESPONSES	
Closed permanently	0.55%	1
Closed for a period of time	40.11%	73
Facility was damaged but remained open	15.38%	28
Stayed open, but contents or equipment was lost	4.95%	9
Stayed open but customers/market declined	13.19%	24
Closed, with lack of access for employees, customers, or suppliers	4.40%	8
Open, no major damage	6.04%	11
Relocated	3.30%	6
Other (please specify)	12.09%	22
TOTAL		182

Q8 If it closed, how long was the business closed after the hurricane?

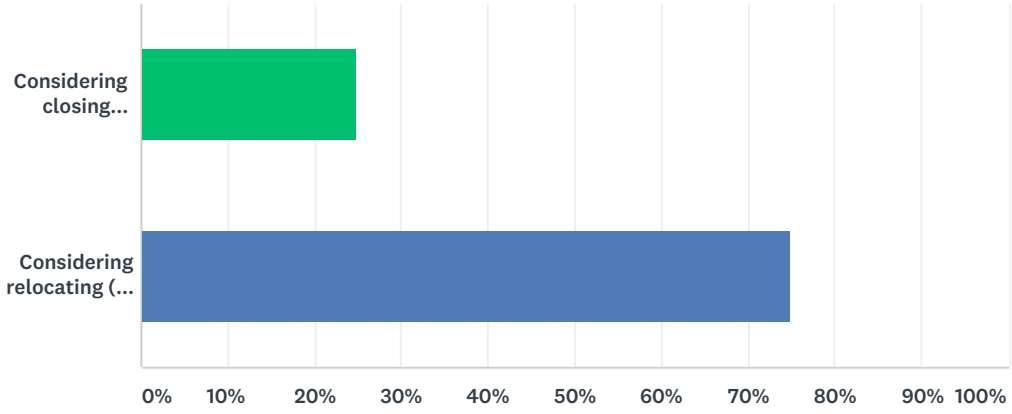
Answered: 177 Skipped: 5



ANSWER CHOICES	RESPONSES	
Did not close	24.29%	43
Less than two weeks	27.68%	49
Less than a month	20.34%	36
1-3 months	16.38%	29
Business is still closed	6.21%	11
More than 3 months, if so how long?	5.08%	9
TOTAL		177

Q9 Are you concerned your business will be forced to close permanently or relocate in the next few months?

Answered: 64 Skipped: 118



ANSWER CHOICES	RESPONSES	
Considering closing permanently	25.00%	16
Considering relocating (if so, where?)	75.00%	48
TOTAL		64

Q10 What are the top three challenges to full recovery?

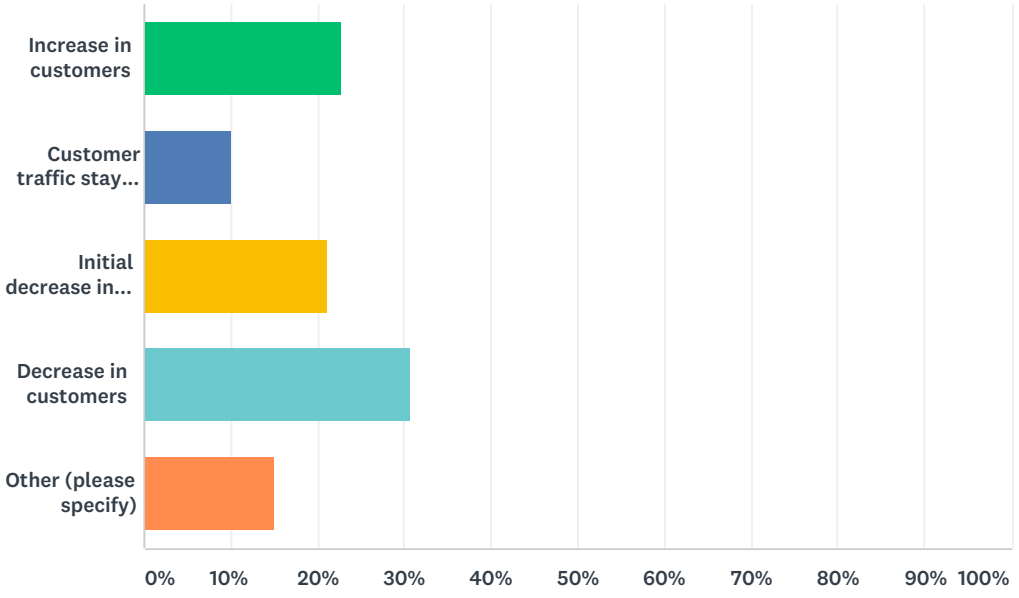
Answered: 172 Skipped: 10

Q11 If recovery has gone well, what has made that possible?

