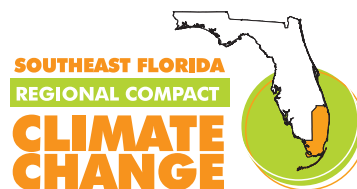




# Southeast Florida Regional Climate Change Compact **REGIONAL CLIMATE ACTION PLAN 2.0**

*Abridged Version*

December 2017



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# Introduction

Welcome to the abridged version of the second Southeast Florida Regional Climate Action Plan (RCAP 2.0). The Southeast Florida Regional Climate Change Compact is a groundbreaking regional effort to foster sustainability and climate resilience at the regional scale, uniting Broward, Miami-Dade, Monroe, and Palm Beach counties. The Regional Climate Action Plan, first created in 2012 with a five-year horizon, is the Compact's guiding tool for coordinated climate action in Southeast Florida to reduce greenhouse gas emissions and build climate resilience. In December 2017, the Compact launched RCAP 2.0, a primarily digital tool with an easy-to-use online interface that enables a broad range of practitioners to access the technical and peer support within RCAP 2.0.

This document is an abridged version of RCAP 2.0 which features the plan's 12 key focus areas and the 142 total recommendations within those focus areas. **Implementation information, guidance tools, case studies, and municipality data can be found online at [www.RCAP2.org](http://www.RCAP2.org).** This online platform enables practitioners and communities to sort through RCAP 2.0 based on their role, local context, and priorities.

Throughout 2017, the Compact managed a year-long process to refresh the Regional Climate Action Plan through extensive stakeholder engagement, expert direction, and public input. RCAP 2.0 responds to the lessons learned over the past five years of regional implementation and the feedback received from government officials and staff, local residents, public and private subject matter experts, and nonprofit organizations—over 300 comments across various public comment periods. This feedback was indispensable in making RCAP 2.0 relevant to, and reflective of, all stakeholders and communities in the region.



# Agriculture

**GOAL:** *Ensure the continued viability of agriculture in Southeast Florida in the face of climate change through policies and actions that encourage sustainable production, remove barriers to production, promote economic incentives, improve water reliability, and promote best management practices.*

Agriculture is consistently one of the [three strongest sectors of Florida's economy](#) and serves as a stabilizing contributor to gross state product during cyclical downturns in the other major economic sectors. In 2016, Florida's vegetable production alone generated [\\$1.34 billion in gross sales](#), the second highest sales in the nation. Florida is the [leading state for planted acres and value](#) in tomatoes, snap beans, watermelons, and cucumbers.

Southeast Florida is [unlike any other growing area](#) in the nation. A unique set of climate conditions allows for the production of more than [250 different crops](#), including temperate crops in the winter and tropical and subtropical crops year-round. The region contributes to the food security of the nation by supplying the entire East Coast with [winter produce](#), and there is ample local [market potential](#) for common and ethnic crops. The use of local produce also reduces reliance on imported products and increases [food security](#). [Properly managed agricultural land](#) may also reduce the urban heat island effect and provide wildlife habitat.

Despite its relative stability, the agriculture sector faces challenges ranging from the constant bombardment of new [invasive pests and diseases](#) to frequent and increasingly intense [natural disasters](#). Changes in prevailing rainfall patterns and increasing average temperatures may also [adversely affect crop productivity](#).

These recommendations support the agricultural community's commitment to sustainability and the economic viability of regional agriculture, which will allow farmers to continue to provide food for the region's residents, as well as the nation.

- AG-1** Promote policies that preserve the economic viability of agriculture.
- AG-2** Continue to meet the water needs of agriculture.
- AG-3** Promote locally produced foods and goods.
- AG-4** Align research and extension with climate-related needs of agriculture.
- AG-5** Maintain or create agriculture purchase of development rights programs.
- AG-6** Assess opportunities for growers and agricultural landowners to manage land to lessen the impacts of climate change and incentivize those actions.
- AG-7** Seek a national designation for Southeast Florida as a critical source of domestic agricultural products.
- AG-8** Identify and reduce obstacles for enabling urban agriculture, gardening, and other backyard agricultural practices.



