2019 ANNUAL REPORT

Chief Resilience Officer
EXECUTIVE OFFICE OF THE GOVERNOR

The Honorable Ron DeSantis
Governor of Florida
Governor Ron DeSantis' bold vision to make Florida communities and infrastructure more resilient and fortify Florida's pathway to continued prosperity is reflected in the creation of Florida's first Chief Resilience Officer (CRO) position in August 2019. The CRO reports to the Executive Office of the Governor and works in partnership with the Florida Department of Environmental Protection, the Florida Department of Transportation, the Florida Division of Emergency Management, the Florida Department of Agriculture and Consumer Services, the Florida Fish and Wildlife Conservation Commission and the Florida Department of Economic Opportunity, in addition to local communities and stakeholders.

**CRO ROLE**

1. Develop strategic resilience goals for protecting coastal communities and fortifying infrastructure for continued state prosperity
2. Coordinate statewide policy to prepare for impending environmental, physical, and economic challenges
3. Advocate for high-priority resilience initiatives throughout the state in order to better integrate resilience planning at all levels
4. Partner with state agencies (FDEP, FDOT, FDCEM, FDCS, FWC, FDEO) federal entities, local communities and stakeholders

**OUTREACH**

Since the position was appointed in August 2019, the CRO has had over 50 key engagements with both public and private stakeholders at the local, regional, state, national and international levels. Through these efforts, the CRO has positioned Florida as a leader for innovation and investment and promoted the Governor's agenda across the state and the country. The CRO has also established relationships where continued communications and engagements will take place over the next year.
FLORIDA RESILIENCE TAKING SHAPE

$3.2 Billion
Funding has been allocated for resilience projects by several Florida departments including FDEP, FDOT, FDEM, FWC, and FDEO.

AAA Rating
Florida bond rating has been reaffirmed by S&P Global Ratings as a result of Governor DeSantis environmental initiatives, including appointing the state’s first Chief Resilience Officer.

Florida Department Resilience Funding

- 2.3B
  - FDEP
- 313M
  - FWC
- 260M
  - Florida Fish & Wildlife Commission
- 177M
  - Department of Economic Opportunity
- 150M
  - Florida Fish & Wildlife Commission

A FEW HIGHLIGHTS

State Agency

- Department of Environmental Protection
  - Florida Resilient Coastal Areas Action Plan Guidebook
- Department of Transportation
  - Resilience Primer: Emergency Shelter Use, Storm Vulnerability Assessment
- Division of Emergency Management
  - Statewide Regional Evaluation Study, FloridaKoRner.Biz

Regional

- East Central Florida Regional Planning Council
  - East Central Florida Resilience Collaborative
- Northeast Florida Regional Planning Council
  - Resilient First Coast

Local

- City of Sarasota
  - Climate Change Vulnerability Assessment and Adaptation Plan
- Monroe County
  - Flood Mitigation and Sea Level Rise Resilience Program
- Hallandale Beach
  - Infrastructure standards to withstand 34” of SLR by 2060

Other

- National Renewable Energy Laboratory
  - Florida statewide renewable energy plan, Tyndall Air Force Base Resilience Plan
- University of South Florida
  - Resilient Florida Planning, Policy & Practice workshop for Florida's resilience community
- Florida Chamber of Commerce
  - Florida 2030

- Southeast Florida Regional Climate Compact
  - United Sea Level Rise Projections for Southeast Florida
- Florida Water Management Districts
  - Sea Level Rise Strategy
- City of Miami & Miami-Dade County
  - Resilient305 Strategy
- Leon County
  - Capital Area Sustainability Compact

US Army Corps of Engineers

- Florida Resilience Program for sand dune restoration: South Atlantic Coastal Study
- Florida Ports Council
  - Florida Ports Council Seaport Resilience Report
ASSessment

Sea levels are rising, inundating communities, compromising housing & infrastructure, and businesses are paying costly damages. This trajectory will only continue.

STATEWIDE STRATEGY
- Efforts are split, leaving some behind. Florida needs a statewide strategy.

INFRASTRUCTURE STANDARDS
- Infrastructure standards were set decades ago. We can’t design based on old weather patterns.

ONE-STOP RESILIENCE SHOP
- Communities are overwhelmed and need one place to turn for guidance.

CLIMATE VULNERABILITIES
- Climate conditions are going to continue to pose a threat. Are we truly prepared?

Looking Ahead

Goals

2020
Synthesize research, report to Governor & share across agencies

2021
Build consensus on projections & strategies

2030
All Florida residents protected by resiliency plans

Next 12 Months Initiatives

COLLABORATION
CRO will lead collaboration efforts to develop a strategic communications plan, establish an interagency advisory council, engage private industry, create internal and external engagement plans, and coordinate with stakeholders on data, local needs, research, business solutions, and build consensus on actions needed.

STATE ADVOCACY
In order for Floridians to be prepared for SLR and other climate issues, the state will need to continue to work with local agencies, and business partners to create tangible solutions towards flooding and extreme weather.

FUNDING & IMPLEMENTATION
To assist agencies and businesses throughout the state with building resilient communities and infrastructure, the CRO will identify funding and implementation actions while incentivizing resilient practices and fostering innovation.
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WHY BE RESILIENT

$26 Billion
Dollars of residential property in Florida at risk of chronic flooding by 2045.
Since 2005, Florida homes have lost $5.42 billion due to flooding.

$2.86 Trillion
Dollars of insured property in Florida vulnerable to hurricanes.
We have a trillion dollar economy to protect for continued growth.

1.5 Feet
Of sea level rise by 2030 (NOAA Extreme Scenario).
Florida has 2,555 miles of roads, 3 feet below the high tide line, at risk of flooding.

$50 Billion
Price tag for Hurricane Irma.
The last four hurricanes in Florida have been category 5.
I. RESPONSIBILITIES

Throughout Florida communities are scrambling to address Sea Level Rise (SLR), intense storms, aging infrastructure and an increase in impermeable surfaces. These conditions mean more flooding damaging homes and businesses, compromising mobility, and deteriorating the Floridian quality of life. The state must help communities adapt and provide protection from these impending conditions. Current infrastructure standards are outdated and are no longer functional for facing the climate’s unprecedented constraints.

This challenge requires coordination and careful planning with local, state, and federal stakeholders. To lead this charge Governor DeSantis created the state’s first Chief Resilience Officer (CRO) position. Florida is one of the first states to create a CRO position at the state level. The CRO leads resilience efforts in collaboration with six Florida departments including the Florida Department of Environmental Protection, the Florida Department of Transportation, the Florida Division of Emergency Management, the Florida Department of Agriculture and Consumer Services, the Florida Fish and Wildlife Conservation Commission and the Florida Department of Economic Opportunity, in addition to local communities and stakeholders. This framework was put into action in the position’s first month as Hurricane Dorian slammed the east coast of Florida, compelling the CRO to immediately start collaboration with agencies including 29 local CROs throughout the state.
**STRATEGIZE**

*Develop strategic resilience goals for protecting coastal communities and fortifying infrastructure for continued state prosperity*

Catalyze private and federal investment for our state to ensure we have the capital necessary to tackle the problems ahead. Must have consistent and sustainable funding.

