

RESILIENT GREATER MIAMI & THE BEACHES



RESILIENT305 COLLABORATIVE



The RESILIENT305 COLLABORATIVE

The Resilient305 Collaborative began in 2019 as an outcome of the MetroLab Network membership and the Greater Miami & the Beaches (GM&B) Resilient305 Strategy. The Collaborative is a joint academic-government research partnership among Florida International University, Miami Dade College, University of Miami, and government and community-based organization leaders of GM&B committed to advancing community resilience.

The Resilient305 Strategy is a living document created to address resilience challenges, from climate change and rising sea levels to affordable housing and public health. The 59 action items in the Strategy layout programs and initiatives being led by local government as well as partner and community organizations. The work of the Collaborative directly supports implementation of Action 49: Collaborate with Universities of the Resilient305 Strategy and broadly supports Thrive305. This is a unique partnership which positions GM&B to continue to lead in preparing for and addressing current and future shocks and stressors.

Pilot project

The Resilient305 Collaborative is piloting a resilience research strategy and monitoring program, focused on an area of GM&B dubbed the “Little River to North Beach Resilience District” (below). The District is representative of the character of our GM&B community, which make the lessons learned replicable in other communities throughout GM&B. This diverse area spans communities with varying degrees of exposure to natural hazards, socioeconomic conditions, and technological capacities (e.g., broadband availability, access to sewer).

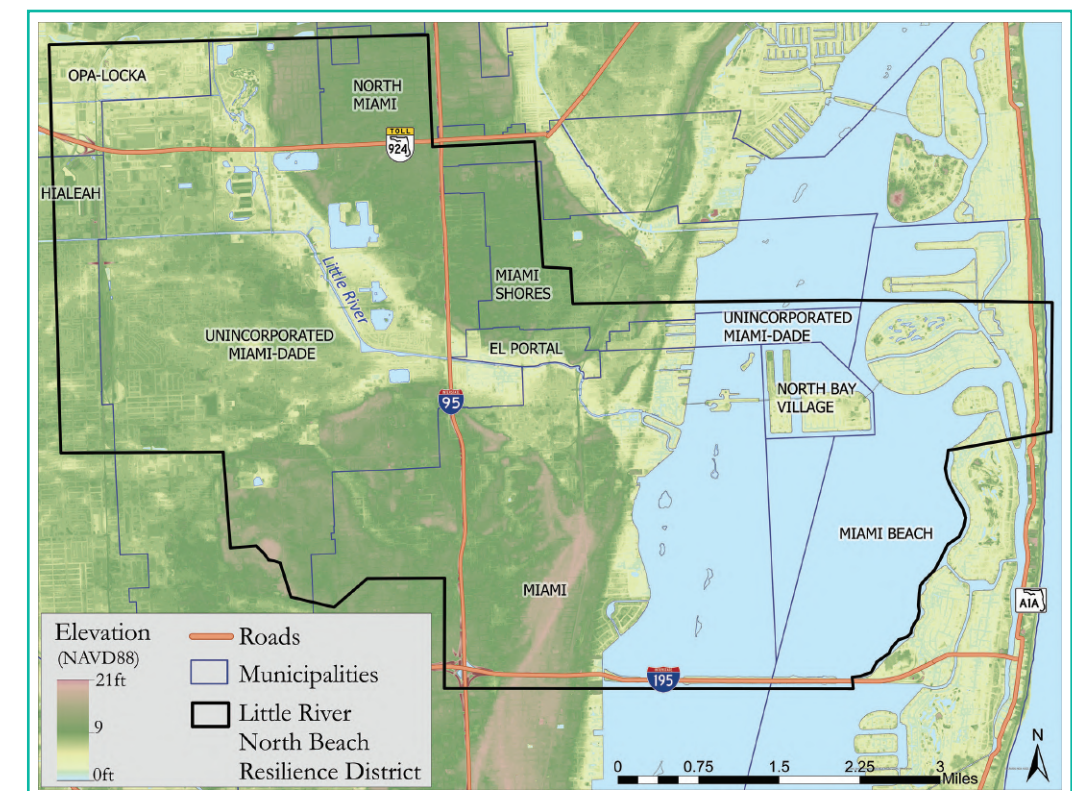
The research will help quantify the benefits of projects resulting from the ongoing implementation of the Resilient305 Strategy. Lessons learned from this project will be leveraged to report on and enhance resilience outcomes over time. It will also develop new information to improve the translation of the Resilient305 Strategy to help meet the resilience priorities of this community and others throughout GM&B.