- AG-9** Increase resources for the study and implementation of invasive, non-native pest and pathogen prevention; early detection; and rapid response.
- AG-10** Promote sustainable aquaculture, perennial crops, diversified farming systems, precision agriculture, and re-contouring field elevations.
- AG-11** Assess and address public health risks of more frequent and intense high-heat days to agriculture and farm workers.



# Compact Coordination

**GOAL:** *Strengthen coordination and collaboration in Southeast Florida on climate change issues by building the capacity of the Compact to meet evolving regional needs.*

The Compact's experience in Southeast Florida since 2009 has shown the [power of regional coordination and collaboration](#) in advancing climate change action. The Compact serves as a vehicle that enables municipalities, counties, regional agencies, and other key actors to take coordinated action at the regional scale, producing a whole that is greater than the sum of its parts.

In implementing the first [Regional Climate Action Plan](#) (2012-2017), the Compact learned how to coordinate actions regionally in ways that bolster the important efforts of county government and individual municipalities. Regional agencies, county governments, and municipal governments are the entities that do the hard work of implementing the RCAP recommendations. The Compact's regional role is to develop regionally consistent science and planning assumptions for local use; create resources to build the capacity of local governments to best implement climate action; identify and address issues that require coordination across individual jurisdictions; and coordinate consistent communications to state and federal government, the general public, and audiences outside of Southeast Florida.

In developing RCAP 2.0, the Compact partners recognized the need to highlight the regional coordination priorities for the duration of RCAP 2.0. These recommendations articulate parts of the Compact's agenda through 2022, focusing on the key functions of the Compact outlined in its formative agreement among the four counties.

- CC-1** Establish and implement a regional communications strategy among business, government, and community leadership.
- CC-2** Update regional unified sea level rise projections.
- CC-3** Explore opportunities to better coordinate cross-agency and cross-jurisdiction reviews of major infrastructure projects.
- CC-4** Continue to provide high-quality implementation support resources for jurisdictions seeking to implement the Regional Climate Action Plan and other sustainability and resilience measures.
- CC-5** Develop and track regional indicators of climate change impacts, emissions reduction, and adaptation action.
- CC-6** Create a Compact advisory group composed of organizations that represent the region's climate work, equitable community development, and vulnerable populations in order to track and share best practices on equitable climate action with the region.



## Energy and Fuel

**GOAL:** *Reduce consumption of electricity and fuel and increase renewable energy capacity to increase regional resilience, reduce greenhouse gas emissions, and improve emergency management and disaster recovery.*

The [Paris Agreement](#) codified an international effort to limit global warming to 1.5 degrees Celsius. This warming limit is widely recognized as critical to human health, safety, food security, water supply, coral reef health, and the ability to manage adaptive capacity for climate impacts. Like many local and state governments across the United States, Southeast Florida governments seek to provide leadership in addressing the root causes of global climate change by reducing greenhouse gas emissions consistent with the ambitious goals of the Paris Agreement.

The vast majority of the energy consumed in Southeast Florida is used to [fuel vehicles and generate electricity for buildings](#). Reducing regional emissions can serve to [build the resilience](#) of energy systems during storms and other natural disasters, and [efficiency and conservation](#) are the most accessible and cost-effective ways to reduce energy consumption.

These recommendations address efficiency and conservation strategies and encourage the use of renewable energy. They call for public-private partnerships and addressing barriers, including regulatory processes, that currently prevent the broad application of these technologies. The recommendations are comprehensive, ranging from setting goals and increasing renewable energy capacity to establishing a framework to deliver finance options.

- EF-1** Promote renewable energy through policies and technological development in order to reduce greenhouse gas (GHG) emissions.
- EF-2** Advance energy efficiency and conservation through technological solutions, behavioral strategies, and policies in order to reduce greenhouse gas (GHG) emissions.
- EF-3** Increase accessibility to energy efficiency solutions for limited-income families.
- EF-4** Increase accessibility to distributed renewable energy technology.
- EF-5** Utilize renewable and distributed energy technologies for emergency management and disaster recovery.
- EF-6** Streamline permitting and administrative processes to reduce the soft costs associated with renewable energy technologies.
- EF-7** Establish financing mechanisms for current homeowners to invest in renewable energy and energy efficiency.