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**COORDINATE**

*Coordinate stakeholder perspectives, develop interdisciplinary ecosystem and human resilience strategies*

Create a more efficient government that encourages resilient actions by cutting red tape across departments, getting projects moving and putting infrastructure on the ground.

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**ADVOCATE**

*Advocate for high priority resilience outcomes throughout the state in order to better integrate resilience planning at all levels*

Develop best practices across all agencies and departments to ensure consistency and effectiveness in the way Florida addresses climate threats.

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**PARTNER**

*Partner with state agencies (FDEP, FDOT, FDEM, FDACS, FWC, DEO), local communities and stakeholders*

Convene the state’s best and brightest minds and ideas, and foster an environment which accelerates resilient actions and promotes innovation.
**CHIEF RESILIENCE OFFICER GOALS**

**Goal I**
**Inventory and Continue Our Successes**

**Understand where we are today so that Florida can lead the nation for tomorrow.**

- Develop relationships with each agency, identify the appropriate point person, and understand and inventory how each agency/department are currently incorporating resilience in their work.
- Building on the successes of the Office of Resilience and Coastal Protection within the Department of Environmental Protection, understand and inventory what local governments are doing to address the challenges of flooding and SLR; identify where additional assistance is necessary, and determine how best to utilize state resources to assist our local partners.
- Continue the Governor’s landmark commitment to cut red tape by identifying areas in which regulation is stalling resilience projects that protect communities and their residents (explore the concept of a Resilience “De-reg-athon”), and improve coordination across agencies on multi-jurisdictional projects. Incentivize pilot/demo projects.
- Synthesize findings of state, regional, and local research, and report back to the Governor and share across agencies by July 2020.

**Goal II**
**Protecting Property Values by Building Infrastructure and Creating Jobs**

**Targeted infrastructure investment will protect Florida property and create well-paying jobs.**

- Identify and create opportunities for improving regional flood protection systems, and act as the coordinator between federal, state, regional, and local partners to expedite needed improvements.
- In conversation with local partners, identify the top 10 biggest vulnerabilities across Florida and the corresponding projects, and create a Center of Excellence at the CRO office to coordinate, fast track, and catalyze federal and private sector resources.
- Survey and examine existing funding for stormwater projects, determine state needs, and examine ways to leverage innovative funding opportunities.
- Work with the Department of Environmental Protection to identify natural infrastructure projects across the state that improved community resilience, and build a repository of such case studies to share with local and regional partners.
GOAL III
Ensuring a Strong Economy and Military

COMMUNITIES THAT INVEST IN ADAPTATION NOT ONLY SURVIVE BUT THRIVE.

- Getting boots on the ground, work with a few select cities to identify challenges, determine needs, and understand how the state can better support our local partners to better protect their communities from flooding.

- Work with the Florida Defense Support Task Force to determine the vulnerabilities of our military installations to flooding and SLR, and how the state can partner to improve military readiness from Key West to Cape Canaveral to Pensacola, and everywhere in between.

- Using our local and regional partners, develop case studies that clearly demonstrate the benefits of proactively investing in infrastructure that considers the reality of stronger storms and more frequent flooding, and how those measures produce demonstrable financial impacts such as improved municipal bond ratings.

- Stake Florida’s claim as the startup and technology hub for solutions to flooding caused by SLR by working with state agencies that promote economic development, corporate relocations, and high-paying jobs to bring innovative products to market faster and seek innovation where there are clear gaps for solutions in the market.

GOAL IV
Building Blocks for a Future-Focused Florida

USE THE BEST DATA AND INNOVATION TO UNLOCK FLORIDA’S POTENTIAL FOR ADAPTATION.

- Work across agencies/departments to develop a long term strategy for the Chief Resilience Officer and their office that makes Florida the world’s standard for flood resilience, as has already been done for wind resilience.

- Build on initial successes and create a roadmap to further encourage innovation and private investments in infrastructure and solutions that better prepare Florida for flooding and SLR.

- Create best practices for open and transparent government data that allows local and regional partners to leverage the power of shared resources, cutting duplicative efforts and ensuring data is of the highest quality.

- Develop an Adaptation Master Plan that gives confidence to the market and lays a clear roadmap for needed infrastructure investments for the next 10, 20 and 30 years.

- Partner with the Office of insurance Regulation to continue to encourage a robust private flood market that incentivizes resilient actions that reduce flood risk and exposure.
II. ACTIVITIES

The first CRO assignments are to inventory Florida resilience efforts and network with pioneers involved in climate change work. The CRO has connected with stakeholders at every level including state and federal departments, national nonprofits, foundations, and research institutions, private companies, professional associations, military personal and various local and regional agencies.

Also, in representing the Executive Office of the Governor, the CRO has conducted several presentations, participated in speaking engagements, and has attended many conferences related to resilience. Refer to the CRO Calendar of Activities for a snapshot of 2019 key engagements.

Through these efforts, the CRO has gained insight into Florida's progress on resiliency. The CRO has also established relationships where continue communications and engagements will take place over the next year. Highlights of the various efforts including state collaborations, federal coordination, regional planning initiatives, local briefings, and other engagements can be found in the State of Resilience section.
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<tr>
<th>Event</th>
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<tr>
<td>USF Resilience Workshop</td>
<td>8/8/2019</td>
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<td>Embry Riddle Resilience</td>
<td>8/27/2019</td>
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<td>British Government</td>
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<td>Northeast Florida Planning Council</td>
<td>9/9-10/2019</td>
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<td>CLEO Institute</td>
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<td>Florida American Planning Association Conference</td>
<td>9/11/2019</td>
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<td>US Green Building Council</td>
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<td>Environmental Protection Board Conference</td>
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<td>City of Orlando</td>
<td>9/20/2019</td>
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<td>Steering Committee FL Oceans and Coasts Review</td>
<td>9/23/2019</td>
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<td>Stetson University Water Resilience Program</td>
<td>9/25/2019</td>
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<td>Sea Grant Review</td>
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<td>Everglades Foundation</td>
<td>9/30/2019 - 10/4/2019</td>
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<td>State Emergency Response Team</td>
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<td>Audubon Florida Climate</td>
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<td>FEMA Dep Administrator for Resilience</td>
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<td>White House Resilience Director</td>
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<td>American Flood Coalition</td>
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<td>American Flood Coalition Mayor’s Summit</td>
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<td>Volusia County Chamber</td>
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<td>Enterprise Florida</td>
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<td>Arsht Foundation on Resiliency</td>
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<td>American Water Resources Association</td>
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<td>Georgetown University</td>
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<td>KW Summit</td>
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<tr>
<td>Southeast Florida Regional Climate Compact</td>
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<td>Florida Chamber Foundation Transportation Growth Summit</td>
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<td>Tyndall Air Force Base</td>
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Florida Department of Environmental Protection
The Florida Department of Environmental Protection (FDEP) is committed to pulling together resources for helping the coastal communities of Florida prepare for SLR and climate change. The department has several areas of practice where building natural resilience is embedded in daily operations including The Program, Florida Keys National Marine Sanctuary, National Estuarine Research Reserves, and others. Some key areas to highlight include:

**FLORIDA RESILIENT COASTLINES PROGRAM**
FDEP fosters collaboration with the coastal communities, offers technical assistance, and funding to deal with flooding, erosion, and habitat shifts. This includes the Resilient Coastlines grant program and outreach such as the Coastal Resilience Forum and the Resilient Florida Workshop.

**FLORIDA ADAPTATION HANDBOOK**
This guidebook is a tool for local government planners for the development of an adaptation plan. The document provides four steps for creating a plan and also includes best practices and resources useful to any coastal community.

**WATER MANAGEMENT DISTRICTS SLR STRATEGY**
The department has five water management districts for the administration of water resources. These districts have come together to create a SLR strategy detailing impacts to water supply, flood control, quality and natural systems.

Florida Department of Agriculture and Consumer Services
The Florida Department of Agriculture and Consumer Services (FDACS) supports and promotes Florida agriculture, protects the environment, safeguards consumers, and ensures the safety and wholesomeness of Florida food. The department promotes Florida’s 300 agricultural commodities involving 47,000 commercial farms and ranches spanning over 9.45 million acres. The industry is extremely vulnerable to the impacts of climate change and SLR and is currently researching solutions.

**Hurricane Michael caused $158 million in damages to Florida’s crops.**

FDACS recently unveiled a legislative package to help prepare the industry for climate change.

- **Climate Adaptation Research** Grant to study mitigation strategies proposed at $250,000
- **Agriculture, Energy, & Water** Grant for innovative solutions to increase resilience proposed at $10 million
- **Utility Grid Pilot Project** for grid efficiency and resiliency
Florida Department of Transportation
Florida Department of Transportation (FDOT) recognizes the risk climate events pose to mobility and has several initiatives to address this challenge. A comprehensive effort is underway to update the Florida Transportation Plan (FTP), long term transportation vision for the state, and resilience is selected as a cross cutting topic. Resilience is also a goal/objective in other strategic plans including the Freight Mobility and Trade Plan (FMTP) and the Transportation Asset Management Plan (TAMP).

RESILIENCE PRACTICE
FDOT has employed various planning efforts including a Transportation Resilience Primer as a resource, Emergency Shoulder Use for evacuations, and Severe Weather Awareness communications for alerting residents.

VULNERABILITY ASSESSMENTS
FDOT is in the process of assessing vulnerable assets and transportation systems throughout the state focusing on the Strategic Intermodal System (SIS), a high priority network of transportation facilities important to the state’s economy and mobility.

SEA LEVEL RISE SKETCH TOOL
In collaboration with Florida universities, FDOT led the development of a GIS tool used to assess the impacts of SLR to the highways in Florida. This tool provides preliminary assessment of when, where, and how much inundation facilities are expected to face.

Florida Department of Economic Opportunity
The Florida Department of Economic Opportunity (FDEO) is tasked with embedding resilience into community planning. The department’s Community Resilience Program, a partnership with FDEP, integrates adaptation into the statewide planning framework.

COMMUNITY RESILIENCE PROGRAM
Since 2011, this program provides technical assistance to coastal communities for future flooding risks. This includes encouraging best practices and investments for adaptation planning. An Adaptation Action Area Guidebook was one of the results of this effort.

LOCAL COMPREHENSIVE PLANNING SUPPORT
In the Coastal Management Element of local comprehensive plans, governments are required to address inappropriate and unsafe development. This considers principles that reduce flood risk from a number of sources including SLR.

FDEO & ENTERPRISE FLORIDA
Enterprise Florida is a public private partnership connected to FDEO and is the state’s principle economic development organization. Resilience is included in the Florida Strategic Plan for Economic Development 2018-2023.

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)
Florida has been allocated funding under CDBG Mitigation Program. The DEO is creating a State Action Plan to use the over $600 million in federal mitigation funds. The funds will be used for mitigation projects in areas that were impacted by Hurricanes Hermine, Matthew, Irma, and Michael. DEO will submit its plan to HUD by February 2020.

Florida has also been allocated funds under the CDBG Disaster Recovery Program. This federal funding supports long-term disaster recovery and is used to help with housing, economic development, mitigation, and resilient infrastructure projects after all other assistance has been depleted.
Florida Division of Emergency Management

Florida Division of Emergency Management (FDEM) plans for and responds to natural and man-made disasters and is also the state liaison with federal and local agencies for emergencies. FDEM employs various strategies for resilience in statewide preparation, mitigation, emergency response, and recovery. The key plans which incorporate resilience are the State Hazard Mitigation Plan (SHMP) and the State Comprehensive Management Plan. Also, FDEM helps distribute various financial assistance programs for preparing and recovering from disasters.

There are several mitigation focused programs within FDEM that are helping to create a more resilient Florida. The Hazard Mitigation Grant Program is a federally funded program and is administered by FDEM. These funds become available after Presidential Major Disaster Declaration. Local government entities, private non-profit organizations, federally-recognized tribes, and the state of Florida can apply for funding for various eligible resiliency projects. These projects at the county level are determined by each county’s Local Mitigation Strategy Working Group.

The Hurricane Loss Mitigation Program (HLMP), the Flood Mitigation Assistance Program (FMA), and the Pre-Disaster Mitigation Program (PDM) are also helping to create resilience measures across the state. HLMP is a state-funded mitigation program whose goal is to minimize damages caused by hurricanes. The program, funded by the Florida Catastrophe Trust Fund, is creating retrofits on residential, commercial, and mobile homes, and funding hurricane research. PDM and FMA are federally funded and nationally competitive grants that are available to communities to assist with mitigation projects. PDM provides mitigation grant assistance for a variety of resiliency projects including wind retrofit, resilient infrastructure, and dry flood-proofing among other projects. FMA provides assistance to mitigate flood impacted structures. These programs are designed to help Floridians prepare for tomorrow.

Other notable efforts include:

**EVACUATION**
FDEM has studied evacuation conditions and routes throughout the state and compiled data analysis for each of the regional planning councils.

**RESIDENT PLANS**
Residents are encouraged to develop individual evacuation plans for families, businesses, special needs, and even for pets.