Images on cover (clockwise)

1. Miami Dade College offers a College Credit Certificate in Solar Energy Systems Specialist that trains students in how to design and install Solar Photo-Voltaic and Solar thermal systems panels in both commercial and private environments, preparing our workforce for the green job economy.
2. Transplanted corals in Biscayne Bay from a University of Miami lab. *Photo courtesy of the University of Miami Rosenstiel School of Marine and Atmospheric Science.*
3. Florida International University student presents work on climate resilience during a poster session at a conference. *Photo courtesy of Florida International University.*
4. The Alfred C. Glassell, Jr. SUSTAIN Laboratory (SUrge-STructure-Atmosphere INTERaction) at the University of Miami Rosenstiel School of Marine and Atmospheric Science is an ideal platform for testing scientific instruments, new materials, and commercial products designed for coastal water, atmospheric or land environments. *Photo courtesy of the University of Miami Rosenstiel School of Marine and Atmospheric Science.*
5. Drone utilized during King Tide days to conduct studies and capture data for students’ projects at Miami Dade College. *Photo courtesy of Miami Dade College.*
6. Florida International University research buoys deployed in strategic locations gather water quality data in different locations throughout Miami-Dade County. *Photo courtesy of Florida International University.*

Back cover

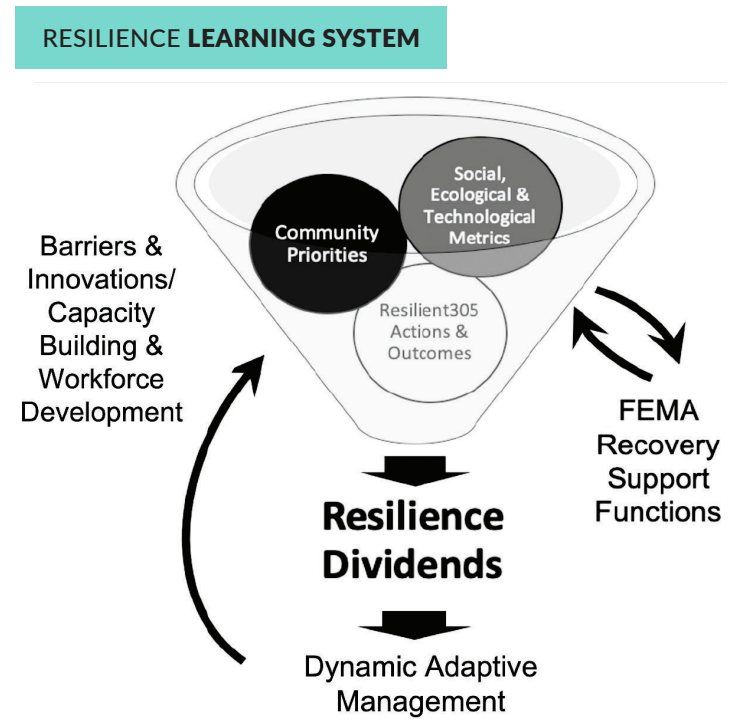
Mangroves are a nature-based solution to adapting for sea level rise and help with coastal protection. Professors and students from academia continue research to better understand their value. *Photo courtesy Florida International University.*



Approach

The Resilient305 Collaborative team is organized into workgroups supporting five Core Areas and five Integrated Research-to-Action areas (see table below) and each team member supports both types of workgroups. The five Core Area workgroups focus their subject matter expertise on synthesizing data, identifying, and developing data needs, and refining metrics to quantify the outcomes of Resilient305 actions.

The five Integrated Research-to-Action workgroups are designed to directly support key pillars of a Resilience Learning System (right). The Resilience Learning System is designed to embed resilience learning for practical application.