- EF-8** Build the capacity for distributed renewable energy and energy storage technologies in future building stock.
- EF-9** Enable grid-independent energy and waste-to-energy systems.
- EF-10** Enable a fuel-efficient public vehicle fleet.
- EF-11** Establish a fuel-efficient municipal vehicle fleet.
- EF-12** Promote community use of electric vehicles (EV).



# Natural Systems

**GOAL:** *Implement monitoring, management, and conservation programs designed to protect natural systems and the services they provide to society while improving their capacity for climate adaptation.*

Southeast Florida's native species and natural areas depend upon specific temperature, water, and salinity conditions. Coral reefs and seagrass meadows grow in clear, shallow seawater with abundant sunlight and stable temperatures, while mangroves thrive in brackish areas between the low- and high-tide lines. Freshwater-dependent hardwood hammocks and pine rockland forests support an abundance and diversity of rare plants and animals unique to the region. The Everglades' wetlands and tree islands depend on seasonal rainfall patterns that have existed for centuries. Climate change threatens many of these natural assets, which are important not only for their inherent biological values, but for the many cultural, health, and economic benefits they provide to society.

These "ecosystem services," such as the absorption of flood waters and drinking water aquifer recharge provided by freshwater wetlands and forests, are essential elements of Southeast Florida's economic success and local quality of life. [Coral reefs](#) and [mangroves](#) are vital to commercial and recreational fisheries, as well as the dive tourism industry—they also serve as the front lines of defense against storm-driven flooding and erosion. Beaches and dunes also protect the coast while providing a key attraction for millions of visitors.

As the sea rises and rainfall patterns change, these natural systems may not be able to persist in their current locations. People must ensure that there is a place for natural systems, the species they support, and the services they provide. Thoughtful land-use planning and land acquisition programs can help ensure species and habitats can adapt, migrate, or transition.

The following strategies recommend ways for all levels of government to maintain natural areas, rare and endangered native species populations, ecosystem services, and the nature-dependent industries that underpin the region's economy.

- NS-1** Foster public awareness of the impacts of climate change on the region's natural systems and ecosystem services.
- NS-2** Promote collaborative federal, state, and local government conservation land acquisition and easement programs.
- NS-3** Support regional wildland fire management coordination efforts.
- NS-4** Develop sustainable financing for the monitoring, protection, restoration, and management of natural areas and ecosystem services.

- NS-5** Identify or create a regional group to coordinate a plan to create adaptation corridors, living collections, and other approaches to species dispersal and conservation.
- NS-6** Conduct a predictive assessment of current and potential invasive species ranges and impacts.
- NS-7** Promote the protection and restoration of coastal natural systems and the creation of living shorelines at the regional scale.
- NS-8** Support coral reef protection, restoration, and sustainable-use initiatives to help Florida's sensitive reefs adapt to the changing climate and ocean acidification.
- NS-9** Advocate for federal and state funding for applied monitoring and climate-related science, conducted in partnership with the Florida Climate Institute.
- NS-10** Examine and propose revisions to environmental regulations to account for the effects of climate change.
- NS-11** Identify the effects of climate change on fish populations, the sustainability of key fisheries, and the fishing industry, then develop adaptation plans as needed.
- NS-12** Promote the protection, restoration, and creation of freshwater wetlands, open space buffer areas, and connectivity between freshwater and estuarine waters.
- NS-13** Develop and implement long-term, sustainable, regional solutions to beach erosion and sediment supply.
- NS-14** Maintain, create, and/or restore urban tree canopy.
- NS-15** Support and advocate for continued implementation and funding on the state and federal levels for the Comprehensive Everglades Restoration Plan.



# Public Health

**GOAL:** *Build capacity to proactively mitigate climate-related public health risks in Southeast Florida.*

Protecting the health and welfare of residents is a fundamental role for every level of government and the cornerstone for assuring the current and future prosperity of any community. [Healthy people](#) underpin economic productivity, student achievement, and the vitality of community life that matter most to residents. The delivery of health services in Southeast Florida is accomplished by a network of providers including county public health departments, public hospitals, and a vast array of private-sector providers operating in a variety of settings ranging from community-based clinics to hospitals and major research facilities.

