RESILIENT BROWARD

BROWARD COUNTY

COUNTYWIDE RESILIENCE PLAN

BUILDING A SUSTAINABLE FUTURE

UNDERSTANDING THE RESILIENCE PLAN

Broward County is on the front line of climate change, facing the growing impacts of rising sea levels, more intense rainfall, storm surges, and increasing heat. These challenges put homes, businesses, infrastructure, and natural ecosystems at significant risk. As one of the most climate-vulnerable regions in the nation, the County's low-lying topography, dense urbanization, reliance on coastal resources, and historical drainage infrastructure make it particularly susceptible to the potential for widespread flooding, declining property values, rising insurance costs, and disruptions to industries like tourism.

To address these pressing issues, the Broward County Resilience Plan provides a clear and actionable roadmap for the next 50 years. The Plan combines natural solutions, such as swales and expanded green spaces, with engineered systems like seawalls and upgraded drainage to protect critical infrastructure, manage stormwater, and reduce urban heat. Grounded in robust data, innovative strategies, and community input, the Plan lays the foundation for a thriving, sustainable future.

At its core, resilience means more than just adapting to challenges—it ensures that Broward County can recover, adapt, and thrive in the face of climate risks. By safeguarding the well-being of its residents, economy, and ecosystems, the Resilience Plan ensures a vibrant and sustainable community for future generations.

Key Benefits of the Plan

Reduced Flood Risks

Protecting homes, businesses, and public spaces from water damage through advanced infrastructure and green solutions.

Stronger Economy

Reducing disruptions to business operations and maintaining economic stability.

Improved Public Health

Mitigating urban heat and enhancing overall well-being with expanded green spaces and cooler environments.

Environmental Preservation

Protecting biodiversity, enhancing ecosystems, and promoting sustainable land use.

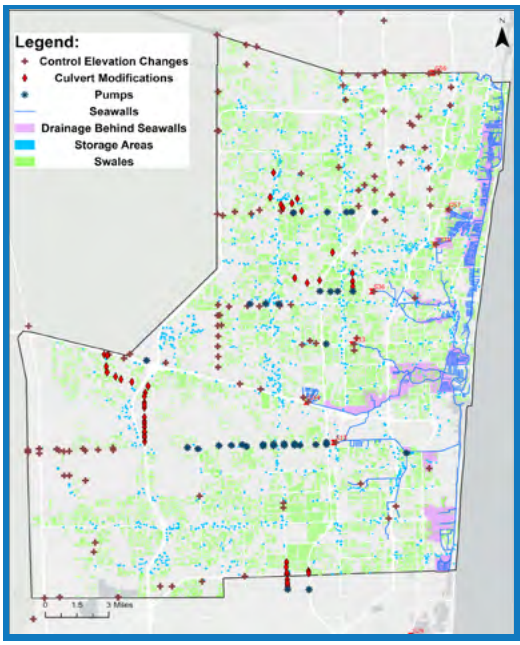
Community Preparedness

Strengthening the County's capacity to respond to and recover from extreme weather and climate impacts.

RESILIENCE IN ACTION

Approach

The Resilience Plan uses a structured and adaptive approach, employing detailed hydraulic and hydrologic modeling, to address evolving flood risk with climate change. By phasing strategies over time, the plan prioritizes the adaptations to immediate risks while preparing for future challenges. The Plan is a vision to protect the residents and businesses of Broward County, providing a multi-decade coordinated blueprint to support future design development and financing of adaptations. Collaboration with stakeholders and active community engagement ensure strategies are inclusive, equitable, and effective.



Solutions have been tailored to meet the needs of

THE COUNTY'S THREE UNIQUE ZONES:

- Highly Vulnerable Areas
- Eastern Areas
- Inland Areas

Key Strategies

The Resilience Plan includes a range of adaptations to address the impacts of climate change and rising sea levels. The adaptive planning approach identified two tiers of adaptation:

Tier 1 (By 2050): Focuses on preparing for a two-foot rise in sea level by 2050. This phase includes constructing seawalls up to 5.0 feet NAVD to mitigate storm flooding, enhancing drainage systems to manage heavy rainfall, adding pumping stations, up-sizing culvert crossings, modifying control structures, and implementing green infrastructure such as swales and expanded green spaces to absorb water and reduce urban heat.

Tier 2 (By 2070): Addresses the challenges of a projected 3.3-foot rise in sea levels by 2070. In addition to the adaptations under Tier 1, this phase involves raising seawalls to 7.0 feet NAVD for enhanced coastal protection and adding advanced drainage systems, including pumping and collection systems to manage increased stormwater volumes behind seawalls. Tier 2 also expands green spaces further to mitigate urban heat and enhance biodiversity.