**FLORIDADISASTER.BIZ**
To help businesses remain open and recover after emergency events, FDEM offers a website and resources to support continued business operations.
Florida Fish and Wildlife Conservation Commission

The Florida Fish and Wildlife Conservation Commission (FWC) is Florida's lead state agency in addressing the impacts of climate change on fish and wildlife. Since 2008, the FWC has been engaged in the research, planning and management necessary to understand and respond to the threat of a changing climate.

CLIMATE CHANGE INITIATIVE

FWC's Climate Change Initiative envisions a future where Florida's natural systems are connected, diverse and resilient in a changing climate. The agency researches and conducts vulnerability assessments on Florida species and habitats to formulate science-based strategies.

CLIMATE CHANGE ADAPTATION FOR CONSERVATION

In 2016, the FWC completed the "Guide to Climate Change Adaptation for Conservation," to provide resources to learn about modeled climate impacts to Florida, ecological consequences to species and habitats, and adaptation strategies.

FLORIDA'S STATE WILDLIFE ACTION PLAN

The Florida's State Wildlife Action Plan is a statewide conservation plan outlining native wildlife and habitat needs. This plan includes resilience in several objectives as well as a resilience scenario planning for vulnerable species.

Other Initiatives

**FLORIDA's GDP FLOOD RISK**

15.5% of Florida's GDP is at risk due to flooding

8.37% of Florida's GDP is at risk due to flooding in the 500 year flood zone

7.15% of Florida's GDP is at risk due to flooding in the 100 year flood zone

The 2 counties with the greatest exposure, Broward and Miami-Dade, account for 60% of the total.
Florida Chamber of Commerce

Florida is now the third most populous state and by 2030 Florida's population will be 26 million, employment will be over 10 million, and annual visitors will have reached an incredible 175 million. To prepare for this continued growth and ensure Florida remains economically competitive, the Florida Chamber Foundation has released the blueprint for Florida's future — Florida 2030. This two-year research program engaged business and community leaders in each of Florida's 67 counties and identified key trends and factors that drive their regional economies. Florida 2030 is an opportunity to work together to strengthen Florida's communities, businesses and future.

The Florida 2030 effort was also a major effort for pursuing resiliency. The plan includes a goal for all Florida residents to be protected by a resiliency plan. The plan also laid out some strategies for resilience including:

**FLORIDA 2030 TARGETS & STRATEGIES**

**Florida 2030 Goal:** All Florida residents protected by resiliency plans

- Support and incentivize communities to complete vulnerability assessments and develop resilient redesign efforts.
- Identify and implement actions to improve Adaptation Action Areas throughout Florida for coastal communities at risk.
- Encourage and incentivize communities to enter the Community Rating System (CRS) program and reduce their CRS score, making them less vulnerable and reducing flood insurance costs for property owners.
- Make science-based decisions about how to protect, increase responsiveness, and invest in regions and communities at risk from extreme weather, coastal flooding, and other dangers.

SOURCE: Florida Chamber of Commerce
FLORIDA PORTS COUNCIL
SEAPORT RESILIENCE
The coastal transportation network is a network of private and public entities involving multiple modes of transportation including waterways, trucking, rail, and pipelines. Florida Seaports view resiliency planning as a long-term investment and continue to lead the nation in implementing resiliency best practices learned from past hurricanes and severe storm events. The Florida Seaports understand that actions taken now to reduce future risk will reduce the frequency or severity of storm-related supply chain interruptions.

$87.3B
Value of waterborne trade moved through Florida Seaports

900,000
Jobs supported by Florida Seaports

$117.6B
Economic value generated by Florida Seaports

KEY MESSAGES
- As a key mode in the local, state & national supply chain, it is imperative that Florida Seaports be resilient.
- Seaport resiliency is the ability to coordinate freight movement through ports in times of severe stress on existing infrastructure and operations.
- Each Florida Seaport evaluates & plans for SLR through its master planning process.
- Coordination among stakeholders is critical to seaport resiliency.
- Flexibility of personnel & communication is crucial in response to hurricanes.
- Recent years have seen the advancement of various resources to assist in resiliency planning.
US ARMY CORPS OF ENGINEERS

USACE has several areas of research dedicated to SLR. This includes tools like the Sea Level Change Calculator to help with SLR policy. Also, USACE has a building resilience program emphasizing building codes to help with community resilience.

WHITE HOUSE

The White House Resilience Directorate is a peer exchange forum for leaders engaged in the work to collaborate. The Florida program has been exchanging resilience ideas and best practices with the White House.

FEDERAL EMERGENCY MANAGEMENT AGENCY

FEMA provides assistance for communities facing disasters. Also, the Ready Campaign and a national public service announcement campaign from FEMA for preparing and responding to emergencies.

PIPAILNE & HAZARDOUS MATERIALS SAFETY ADMINISTRATION

Pipeline and Hazardous Materials Safety Administration (PHMSA) uses recent legislation “Protecting our Infrastructure of Pipelines and Enhancing Safety Act 2019” to advance resilient transport of energy.

US SMALL BUSINESS ADMINISTRATION

The US Small Business Administration (SBA) helps small business owners as the only cabinet-level federal agency fully dedicated to small business providing resources and expertise. This includes helping with emergency preparation and recovery.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA has many programs dedicated to researching SLR. The Coastal Management Agency helps with conservation, coastal zone management, and tools like the Digital Coast Sea Level Rise Viewer.

DEPARTMENT OF HOMELAND SECURITY

DHS works to make the nation more resilient to disruptions including catastrophic natural disasters. Programs include a resilience organization (insurance, mitigation, preparedness, etc.), Regional Resiliency Assessment Program, and Community Health Resilience Planning.

US DEPARTMENT OF ENERGY:

National Renewable Energy Laboratory (NREL)

NREL is a laboratory of the US Department of Energy with a technology focus for helping advance resilient energy systems. In Florida, NREL assisted with the development of the Florida Statewide Alternative Fuel Resiliency Plan, Statewide Electric Vehicle Roadmap, Tyndall AFB Resilience Plan and the Solar Innovation Network.

DISASTER ASSISTANCE IMPROVEMENT PROGRAM

Through the Disaster Assistance Improvement Program (DAIP), disaster survivors access information, support, services, and means to apply for disaster assistance.