Global [climate change brings new public health risks](#) to the table and exacerbates existing risks that public health providers have been working to mitigate for decades. Rising average temperatures increase the risk of heat-related illness (e.g., heat exhaustion and heat stroke) for those working outdoors or without access to air conditioning, and may worsen chronic conditions, including asthma and diabetes. Floodwaters, whether from coastal king tides worsened by sea level rise or from inland flooding exacerbated by heavier rainfall events, [can carry pathogens](#) and increase breeding habitat for mosquitoes, which in turn present health risks. Changing climate conditions and increasing travel and migration are also [creating pathways for vector-borne diseases](#), including the 2016 appearance of [Zika in Southeast Florida](#), which heightened public health concerns in the region.

The addition of this section to the RCAP reflects the growing recognition of the linkages between climate change, building regional resilience, and the need for focused attention on these issues. These recommendations encourage proactive efforts to build resilience into local and regional public health systems.

- PH-1** Understand and communicate public health risks associated with climate change.
- PH-2** Adopt and update all Florida Department of Health plans to reflect climate and sea level rise impacts on public health.
- PH-3** Adapt federal and state public health resources to support specific community needs.
- PH-4** Reduce extreme heat exposure to promote public health.
- PH-5** Advocate for policy changes and funding for local health departments to collect data more frequently to influence public health plans.
- PH-6** Increase reporting of health data monitoring systems to evaluate emerging diseases related to climate change.
- PH-7** Develop tools to assess the impacts of climate change and sea level rise on existing chronic conditions and to report trends or concerns for action.



# Public Outreach and Engagement

**GOAL:** *Build public awareness of the climate-related risks facing Southeast Florida and the opportunities for early, coordinated action to address these risks.*

Climate change is already [affecting Southeast Florida's communities](#), and the best available science indicates these impacts will likely continue to accrue. In order to protect property, health, and the regional economy, local governments across the region are taking action, and are engaging their residents in ongoing conversations about these actions. By working with residents to identify hazards and vulnerabilities, set priorities for needed infrastructure improvements, and design projects that will change the texture of neighborhoods, local governments can ensure they are meeting their public trust responsibilities in ways that align with the values of residents for the places where they live, work, and play.

The following recommendations outline several outreach and engagement strategies that local governments can use to responsibly inform all of their residents of the challenges that exist within their communities, better understand the diverse perspectives of residents, and devise public policy responses that incorporate solutions to fully meet community needs for all.

- PO-1** Assess community needs to guide local government communications.
- PO-2** Promote public awareness and understanding of climate impacts, as well as the personal actions and public policy options available to respond to climate change.
- PO-3** Inspire community action to address the causes and impacts of climate change.
- PO-4** Create open data platforms and digital tools.
- PO-5** Create culturally- and linguistically-appropriate information gathering tools and strategies to help inform decision-makers of the priorities and concerns in communities.



# Public Policy Advocacy

**GOAL:** *Guide and influence all levels of government to address climate change in relevant policies, programs, and legislation.*

Local governments working independently or collectively have many policy options available to spur emission reductions and to build resilience, but state and federal levels of government hold key responsibilities and powers. Beyond having legal and regulatory roles for addressing climate change, state and federal agencies own, operate, and are responsible for the ongoing maintenance of critical infrastructure in Southeast Florida. In order to ensure the region's voice is heard in Tallahassee and Washington, D.C., Compact partners work together in coordinated advocacy around energy and climate issues.

Advocacy at the state and federal levels is one of the fundamental functions that led to the creation of the Compact; more clauses within the original Compact resolution are dedicated to joint advocacy than any other purpose. The Compact region is represented by nine congressional districts in the United States House of Representatives, 13 districts in the Florida Senate, and 35 districts in the Florida House of Representatives. The Compact seeks to work with elected representatives at the state and federal levels in a bipartisan fashion to advance the region's positions on key legislative issues, budget priorities, and regulatory matters of importance to Southeast Florida.