Modeled Adaptations

The Resilience Plan evaluates and incorporates various adaptations to address specific challenges across the County, including:

Storage

Includes above-ground storage systems and recovering underground storage to manage excess stormwater.

Green Infrastructure

This type of infrastructure focuses on reducing impervious surfaces, adding localized surface storage, and enhancing natural water absorption areas.

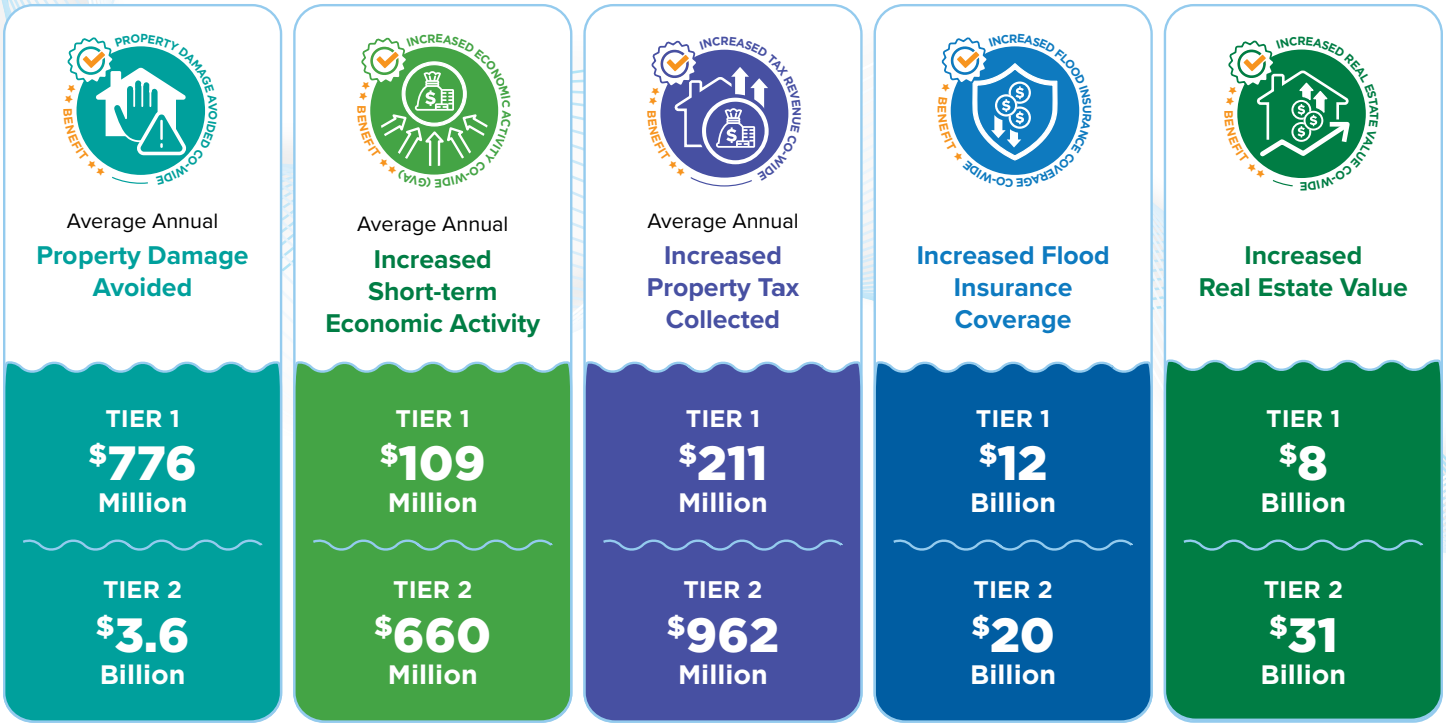
Conveyance

Improves existing structures such as canals and culverts while incorporating additional pumping systems to enhance water flow management.

Barriers

Utilizes property-level seawalls, nature-based or engineered structures to prevent flooding and protect infrastructure.

Summary Of Tier 1 and Tier 2 Benefit Value Estimates



Estimated Costs

The total cost of Tier 1 and Tier 2 adaptations is estimated at $28 billion, with the public portion at $9 billion and private property improvements accounting for the remainder. The public component is likely to be shared by the County, municipalities and water control Districts, leveraging state and federal resources.

Implementation

The phased approach of the Resilience Plan assumes new technologies and data will be incorporated over time to maintain effective adaptations. By prioritizing near-term risks and scaling up for future challenges, the plan ensures efficient resource use. Community engagement and collaboration with municipalities, water management districts, and community groups maximize the Plan's impact, positioning the County as a leader in climate resilience and sustainability.