DEPARTMENT OF DEFENSE

The DOD takes the threat of climate change seriously and has studied impacts in the 2019 Report on Effects of a Changing Climate to DOD. This effort reviewed vulnerabilities and provided information on increasing installation resilience.
Inventory of Flood-Related Federal Funding Available for Florida

Significant federal funds for resiliency available but centralized coordination needed

FEMA
- Pre-Disaster Mitigation
- Building Resilient Infrastructure and Communities
- Flood Mitigation Assistance
- Hazard Mitigation Grant Program
- Public Assistance

US Army Corps of Engineers (USACE)
- Feasibility studies and Construction Projects
- Continuing Authorities Program
- Silver Jackets
- Planning Assistance to states
- FEMA support and PL 84-99

US Department of Housing and Urban Development
- Community Development Block Grant (CDBG)
- CDBG Section 108 Loan Guarantees
- CDBG-DR

US Department of Agriculture
- Emergency Watershed Protection Program
- Floodplain Easements
- Emergency Watershed Protection Program, Recovery Assistance
- Watershed and Flood Prevention Operations Program

US Small Business Administration

US Environmental Protection Agency
- Clean Water State Revolving Loan Fund
- Water Infrastructure Finance and Innovation Act Program

US Department of Transportation
- BUILD Grant Program

National Oceanic and Atmospheric Administration
- National Coastal Resilience Fund

*Next cycle of program has not been announced
Building Resilient Infrastructure and Communities (BRIC) Fund

The BRIC program will focus on reducing the nation’s risk by funding public infrastructure projects that increase a community’s resilience before a disaster affects an area. The program will encourage community-wide mitigation of critical lifelines, prioritize resilient infrastructure and competitive, risk-informed projects, and build capacity and capability and support building code efforts. BRIC will be funded through the Disaster Relief Fund as a 6% set aside from estimated disaster grant expenditures.

BRIC CONCEPTS

Many local stakeholders in Florida are eligible for BRIC, but do not understand the program and delivering this information through the one-stop shop for resilience is a core value for the Chief Resilience Office.

Infrastructure mitigation.
BRIC incentivizes new, innovative, large infrastructure projects and continues to support flood risk reduction projects, structural and nonstructural retrofitting of existing buildings, mitigation reconstruction, structure elevation, property acquisition, and structure demolition and relocation.

Community lifelines.
Promotes essential services that communities provide like medical services, transportation, communication networks, safety and security, etc.

Hazard mitigation planning.
Hazard mitigation plans are a condition for receiving hazard mitigation assistance from FEMA which identify natural hazards, actions and activities to reduce losses and coordinate an implementation process.

Risk-informed funding.
BRIC will reexamine program delivery by defining how natural hazard risk factors can be defined and used to drive funding.

Building codes and enforcement.
Establish and carry out building code enforcement activities and implement the latest published editions of codes and standards. The legislation also enables FEMA to take into account the extent to which applicants have facilitated the adoption and enforcement of the latest published editions of codes and standards.

Capacity and capability.
Build capacity and capability in order to manage disasters and disaster mitigation through a consistent and stable stream of funding on a yearly basis. The program will address partnerships, community vulnerability, and mitigation priorities.

Expected to replace Pre-Disaster Mitigation program in 2020. For more information visit: www.fema.gov/dr4-bric.
STATE OF RESILIENCE: REGIONAL PLANNING COMPACTS

EAST CENTRAL FLORIDA RESILIENCE COLLABORATIVE
In 2018, the ECFRPC adopted a resolution to convene stakeholders across the region to develop a structure and framework for a regional resilience collaborative. Three pillars were identified under the resilience umbrella: (people) Health + Equity, (places) Build Infrastructure + Natural Environment, and (prosperity) Economic resilience. Woven throughout these pillars will be a reduction of the carbon footprint, risks and vulnerabilities utilizing emergency management, and increasing efforts toward sustainability region wide. The collaborative drafted a Memorandum of Understanding to formalize the collaborative and with 29 current partners and the list is growing.

SOUTHEAST FLORIDA REGIONAL CLIMATE COMPACT
The Compact was established in 2010 to address the challenges the south Florida region faces with SLR. The compact includes Broward, Miami-Dade, Monroe, and Palm Beach counties. The compact advances local and regional responses to the effects of climate change, flooding, SLR, and economic and social disruption. The Compact has developed a Regional Climate Action Plan with recommendations, guidelines for implementation, and best practices. Also, the Compact maintains and updates a regionally unified SLR projection. The last update identified 6 to 10 inches SLR by 2030 and 14-26 inches by 2060.

NORTHEAST FLORIDA REGIONAL COUNCIL RESILIENCE
The NEFRC established a Summary and Regional Action Plan for SLR in 2013 in collaboration with the Regional Community Institute of Northeast Florida, Inc. The plan identifies the long term planning for protecting the community’s infrastructure and assets during a cycle rising sea level. Most of these recommendations recognize the need for community leaders to include SLR in planning of land use, infrastructure placement and community sustainability. In addition, NEFRC created a Regional Resilience Exposure Tool (R2ET) to help areas understand exposure to coastal flooding. Currently, the NEFRC is working on the Resilient First Coast 3-year work plan focused on private sector engagement.

TAMPA BAY REGIONAL PLANNING COUNCIL RESILIENCE COALITION
The Tampa Bay Regional Resilience Coalition promotes collaboration on resilience planning to address extreme weather and climate risks. The effort conducts meetings and webinars to discuss local risks, priorities, and strategies advancing resiliency planning, identify best practices, innovative policies and funding opportunities in the Bay communities. To date, 29 local governments have adopted the Memorandum of Understanding, which defines that the Coalition will develop the Regional Resiliency Plan to address SLR, climate change and resiliency.
FLORIDA COMMUNITY RESILIENCE ACTIONS

STATE OF RESILIENCE: LOCAL INITIATIVES & NEEDS

CITY OF ST AUGUSTINE
The City of St. Augustine completed a vulnerability assessment of its infrastructure, made stormwater improvements, created an adaptation plan, incorporated resilience into its comprehensive plan, conducted engagement and collaboration, included resilience in its historic preservation plan and improved building standards to meet higher sea levels.

CITY OF SARASOTA
The City of Sarasota completed a vulnerability assessment of infrastructure, developed a Climate Change Vulnerability Assessment and Adaptation Plan, and is implementing living shorelines and hardening strategies such as seawalls. The City is also involved in regional collaboration and has committed to reducing emissions and encouraging clean energy.

HALLANDALE BEACH
Hallandale Beach conducted a vulnerability assessment and developed an Adaptation Plan via Florida Resilient Coastlines Program, created a Post Disaster Redevelopment Plan, conducted an energy/water audit of buildings, followed the Peril of Flood Comprehensive Plan guidelines, designed new/redevelopment infrastructure to withstand 34 inches of SLR by 2060 and 81 inches of SLR by 2100, and promoted flood insurance to areas with repetitive damages.

MONROE COUNTY
Monroe County developed a Post Disaster Recovery Strategy, Flood Mitigation and SLR Resilience Program, updated policy, is looking at elevation of roadways and stormwater along evacuation routes, moving critical infrastructure out of low lying areas, hardening shorelines for resilience, protecting water supply, elevating/replace homes, using buyout for repetitive flooding area and has made building standard improvements.