These recommendations outline the Compact's shared advocacy role. While individual issues will change from year to year, the Compact partners remain firmly committed to working together to raise their voices in unison for the good of the region.

- PP-1** Support—at all levels of government—policy, legislation, and funding to reduce greenhouse gas emissions in all sectors, use less energy and water, deploy renewable energy and low-carbon transportation, prepare for and adapt to climate impacts, build community resilience, and study climate and earth science.
- PP-2** Develop common positions on climate, energy, and resilience issues, and advocate jointly as the Compact for those positions before state and federal legislatures, regulatory bodies, and the executive and judicial branches of government.
- PP-3** Urge federal, state, regional, and local partners to prioritize climate change considerations in the planning, construction, and operation of the regional water management and flood control system.
- PP-4** Participate in coalitions of public-, private-, nonprofit-, and/or academic-sector actors dedicated to climate, energy, and resilience issues.
- PP-5** Coordinate climate, energy, and resilience policies among counties, municipalities, school districts, and other units of government in the region.



- PP-6** Prioritize climate policies that advance social and economic equity for high-vulnerability populations and limited-income residents
- PP-7** Consider the direct and indirect impacts of projects, policies, and investments on relevant stakeholders.
- PP-8** Encourage the general public to engage in civic discourse regarding climate, energy, and resilience issues.



# Regional Economic Resilience

**GOAL:** *Establish a regional resilience strategy involving elected and business leadership, inclusive of funding mechanisms to guide, incentivize, protect, and promote public and private investments and the economic integrity of the region.*

As climate impacts have become more apparent in Southeast Florida over the past decade, there is a growing awareness that regional collaborative efforts must expand to include a greater degree of collaboration between governments and the private sector to protect the region's economy. Proactive efforts to address climate change—both in building resilience and reducing emissions—represent specific [economic development opportunities](#) for the region. Protecting regional prosperity is an equal and integrated goal with protecting natural resources; infrastructure; and quality of life for all who live, work, and play in Southeast Florida.

These recommendations provide a blueprint for how local governments and the economic development community can work together to ensure individual businesses can continue to operate during weather extremes, use their collective expertise to build the business case for resilience investments across Southeast Florida, and use their collective voice to advocate for appropriate investments in the region by state and federal government.

- ER-1**      Establish a regional economic resilience communications strategy.
- ER-2**      Advance regional resilience infrastructure standards.
- ER-3**      Seek federal and state engagement to develop a resilience strategy.
- ER-4**      Pursue the development of regional water models.
- ER-5**      Integrate resilience and economic development at the regional level.
- ER-6**      Establish funding strategies to provide for equitable investment.
- ER-7**      Engage in the National Flood Insurance Program (NFIP) process.
- ER-8**      Serve as a model for regional resilience.
- ER-9**      Strive for economic equity in adaptation planning.



# Risk Reduction and Emergency Management

**GOAL:** *Prepare for the inevitable shocks and stresses experienced in Southeast Florida through coordinated and interdisciplinary risk reduction and emergency management planning and investment.*

Extreme weather events—namely [hurricanes](#)— punctuate the modern history of Southeast Florida's settlement and development. From the development-disrupting [Great Miami Hurricane of 1926](#) and the railroad-destroying [1935 Labor Day hurricane](#) to the significant storms of modern Southeast Florida history—Andrew, Wilma, and Irma—hurricanes have shaped the region into what it is today and made Southeast Florida a leader in local emergency response.

However, climate change will continue to expose the region to more frequent and severe weather events. [Future hurricanes](#) will likely be much larger, pack greater amounts of potential precipitation, and be more intense than the storms of the past. The region will experience [greater extremes](#) in drought and intense rainfall events, and average temperatures are expected to increase, creating the potential for longer and hotter heatwaves. Accordingly, climate resilience efforts must be integrated into and deeply inform emergency management efforts.

These recommendations draw on the region's expertise in preparing for and responding to weather extremes to keep the region at the forefront of excellence.