THE IMPACT: RESULTS THAT MATTER

The Resilience Plan generates measurable economic, environmental, and community benefits, ensuring a safer and more prosperous future for Broward County. By investing in infrastructure upgrades such as seawalls, drainage systems, and green spaces, the plan significantly reduces flood risks, preventing billions in potential property damage. These measures protect homeowner investments and property tax values, and make flood insurance more accessible and affordable. Additionally, the plan supports the local economy by minimizing business disruptions and safeguarding jobs, contributing hundreds of millions annually in economic activity and tax revenue. Beyond economic gains, the plan enhances quality of life by reducing urban heat and expanding green spaces that foster biodiversity and community well-being. Together, these results highlight the Resilience Plan as a critical step toward a thriving, climate-resilient Broward County.

A COMMITMENT TO THE FUTURE

The Broward County Resilience Plan is a forward-thinking strategy to secure the County's future. By addressing immediate and long-term challenges, the plan protects critical infrastructure, supports economic growth, and improves the quality of life for residents. It is more than a strategy—it is a commitment to strengthening Broward County for generations. Through innovation, collaboration, and determination, the County can rise to the challenges of climate impacts and build a thriving, resilient future.

RESILIENCE PLAN POLICIES

Develop Green Streets Program: Increase available greenspace for drainage along roadways, including bioswales and guidance to convert selected neighborhoods from two-lane to one-lane roads, widening drainage areas along the right-of-way.

Reduce Parking Minimums: Revise and adjust parking space requirements for new developments and redevelopments to promote more efficient land use, encourage sustainable transportation options, and reduce the footprint of parking areas, supporting community-oriented growth, and increase storage and pervious areas.

Promote Efficient Land Use: Offer incentives to encourage property owners to replace asphalt parking lots with parking garages or alternative solutions that maximize space and reduce impervious surfaces.

Enhance and Adapt the County's Seawall Ordinance: Revisit minimum elevation requirements for tidal flood barriers as sea levels rise.

Incorporate Resilience into Complete Streets Design Standards: Incorporate resilience standards into complete streets projects and standard designs.

Improve Resilient Development Requirements: Develop a resilient land development code to document requirements for compliance with the Resilience Plan.

Prioritize Resilient Growth Priority Areas: Conduct a study to identify and prioritize areas for development and redevelopment that align with the County's resilience objectives, promoting sustainable growth and community preparedness.

Promote Resilient Home Construction and Retrofits: Provide tools, incentives, and resources for homeowners to make resilience improvements to their properties.

Implement Resilient Improvements at Public Facilities: Implement resilient improvements to County facilities and encourage municipalities and other public entities to enhance their facilities.

Utilize Technology to Enhance Flood Protection: Establish a framework for remote monitoring and control of newly adapted structures, enabling timely adjustments to water level changes and effective management before storm events.

Encourage Redevelopment in Overlay Districts: Provide incentives for redevelopment in overlay areas where additional storage will improve flooding and reduce heat.

Develop Cleaning/Maintenance/Rehabilitation/Testing Program: Require routine cleaning and maintenance of stormwater infrastructure.

Document Future Seawall Requirements 2070: Provide information to the public to prepare for future modifications to the seawall ordinance.

Increase Pervious Percentages: Implement a program to incentivize property owners to convert impervious surfaces, such as concrete or asphalt, to pervious materials like uncompacted gravel or permeable pavers.

Increase Stormwater Storage Management Requirements: Enhance onsite storage capacity requirements for developed or redeveloped land to promote better stormwater management and resilience.

Promote Resilient Land Use: Encourage resilient development by offering incentives and variances for projects that provide additional stormwater storage, ensuring a positive impact and net benefit for the community.

Mitigate Rising Insurance Costs: Explore mechanisms to reduce the burden of rising windstorm and flood insurance costs.

Streamline Post-Disaster Redevelopment Planning and Processes: Proactively plan for redevelopment after disasters by streamlining recovery programs that assist residents in rebuilding or relocating, ensuring a more efficient and supportive recovery process.

For more information, please visit the Broward Resilience Plan Website:

Broward.org/ResiliencePlan

BROWARD COUNTY FLORIDA

Hazen

- Brizaga, Inc.
- Climate Resilience Consulting
- Collective Water Resources, LLC
- Craven Thompson & Associates, Inc.
- Cummins Cederberg, Inc
- Good Alpha
- HR&A Advisors
- McKinsey & Company, Inc
- RJ Behar & Company, Inc
- The Water Institute of the Gulf

This study is a service of the Broward County Board of Commissioners.

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