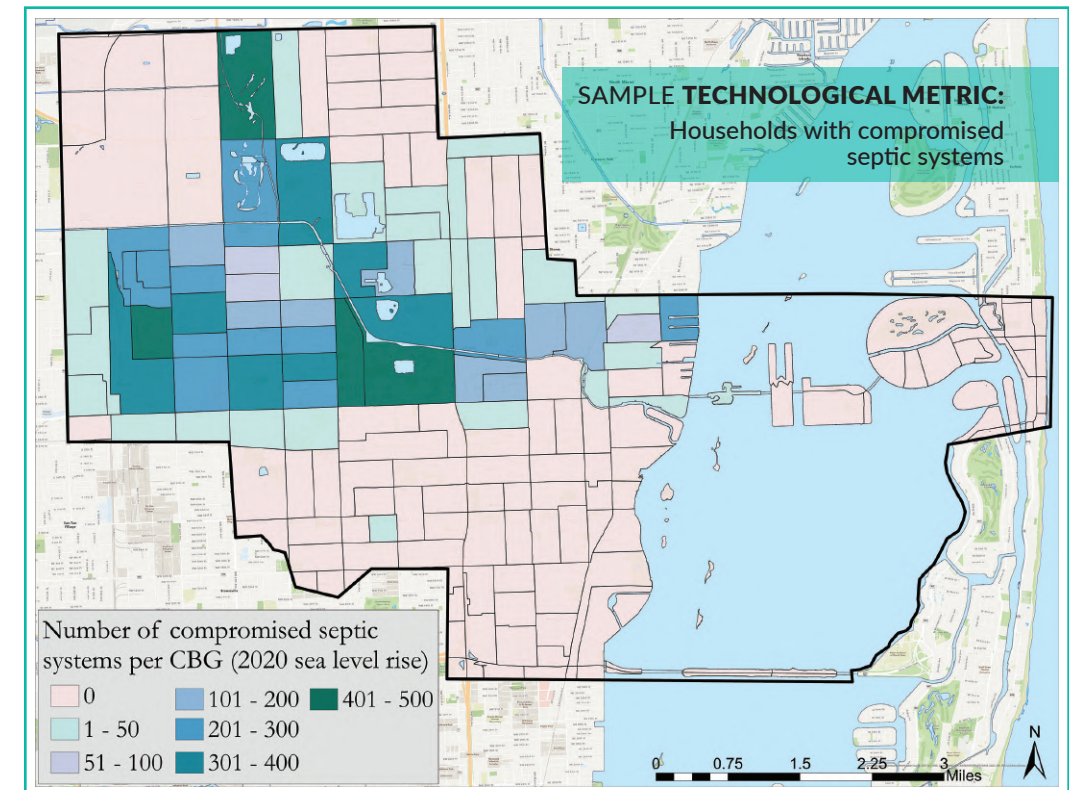
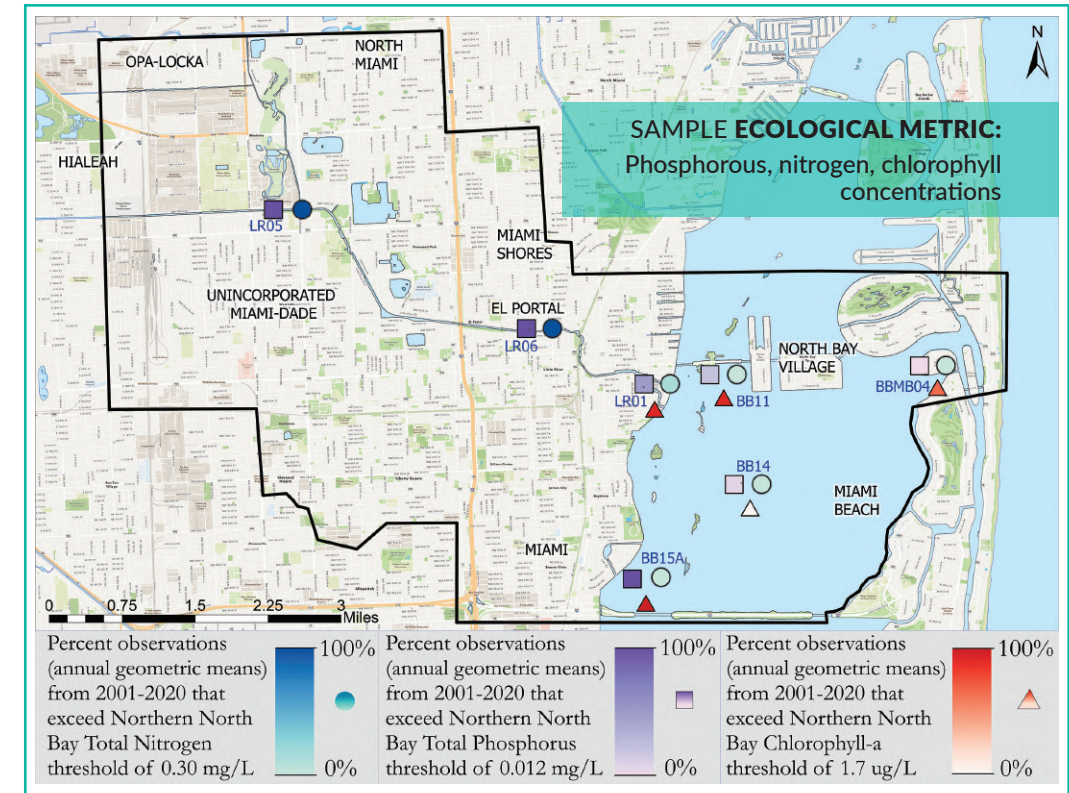
CORE AREA WORKGROUPS	INTEGRATED RESEARCH-TO-ACTION WORKGROUPS
1. Health & Wellbeing	1. Resilience Dividends
2. Economy & Affordability	2. Barriers & Innovations
3. Environment	3. Capacity Building & Workforce Development
4. Technology & Infrastructure	4. Dynamic Adaptive Management
5. Shocks & Stressors	5. FEMA Recovery Support Functions