- RR-1** Identify and quantify infrastructure and populations at risk to sea level rise and storm surge.
- RR-2** Integrate climate scenarios into emergency planning, evacuation training, and exercises.
- RR-3** Integrate climate vulnerability analysis data, as well as climate adaptation planning and funding, into existing emergency planning and funding documents.
- RR-4** Create and invest in strategic pre-disaster plans for post-disaster recovery.
- RR-5** Identify the most advanced insurance coverage models to reduce exposure in the face of climate-related risks.
- RR-6** Prioritize adaptation investments to reduce the impact of flooding and sea level rise on transportation infrastructure, particularly on evacuation routes.
- RR-7** Ensure local comprehensive plans align with the state Coastal Construction Control Line.

- RR-8** Continue to adopt and update consistent plans at all levels of government in the region that address and integrate mitigation, sea level rise, and climate change adaptation.
- RR-9** Review the Florida Building Code through the lens of climate vulnerability.
- RR-10** Understand and communicate risk information to all residents.
- RR-11** Promote and leverage existing policies and programs designed to reduce flood risks and economic losses.
- RR-12** Increase long-term community resilience and disaster recovery through distributed renewable energy and battery storage systems.
- RR-13** Use effective social media for emergency messaging, public health updates, and tidal flooding updates.
- RR-14** Encourage individual small business recovery plans and personal home adaptation plans.
- RR-15** Support disaster planning and preparedness training for city and county staff.
- RR-16** Connect with members from highly vulnerable populations to build trust and inform emergency management planning.
- RR-17** Ensure the emergency management definition of “communities at risk” includes economically vulnerable people.
- RR-18** Align and integrate emergency management staff and responsibilities with chief resilience officer roles to bolster long-term plans



# Social Equity

**GOAL:** Guide and support municipalities and counties in the Compact region to create equitable climate policies, programs, and decision-making processes that consider local socio-economic and racial inequities and ensure all can participate and prosper.

As cities and counties across Southeast Florida strive to build a sustainable, resilient, and prosperous region, public policy efforts must produce benefits that are shared by all. The Compact recognizes that [climate vulnerabilities are exacerbated by inequities and injustice](#). RCAP 2.0 seeks to address the socioeconomic challenges to building resilience in high-vulnerability communities, often limited-income communities and/or communities of color.

The Compact shares the Southeast Florida Regional Partnership's definition of equity, as outlined in the [Seven50: SE Florida Prosperity Plan](#):

***Equity:** Just and fair inclusion. The goals of equity must be to create conditions that allow all individuals and communities to reach their full potential to the benefit of the individual and the larger regional community. An equitable region is one in which all can participate and prosper in their communities and in the regional economy, and where benefits and burdens are shared fairly.*

Within Southeast Florida, individuals, neighborhoods, and communities may experience geographic vulnerability if they have proximity to a current or future hazard (e.g., if they live in a low-lying area prone to flooding or a heat island). These groups have socioeconomic vulnerability if they lack the resources, financial or other, to be able to mitigate the hazard or to move away from it. Many residents within the region's high-vulnerability communities may have also been [left behind by recent economic booms](#), resulting in increased challenges to achieve the financial stability needed to safely weather more intense storms, heat, and floods fueled by climate change.

Equity should be an integral part of policy making at every level of government within Southeast Florida, and should be understood as a policy objective in developing plans, budgets, and in prioritizing and designing climate projects. [Historically disadvantaged communities will continue to be the most vulnerable to climate change threats](#), unless action is taken to create targeted policies and resources. In addition, efforts to create more resilient and sustainable communities, if not designed thoughtfully, can [benefit some residents while harming others](#). The recommendations within this section represent tangible actions that local governments can take in meeting these responsibilities.

- EQ-1** Encourage dialogue between elected officials, staff, and socially vulnerable populations about local climate impacts and community priorities to inform leaders of community needs.
- EQ-2** Integrate social vulnerability data into all local government processes.

- EQ-3** Support public infrastructure that enables economic mobility, health, and safety for all community members.
- EQ-4** Address the needs of socially vulnerable populations by engaging existing community leaders and representative organizations in decision-making processes, particularly for critical public infrastructure.
- EQ-5** Build the capacity of existing and future leaders of socially vulnerable populations to ask, analyze, and communicate about their community's climate resilience.
- EQ-6** Partner with intermediary organizations that have deep community ties with socially vulnerable populations to co-create engagement and outreach strategies.
- EQ-7** Provide equity and social justice training for local government staff.