Answered: 138 Skipped: 44

Q12 Have you had any changes to your customer base since the hurricane?

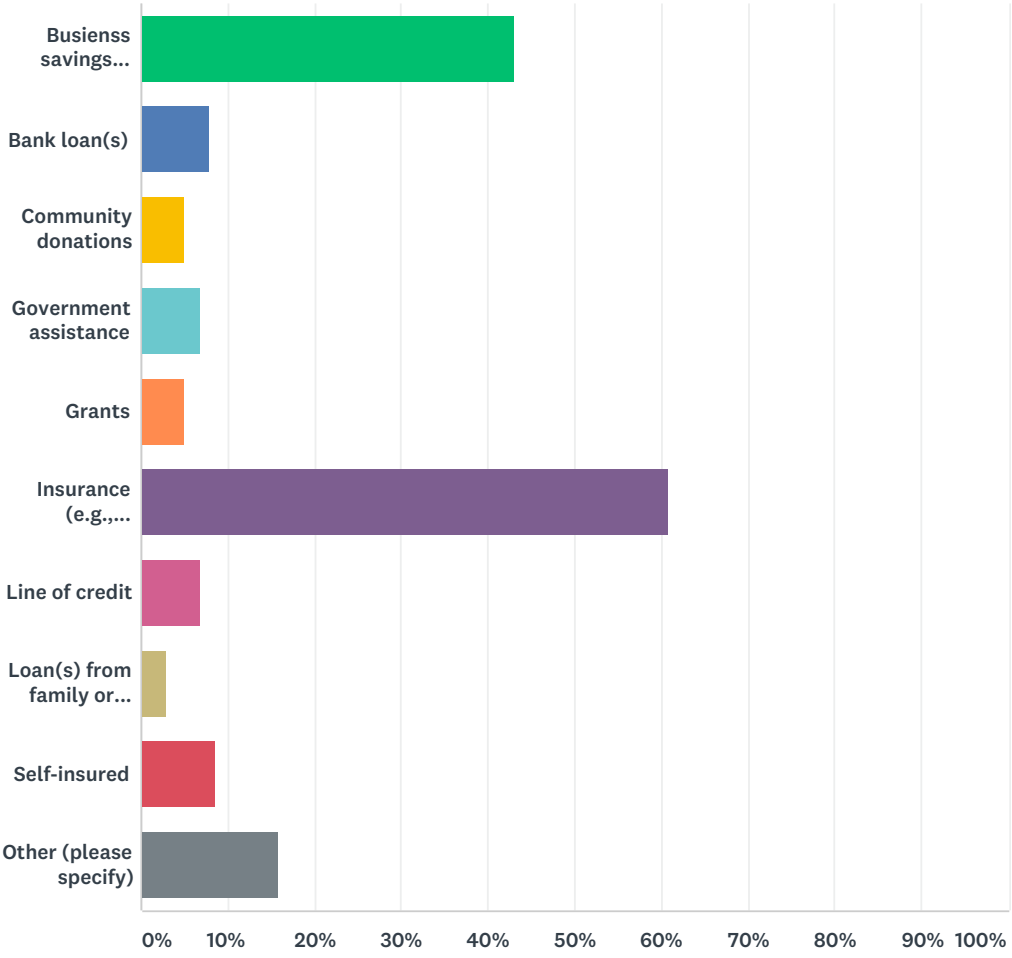
Answered: 179 Skipped: 3



ANSWER CHOICES	RESPONSES	
Increase in customers	22.91%	41
Customer traffic stayed steady	10.06%	18
Initial decrease in customers but now returning	21.23%	38
Decrease in customers	30.73%	55
Other (please specify)	15.08%	27
TOTAL		179

Q13 How are you financing repairs or restitution of the business?