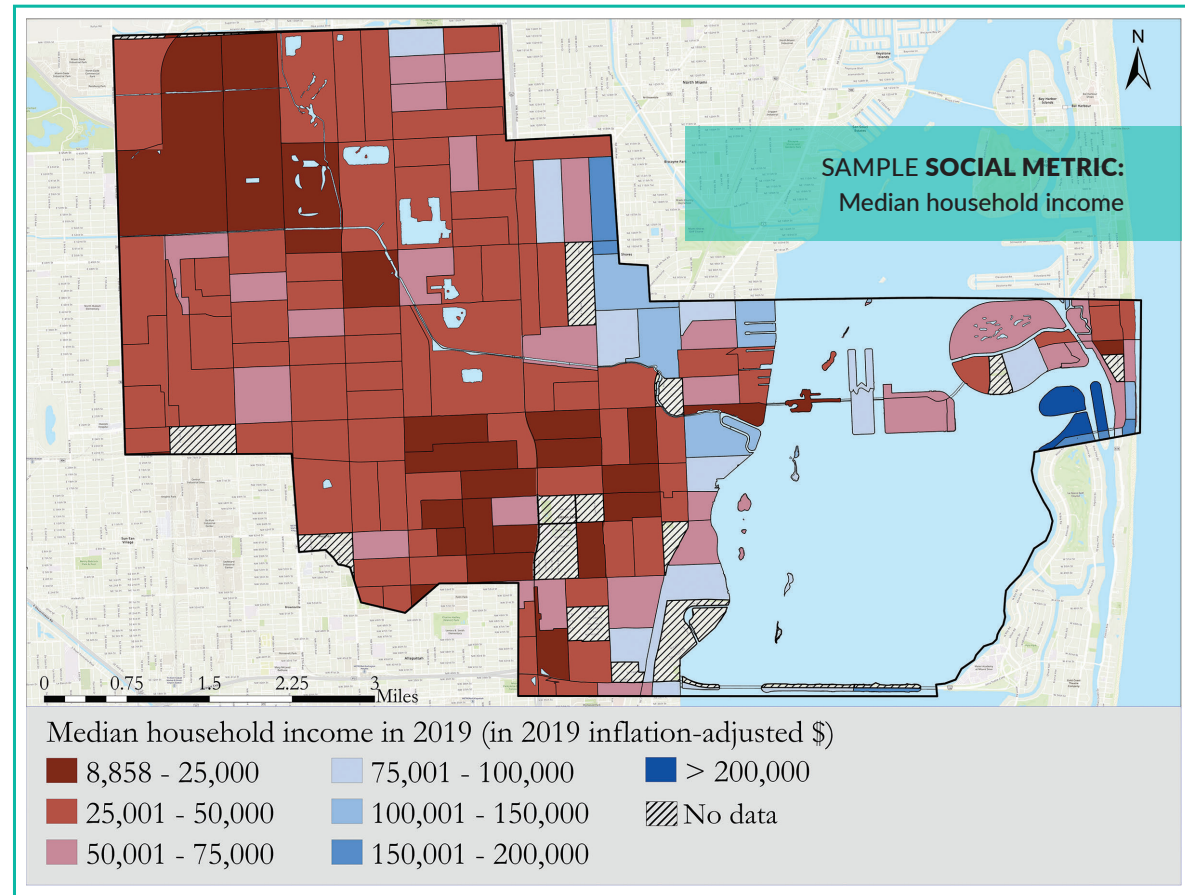
The Resilient305 Collaborative Research Strategy