# Sustainable Communities and Transportation

**GOAL:** *Adapt to the impacts of climate change and reduce greenhouse gas emissions by reshaping where and how to build and move from place to place.*

The Compact's [Unified Sea Level Rise Projection](#) and [preliminary vulnerability analysis](#) reveal the region's vulnerabilities to the impacts of climate change and inform pathways for immediate action to protect assets and invest wisely. As climate science, monitoring, and modeling continue to be refined, the RCAP integrates the latest climate change considerations into existing and future policy decision-making processes, including municipal and county comprehensive plans and transportation plans. The ultimate goal is to achieve resilience, limit risk, and reduce greenhouse gas emissions.

The recommendations in this section are related to comprehensive planning, including the designation and implementation of adaptation action areas (AAAs), which will direct technical assistance and funding opportunities to areas especially vulnerable to the impacts of sea level rise and associated coastal flooding. In 2011, the Florida Legislature amended state law to create AAAs as an optional designation in local comprehensive plans for those areas experiencing coastal flooding due to extreme high tides, storm surge, and the related impacts of sea level rise. The law also provides for the development of adaptation policies for the purpose of prioritizing funding opportunities. In 2015, the Florida Legislature amended state law to require local governments to include development and redevelopment principles, strategies, and engineering solutions that reduce flood risks and losses within coastal areas into their comprehensive plans.

In addition to comprehensive planning, this section provides recommendations to promote effective engagement of the multiple public- and private-sector entities involved in the provision and maintenance of transportation infrastructure and the delivery of transportation services in the region for climate adaptation and mitigation. Currently, the [transportation sector contributes 45%](#) of the region's greenhouse gas emissions. The plan's strategies—such as reducing vehicle miles traveled by shifting trips taken from autos to walking, biking, or public transportation—will work to reduce emissions and realize the cross-cutting benefits of more livable and desirable communities in the region.

To accomplish the goal, current and evolving coordination efforts between transportation and planning entities rely significantly on data sharing and analyses, from studies and tools identifying vulnerable and/or at-risk transportation infrastructure to performance metrics. This section highlights the need for local and regional planning and decision-making processes to ensure a complementary approach to developing and maintaining a system of land use and transportation that is more resilient, while also reducing vehicle miles traveled, providing more transportation choices, and dealing with future uncertainty.

- ST-1** Incorporate unified sea level rise projections, by reference, into all city, county, and regional agency comprehensive plans, transportation and other infrastructure plans, and capital improvement plans.
- ST-2** Ensure locally produced maps for planning and project documents include the latest storm surge and sea level rise projections.

- ST-3** Use vulnerability and risk assessment analyses and tools to identify priorities for resilience investments.
- ST-4** Designate adaptation action areas, restoration areas, and growth areas as a priority-setting tool for vulnerable areas, and as a means to maximize benefits to natural systems while guiding people and commerce to less vulnerable places in the region.
- ST-5** Ensure beneficial social equity outcomes in considering the impacts of land use policy, public infrastructure, and public service decisions on high-vulnerability populations.
- ST-6** Develop localized adaptation strategies for areas of greatest climate-related vulnerability in collaboration with appropriate agencies and jurisdictions to foster multi-jurisdictional solutions and maximize co-benefits.
- ST-7** Incorporate strategies to reduce risk and economic losses associated with sea level rise and flooding into local comprehensive plans, post-disaster redevelopment plans, building codes, and land development regulations.
- ST-8** Consider the adoption of green building standards to guide decision-making and development and to provide an incentive for better location, design, and construction of residential, commercial, and mixed-use developments and redevelopment.
- ST-9** Implement best practices for the identification, evaluation, and prioritization of threatened resources to preserve historic and archaeological resources and increase resource resilience.
- ST-10** Employ transit-oriented developments and other planning approaches to promote higher-density development capable of supporting more robust transit.
- ST-11** Modify local land use plans and ordinances to support compact development patterns, creating more walkable and affordable communities.
- ST-12** Develop and implement policies and design standards that recognize the transportation system's most vulnerable users and incorporate sustainable elements.
- ST-13** Conduct an assessment of unused or underutilized properties and develop an approach for utilizing such properties that enhances overall resilience goals.
- ST-14** Adopt social equity policies that support equitable economic growth and increase affordable housing opportunities near critical infrastructure.
- ST-15** Develop policies to enhance the urban tree canopy to protect pedestrians and bicyclists from heat and pollution exposure.