Answered: 176 Skipped: 6



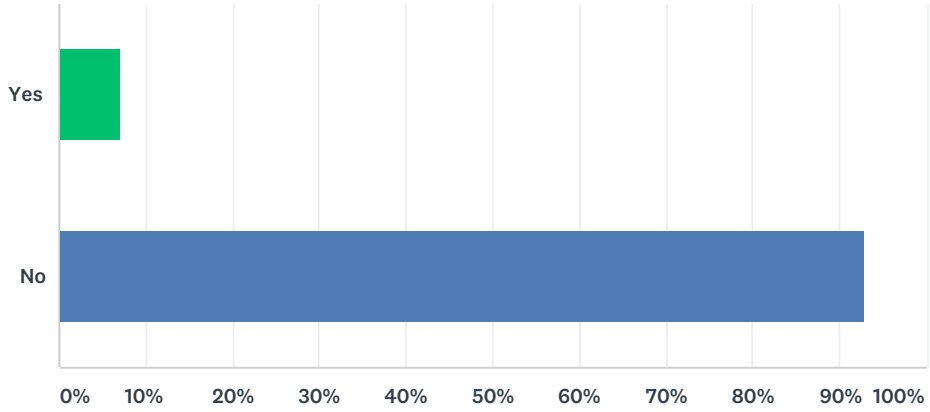
ANSWER CHOICES	RESPONSES	
Busienss savings (retained earnings)	43.18%	76
Bank loan(s)	7.95%	14
Community donations	5.11%	9
Government assistance	6.82%	12
Grants	5.11%	9
Insurance (e.g., property, business interruption, flood)	60.80%	107
Line of credit	6.82%	12
Loan(s) from family or friends	2.84%	5
Self-insured	8.52%	15
Other (please specify)	15.91%	28
Total Respondents: 176		

Q14 How many people worked for the business before the hurricane and right now? What caused the change in employees? (e.g., loss of workforce housing, loss of transportation)

Answered: 175 Skipped: 7

Q15 Would you like (free) business counseling to assist in determining next steps?

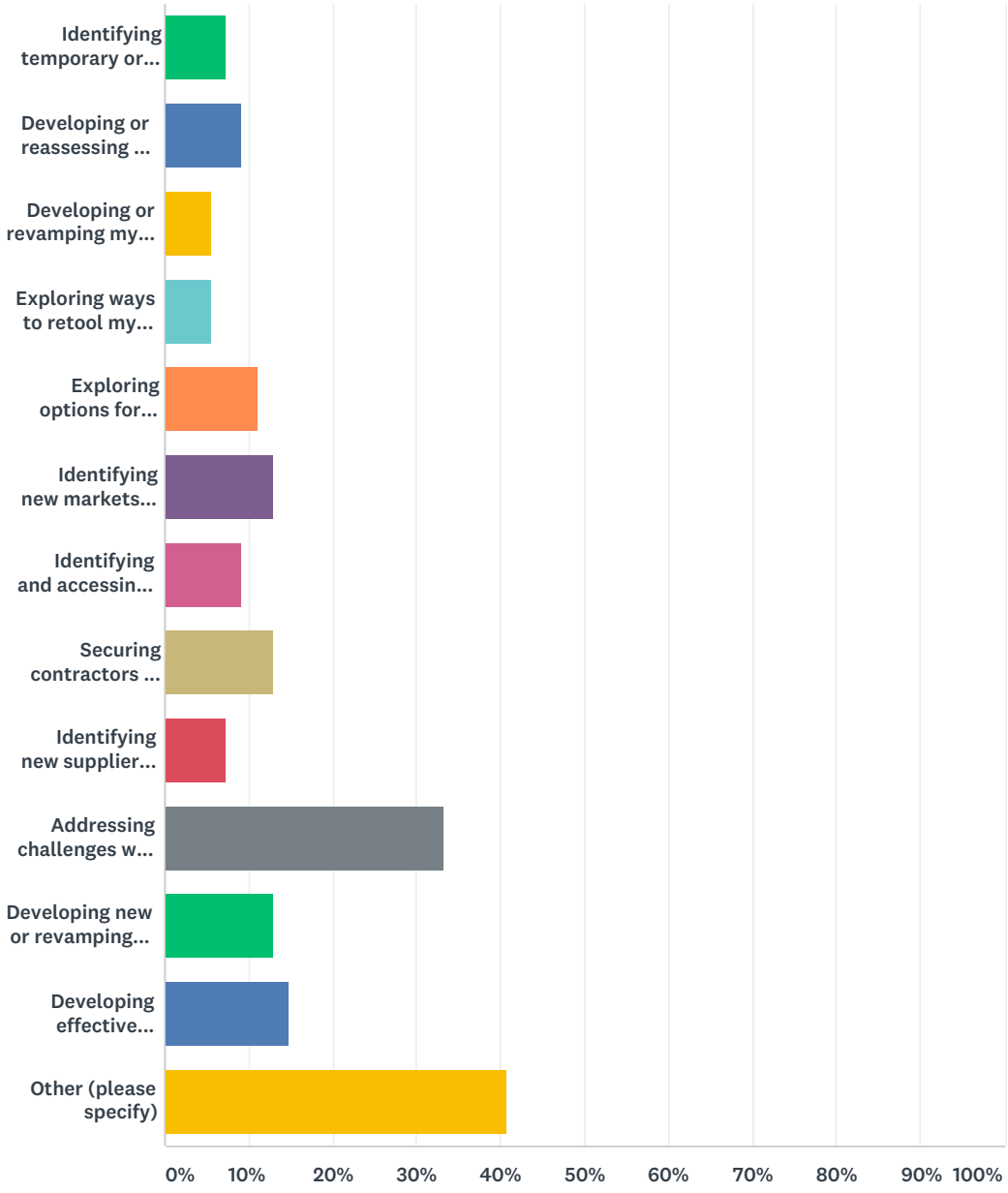
Answered: 181 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	7.18%	13
No	92.82%	168
TOTAL		181