The basis for our research strategy is a set of comprehensive, data-driven metrics, co-designed and co-produced with community members and government staff. This set of metrics will lay the framework to track and evaluate the resilience outcomes from Resilient305 actions. As resilience projects are advanced and implemented, we can monitor those same metrics to assess progress and improve outcomes and effectiveness over time. Monitoring these metrics advances understanding of the co-benefits of these resilience projects and helps to avoid potential unintended consequences.

One example is a set of metrics for social (median household income), technological (number of household parcels with compromised septic systems) and environmental (% time nutrient criteria are exceeded) systems that can be used to measure change in resilience outcomes over time from a pre-pandemic baseline in a holistic way. For example, this approach can be used to understand if financial stability, infrastructure performance, and water quality have been improved. Applied across the GM&B, this approach can also help to understand how to best prioritize resources and investments in an equitable way.

Social, ecological, and technological metrics used to track progress over time to evaluate how we are achieving outcomes that build resilience in our GM&B community. The maps below illustrate examples of social, ecological and technological metrics in the pilot resilience district project area. We will use this information as the basis for a **Resilience Learning System** to advance learning through sustained progress and discover novel and innovative ways to improve resilience outcomes over time.





Alignment with other work

This research strategy and monitoring program supports many important new and ongoing County and municipal activities that are aligned with outcomes of Resilient305 Actions. For example, Action 1 promotes Biscayne Bay recovery while Action 7 implements the County's Sea Level Rise Strategy. As such, it supports work of the Biscayne Bay Watershed Management Board and Florida Department of Environmental Protection grant for the Little River Adaptation Action Area planning. We will advance resilience learning through sustained progress, as well as discover novel and innovative ways to improve resilience outcomes over time.