CITY OF LARGO
The City of Largo included resilience in its strategic plans, is developing a resilience organization, created a Largo Environmental Action Plan, is working to reduce emissions and encourage clean energy use, made stormwater improvements, housing hardening, and has pursued engagement with other planning entities including the Resilient Tampa Bay program.

CITY OF HOLLYWOOD
The City of Hollywood started to incorporate resilience into infrastructure planning through the application for a FDEP resilience grant for Marina Boat Ramp Resilience Improvements. The improvements in this program would make facilities meet SLR NAVD 4.5 ft.
RESILIENCE NEEDS

$ Funding

Understanding of Scientific Data

Technical Assistance

Technology

CITY OF MIAMI
The City of Miami has pursued a number of resilience initiatives including the Shores Forward Partnership, Resilient 305 Strategy, Climate Ready Strategy, Tree Masterplan, and stormwater/drainage improvement including the Miami Biscayne Bay Tidal Valves and Storm Water Improvements. Also, the City has engaged at an international level hosting the Honorable Ban Ki-Moon, former Secretary General of the United Nations, and the Honorable Cora Van Nieuwenhuizen, Netherlands Minister of Water and Infrastructure.

PALM BEACH COUNTY
Palm Beach County has included resilience in its Capital Improvement Plan, conducted a vulnerability assessment of infrastructure, is investigating green stormwater infrastructure, has met Peril of Flood compliance, and is engaged in stormwater mapping.

MIAI MI-DADE COUNTY
Miami-Dade County created an Office of Resilience & CRO position, conducted a vulnerability assessment, created a Rapid Action Plan, pursued solar energy and reduction of emissions, created the Resilient 305 Strategy, created a budget based on Rockefeller Foundation City Urban Resilience Framework, fostered communications like the #miamidadethrives campaign, and engaged in science-based planning with universities.

BROWARD COUNTY
Broward County has pursued a reduction in emissions, increase in clean energy/solar, created a Climate Action Plan; set standards for drainage infrastructure to account for 2070 conditions, used seawalls, berms to protect against tidal flooding, improved building standards including using NAVD 5 feet minimum, implemented living shorelines and developed a Countywide Resilient Infrastructure Plan.

LEON COUNTY
Leon County has focused efforts on recovery, and emergency response including emergency evacuation alerts, being designated as a Hurricane Strong Community, and supporting an Integrated Sustainability Plan, Capital Area Sustainability Compact.

CITY OF ATLANTIC BEACH
Atlantic Beach conducted a vulnerability assessment, created an Office of Resilience, developed a stormwater master plan, conducted a coastal hazard assessment, and has pursued several engagements.
STATE OF RESILIENCE:

RESILIENT FLORIDA: PLANNING, POLICY AND PRACTICE WORKSHOP | UNIVERSITY OF SOUTH FLORIDA
A statewide workshop and networking event for Florida’s resilience community of local government elected officials, planners, floodplain managers, climate change adaptation professionals, natural resource managers and park managers.

FLORIDA AUTOMATED WEATHER NETWORK TOOL | UNIVERSITY OF FLORIDA/IFAS EXTENSION
The Florida Automated Weather Network (FAWN) provides up-to-date weather information through a system of automated weather stations distributed throughout the State of Florida.

FLORIDA CLIMATE CENTER DATA | FLORIDA STATE UNIVERSITY
The Florida Climate Center (FCC) is part of three-tiered system that serves to provide climate data, information, and services for the United States.

EMBRY RIDDLE AERONAUTICAL UNIVERSITY DEGREE PROGRAM | UNIVERSITY OF SOUTH FLORIDA
Embry Riddle Aeronautical University has developed a new Master of Science in Human Security and Resilience focusing on economic security, food security, health security, environmental security, personal security, community security and political security.

INTERNATIONAL ENGAGEMENTS

BRITISH GOVERNMENT
Supported by the US Consulate in Miami, the United Kingdom (UK) and US cooperation on a resilience initiative was established. The UK also has created a Resilience strategy which can be considered as a reference.

TYNDALL AIR FORCE BASE REBUILDING RESILIENCE
Hurricane Michael destroyed the 78-year-old Air Force base where of the 484 buildings and structures on the 14.5-square-mile facility, one-half were totally destroyed or suffered sufficient damage to make repairs unfeasible.

JACKSONVILLE ENVIRONMENTAL PROTECTION BOARD UNF ENVIRONMENTAL SYMPOSIUM
The symposium provides valuable opportunities for communication and helps to further the goal of protecting our limited natural resources and improving the quality of life in Northeast Florida.

AMERICAN FLOOD COALITION MAYORS SUMMIT WASHINGTON, DC
At Florida Mayors Summit 18, mayors, representing more than 2.6 million Floridians, participated in two days of meetings with federal-level experts as well as members of the Florida Congressional delegation to discuss solutions for the urgent issue of flooding and SLR.
III. ASSESSMENT

Florida is leading the way by pioneering resilience efforts. While Florida has made significant strides in resilience, there are still challenges for the state to overcome. This section compares Florida with other states and highlights best practices, subsequently discusses the gaps, and what can be done to start effective resilience planning and action.

NATIONAL PERSPECTIVE

Chief Resilience Officers (Only FL, OR, and RI report to their Governors)
Florida has joined only a few states in appointing a CRO at the state level. The other states include:

OREGON
Created in 2015, the Oregon CRO guides seismic safety, resilience goal setting across sectors, state agency planning, preparation for improved resilience and regional collaboration.

RHODE ISLAND
The Rhode Island CRO was appointed in 2017 to drive climate resilience efforts within government and in partnership with business, academic, and nonprofit partners. Also the CRO leads the Climate Resilience Action Strategy which identifies actions for preparing for climate change.

NORTH CAROLINA
Announced in 2019, the North Carolina CRO (part of a team including two deputy CROs) will work to improve collaboration between governments, non-profits, the private sector and academia to develop solutions to enhance resilience and create safe and affordable housing.

Sea Level Rise Policy
Very few states have a formal climate resilience or adaptation plan, including a unified SLR policy. The State of California has developed a Sea Level Rise Guidance document which compiles the best available data for the state and provides step-by-step guidance on how to understand projections and prepare for SLR. The document also provides preferred coastal adaptation approaches. Other states with resilience plans include the Colorado Resilience Framework and the Louisiana Comprehensive Master Plan for a Sustainable Coast.

Local Strategies
Local governments face diverse threats and must make immediate decisions in the face of uncertain predictions. This enables communities to innovate strategies to deal with the most pressing challenges including funding while preparing for the longer-term future.