- ST-16** Phase out septic systems where necessary to protect public health and water quality.
- ST-17** Ensure investments reduce greenhouse gas (GHG) emissions and increase the resilience of the transportation system to extreme weather and climate impacts.
- ST-18** Increase the use of transit as a transportation mode for the movement of people in the region.
- ST-19** Expand, connect, and complete networks of bicycle and pedestrian facilities, including those supporting access to transit.
- ST-20** Expand the use of transportation demand management strategies to reduce peak period and single-occupant vehicle travel.
- ST-21** Address resilience, maximize efficiency, and increase the use of low-carbon transportation modes for the movement of freight in the region.
- ST-22** Implement transportation system management and operations strategies to maximize the efficiency of the existing transportation system in a coordinated manner across local governments and agencies in the region.
- ST-23** Use evidence-based planning and decision-making for transportation system investments and management.



# Water

**GOAL:** *Advance the water management strategies and infrastructure improvements needed, in parallel with existing water conservation efforts, to mitigate the potential adverse impacts of climate change and sea level rise on water supplies, water and wastewater infrastructure, and water management systems, inclusive of regional canal networks, pumps, control structures, and operations.*

Water figures prominently in building the future resilience and sustainability of Southeast Florida. Efforts to protect drinking water supplies, prevent water pollution, and manage stormwater must continue within the context of rising sea levels. The recommendations for regional action around water derive from four overarching principles. First, as the regional agency responsible for the operation and maintenance of the Central and South Florida flood control system and the infrastructure changes that affect system performance, the South Florida Water Management District, jointly with local governments, should play a prominent role in a) developing regional and sub-regional models and b) creating a framework to inform local models and ensure coordinated water management planning, system improvements, and resilience investments across the region. Second, resilience requires consistency in the use of current science and technology to support planning, management, and investment decisions across all agencies and the region. Third, resilience planning must address spatial and temporal dimensions, ranging from local to regional perspectives, inland to coastal to barrier island settings, chronic to acute stressors, and short- to long-term impacts. Fourth, regional resilience strategies should be developed with consideration of upstream and downstream consequences, including regional water quality and quantity implications, to avoid unintended effects on neighboring communities.

- WS-1** Foster innovation, development, and exchange of ideas for managing water.
- WS-2** Ensure consistency in water resource scenarios used for planning.
- WS-3** Plan for future water supply conditions.
- WS-4** Coordinate saltwater intrusion mapping across Southeast Florida.
- WS-5** Maintain regional inventories of water and wastewater infrastructure.
- WS-6** Develop a spatial database of resilience projects for water infrastructure.
- WS-7** Modernize infrastructure development standards in the region.
- WS-8** Address the resilience of the regional flood control system.
- WS-9** Update the regional stormwater rule.
- WS-10** Integrate combined surface and groundwater impacts into the evaluation of at-risk infrastructure and the prioritization of adaptation improvements.
- WS-11** Encourage green infrastructure and alternative strategies.

- WS-12** Integrate hydrologic and hydraulic models.
- WS-13** Practice integrated water management and planning.
- WS-14** Advance comprehensive improvements to regional and local stormwater management practices.
- WS-15** Foster scientific research for improved water resource management.
- WS-16** Expand partnerships and resources to further innovation in water resource management.
- WS-17** Advance capital projects to achieve resilience in water infrastructure.
- WS-18** Coordinate innovation and regional funding.
- WS-19** Recognize adaptable infrastructure.
- WS-20** Support the Comprehensive Everglades Restoration Plan (CERP).
- WS-21** Expand regional surface water storage.