Q16 If you would like a referral to business counseling services, please indicate all topics you would like to cover.

Answered: 54 Skipped: 128

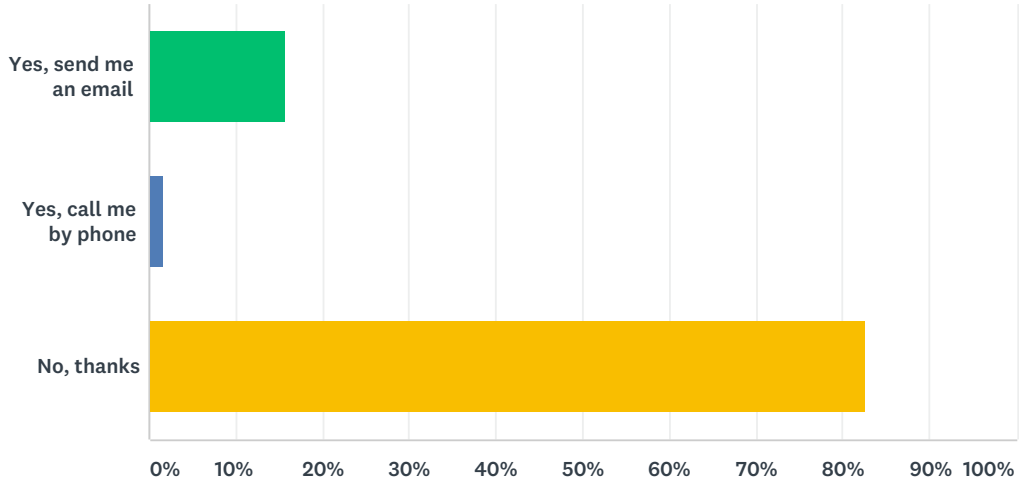


ANSWER CHOICES	RESPONSES	
Identifying temporary or new location/market for my business	7.41%	4
Developing or reassessing my business plan	9.26%	5
Developing or revamping my business continuity plan	5.56%	3
Exploring ways to retool my current products/services	5.56%	3
Exploring options for restructuring or reorganization my business	11.11%	6

Identifying new markets (domestic or export) for my products/services	12.96%	7
Identifying and accessing capital	9.26%	5
Securing contractors to assist with rebuilding	12.96%	7
Identifying new suppliers or customers	7.41%	4
Addressing challenges with retaining current and recruiting new employees	33.33%	18
Developing new or revamping current marketing/branding plan	12.96%	7
Developing effective customer contact system	14.81%	8
Other (please specify)	40.74%	22
Total Respondents: 54		

Q17 Would you like to be contacted by your local economic development office or another service provider?

Answered: 178 Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes, send me an email	15.73%	28
Yes, call me by phone	1.69%	3
No, thanks	82.58%	147
TOTAL		178