FUNDING
Local county governments find innovative ways to fund projects that enhance resiliency. For example, the nine counties that make up the San Francisco Bay area established a 20-year parcel tax that will help fund wetland restoration efforts in the Bay. A large part of the funding is going to reduce red tape and to improve timelines for permits. Charlotte, North Carolina uses locally generated funds for resilience, collecting a $1.25 a month charge from customers of a storm-water utility. It has spent $68 million to buy and demolish 400 buildings on its floodplain.

SMART PUBLIC INVESTMENT
Smart Public Investment is public funding towards smart infrastructure which helps cities optimize energy and water consumption while reducing waste and pollution. While local governments are exploring smart public investment, various programs should be considered understanding that this is a local decision. States like Louisiana have adopted the smart public Investment. In the Norfolk Vision 2100, areas were identified where protection solutions were too expensive or have unacceptable environmental impacts and stated, "where facilities cannot be reasonably protected from the impacts of rising water, they should be relocated to higher ground."
Sharing Best Practices with Florida

COMMUNITY RESILIENCE
Identify areas of vulnerable populations and engage to develop community resilience efforts and build public support for solutions.

COORDINATE WITH UTILITY PROVIDERS FOR ADAPTATION OF INFRASTRUCTURE
Pipeline and other power transmission infrastructure is important to continued operation of intermodal hubs, bascule bridges, and adaptation infrastructure like pumps installed to improve roadway/railway drainage.

IMPROVE PERMITTING EFFICIENCY TO ACCELERATE IMPLEMENTATION
Property values in flood prone areas already face decreasing values compared to those not at risk. As the tax base decreases, burdens increase and a community’s capacity to be resilient is compromised. Review regulatory processes to determine how to be more efficient and accelerate implementation.

DIVERSIFICATION OF APPROACHES
Manage flood risk with a variety of approaches including hardening, mitigation, adaptation, preparation, response, and recovery. Engage local communities in the decision making process.

INFORM BUYERS OF COASTAL HAZARDS TO REAL ESTATE PROPERTIES
Require coastal flooding disclosures for real estate transactions to spread public awareness about SLR and allow Floridians to make decisions about the risks of purchasing coastal property.

IDENTIFY THREATENED AREAS FOR ADAPTIVE APPROACHES TO FLOODING AND EROSION
Communities and areas where erosion and flooding continue to damage property allow for phased adaptive strategies buying back property and allowing natural defenses to build back up like coastal wetlands, mangroves, and sand dunes.

ROBUST PUBLIC ENGAGEMENT AND AWARENESS ON SLR RISKS
Require that state-funded adaptation plans and projects include robust public engagement efforts to help develop societal awareness about SLR, build acceptance for adaptation steps, and ensure the needs of vulnerable communities are addressed. Encourage similar regional and local engagement on associated projects.
LOCAL SLR STEPS

01 → Conduct Vulnerability Assessment
Develop understanding of how SLR might affect the local jurisdiction. Model various SLR inundation scenarios and assess the potential exposure and impacts to key assets.

02 → Develop Adaptation Plan
Based on assessed vulnerabilities, determine specific strategies that can be undertaken to reduce the amount of risk and damage the community will experience from SLR.

03 → Develop Detailed Projects Plans & Policies
Develop specific implementation plans for adaptation projects including engineering design, environmental permitting, costs, funding sources, schedule, and anticipated performance measures. Research and draft new policies and solicit public feedback.

04 → Implement Adaptation Project & Policies
Construct projects. Adopt and enforce policies.

05 → Monitor & Evaluate Effectiveness of Projects & Policies
Conduct multiyear monitoring to assess how well projects and policies are meeting anticipated objectives as conditions change and whether modifications may be change necessary to maintain or improve outcomes.
"To truly tackle the challenges of flooding and sea level rise, we need more elected leaders to take bold and proactive actions to protect their communities."

MELISSA ROBERTS, EXECUTIVE DIRECTOR
AMERICAN FLOOD COALITION
August 2019

FLORIDA PROGRESS TOWARD RESILIENCE

Hurricane Evacuation
Florida officials take evacuation of the population very seriously during hurricane preparation. The state has several agencies with strategies to mobilize the population and also innovative solutions for having them do so rapidly, for example the Emergency Shoulder Use.

Flooding/Sea Level Rise
Florida officials throughout the state, are studying the impacts of SLR on coastal communities and offering technical/funding assistance through DEP and DEO programs.

Vulnerability Assessments
Several Florida communities and agencies have conducted vulnerability assessments of infrastructure to determine how SLR will impact critical assets.

Local Collaboration
Various regions and localities along the coasts have collaborated on policy and planning for adaptation.

Recovery
Recovery after disasters requires support at all levels and Florida has demonstrated this commitment with the aftermath of the recent storms. For example, $1 billion was awarded by FDEM for hurricane recovery, $28 million was invested in northwest Florida within one year from Hurricane Michael, and $1.2 million is dedicated to further study evacuations.
**FLORIDA STATE UNIVERSITY: BRACE**

The Florida Building Resilience Against Climate Effects (BRACE) Program at FSU works to improve the ability of the public health sector to respond to the health effects of climate change by incorporating the best available science into routine public health practice. BRACE Program staff work with many partners within the DOH, other state agencies, climatologists, emergency managers, university researchers, non-profits, and planners to understand the state’s health vulnerabilities associated with climate.

**FREIGHT MOBILITY AND TRADE PLAN (FMTP)**

FDOT’s Freight and Multimodal Operations Office publishes the FMTP, a comprehensive plan for freight transportation facilities critical to the state’s economic growth. To support the FTP goal for resilience, the FMTP conducted a resilience scenario planning exercise to ensure that freight infrastructure can withstand disruption. A key recommendation is to build adequate redundancies into supply chains to address disruptions and risks and to harden infrastructure.
Common Themes Around Florida

AFFORDABLE HOUSING
An often unnoticed aspect of resilience is the availability of affordable housing, especially after disasters occur. For example as a result of Hurricane Maria, 20,000 Puerto Ricans migrated to Florida. While Florida assisted this community, it also realized the state was limited in affordable housing options. As climate change occurs within and around the state, these “climate refugees” will continue to need housing options. This is in addition to other socially vulnerable populations facing adaptation risks from SLR and climate changes.

SEPTIC TANKS
According to the Florida Department of Health, there are an estimated 2.6 million septic systems in operation in Florida representing 12 percent of the United States’ septic systems. Inland flooding inflicts strain on infrastructure and piping systems and if housing is to be elevated, then septic systems will be threatened. Florida is in need of a strategic resilience plan for developing solutions for septic systems and possible transitions to other options.

BUSINESS ENGAGEMENT
Coastal community businesses help sustain many Florida industries, including the top economic engine of tourism. These industries are not being adequately included in the essential SLR conversations such as business adaptation and risk mitigation. Business owners are in need of understanding what measures should be taken for making Florida resilient and what their roles will be in the process. The Florida Chamber and Enterprise Florida can be key partners in helping to better engage the business community in resilience conversations.
WHAT TO DO ABOUT IT

Florida resilience is taking shape throughout the state but efforts are disjointed. Geographic regions face various threats and need solutions unique to the communities and culture of their areas. A possible approach could be the establishment of Florida Resilience Districts. How to establish the boundaries of such districts will take collaboration.

An option is to take advantage of what regional planning communities have already started to do, including the Southeast Florida Regional Climate Change Compact, East Central Florida Resilience Collaborative, and the Northeast Florida Regional Planning Council Resilient First Coast. These efforts focus on addressing policy and actions geared toward preparing for future conditions. Other planning councils have started conversations about creating similar agreements and some agencies seem in need of guidance.

Opportunity lies in leveraging the efforts of water management districts. The water management districts have developed a Sea Level Rise strategy for addressing the impacts to Florida's water systems. Based around the natural water systems and utilities, the boundaries for these districts are broader and can also be considered.

This regional scale to resilience planning can help the state accelerate solutions. However, this discussion must be flexible. For example, the SFRCCC includes the South Florida Regional Planning Council boundaries in addition to Palm Beach County. Similar frameworks can be worked out based on each region's needs.
IV. LOOKING AHEAD

Over the next 12 months the CRO will advance resilience on all fronts. Florida’s coastal communities and regions do not have time to waste and need a partners at the highest levels to help manage and prepare against impending threats. The CRO will continue to unify Florida, build consensus around resilience, develop tactical and strategic plans to address both immediate and long-term needs, and identify funding and implementation strategies for resilience projects while leveraging technology and innovation.
COLLABORATION

Communication Plan

CONSENSUS
Florida needs to be unified on critical climate topics, specifically SLR projections for the state. This includes the development of a resilience vision to guide planning. To assist with understanding, a climate change data dictionary can be created.

INTERAGENCY ADVISORY COUNCIL
State agencies should be allied in the fight against climate threats through the development of an Interagency Advisory Council incorporating FDEP, FDOT, FDEM, FDACS, FWC, FDEO, and collaborating with other FL agencies.

INDUSTRY ENGAGEMENT
The business community voice is essential to the effectiveness of this effort. The CRO will work with the Florida Chamber of Commerce and Enterprise Florida to determine ways for resilience to crystallize in the business environment.

INTERNAL MEDIA PLAN
Resilience must become part of the daily operations of all agencies. To foster this initiative, a robust media plan should be employed including e-newsletters, website, social media, video, podcasts, and others.

EXTERNAL WORKING GROUP
To ensure officials are on the same page as the public, a cross-sectoral external working group for coordinating and exchanging information will be established.

PUBLIC AWARENESS
Communities should not feel they are alone in this fight. A plan for updating and educating the public on impending impacts and the state’s efforts will be developed.

Enhanced Coordination

DATA EXCHANGE
Resilience data collection and synthetization will be critical to understanding local needs and regional implications of SLR. A data exchange plan and platform will be established to foster this engagement.

LOCAL NEEDS
Face-to-face interaction with all Florida local governments will need to take place for further understanding of local needs and impacts.

RESEARCH
Florida’s universities and colleges as well as various environmental groups are conducting various climate research. Connecting with these groups to combine resources will be key.

BUSINESS
Local businesses are the lifeline for Florida’s economy and yet face some of the most costly impacts of climate events. It will be important to work with these groups to enterprise on how resilience can help operations continue and minimize business impacts.

CONDUIT
All of these efforts will allow the CRO to establish a network of resilience stakeholders. A key role for this office will be to create channels between each of these entities to allow for seamless transfer of subject matter knowledge.
Building on the efforts of the Florida 2030 plan, long-term strategic goals and near-term tactical strategies will be developed through a number of approaches. These efforts help the state grow a better understanding of the challenges faced, review the capacity needed to address those challenges, and unite people, projects, and priorities.

**HURRICANE PREPAREDNESS PLAN**
Leverage existing resources to create a statewide preparedness plan. Being the target of 80% of direct hits, a comprehensive plan can optimize ways to keep residents safe.

**STATEWIDE RESILIENCE PLAN**
A statewide resilience plan detailing the challenges Florida faces, easy to follow scientific projections and incorporating guidance on how to prepare, adapt, harden, and retreat will help communities become resilient.

**STATEWIDE SEPTIC PLAN**
Too many areas in Florida face challenges with water systems and septic. These challenges will only become more compounded as the sea level rises around the state. To protect natural resources and keep public health resilient, a statewide septic plan will be developed.

**STATEWIDE EV RESILIENCE PLAN**
Florida leads the US in researching future mobility trends including alternate fuel. As fuel systems become increasingly threatened with hurricanes and flooding, Florida will plan out practical, resilient options including Electric Vehicle infrastructure.

**REGIONAL ADAPTATION STRATEGIES**
Communities throughout the state face a variety of threats and not all solutions are applicable to all communities. However, we need to ensure we are not leaving anyone out of the conversation and all needs are being addressed. This requires development of regional strategies which can be localized.

**ASSESS RISK / HAZARD / VULNERABILITY**
Continue to conduct vulnerability assessments of infrastructure throughout the state. This not only includes understanding what critical assets are threatened but also understanding the impacts of infrastructure once it is submerged or damaged.

**Best Practices / Resource Guides**
Engagement on resilience is important for sharing climate information and intelligence throughout the state. This will be done through a combination of best practice resource guides shared and authored by the resilience office and through stakeholder engagement. A network can be established through potential resilience districts to share innovative and successful strategies and determine how those strategies can be adapted to all Florida regions, based on unique needs, and to avoid reinvention of the adaptation wheel while preserving regional identity and context.
"I feel confident we will continue to live here in the Keys. But that may mean we have to learn to live differently with water."

RHONDA HAAG, CHIEF RESILIENCE OFFICER, MONROE COUNTY
WLRN, October 2019

FUNDING & IMPLEMENTATION

Officials in Florida are already facing tough economic decisions as a result of SLR. A recent study conducted by Monroe County Florida for a 3-mile stretch of road in Sugarloaf Key determined that it would cost $75 million to keep this facility dry year round, raising it just 1.3 feet. Officials in Monroe are having to decide on feasible investments considering the future conditions and, in this case, it is a challenge.

Many other communities on the coast face similar decisions at the same time they are scrambling for resources to fund more resilient solutions. Resilient actions are often costly but spending now will save lives and money in the future. Additionally, implementation is crucial. Floridians will need leadership to mobilize the resources needed for resilience to take shape.

Several Florida departments have started to fund resilience. FDEP, FDOT, FDEM, FWC, and FDEO allocated a total amount of $3 billion toward resilience projects. While this is a good direction, there is still more to be done. The CRO will lead the mobilization and identification of financial resources and help with implementation to further resilience efforts in Florida.