Next steps

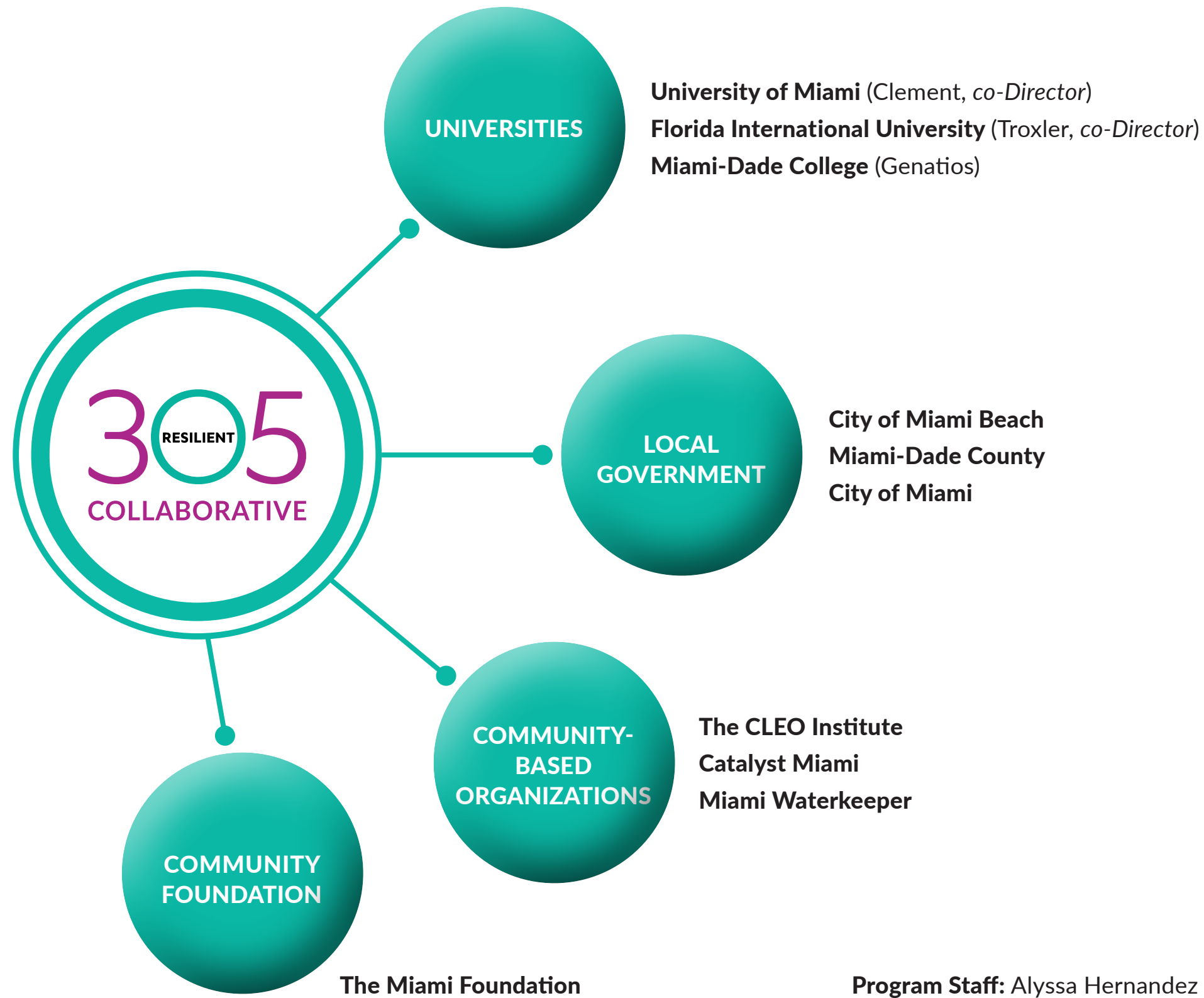
A completed baseline assessment of the pilot project area was completed in 2021 and will work with Collaborative partners to design a public-facing dashboard that visualizes metrics used to monitor resilience outcomes. We will also continually seek to expand participation of civic leaders of community-based organizations and municipal leaders from across GM&B.

Accomplishments

The Resilient305 Collaborative has flourished into an unparalleled partnership inspired by the success of intergovernmental collaboration among GM&B. The Collaborative membership has demonstrated both dedication and enthusiasm on the shared vision of creating a more resilient GM&B that puts the community first and improves the lives of those that call GM&B home. The figure below highlights some of the accomplishments to date despite a global pandemic.

We have also been pounding the virtual pavement by introducing the Resilient305 Collaborative to a wider audience in an increasing number of public presentations thus far - including international-level panels, national meetings, presentations to multiple local interest groups, seminars for community leaders and educational seminars for the public.





WORKING GROUP CO-LEADS AND OTHER KEY AFFILIATES
<p>University of Miami Mach, Posner, Evans, Lombard, Fleming, Clement</p> <p>Florida International University Obeysekera, Sukop, Caban-Aleman, Bolson, Holder, Ilcheva, Sarwat, Leon, Bhat, Wdowinski, Stuart, Troxler</p> <p>Miami-Dade College Genatios</p> <p>Miami-Dade County Castillo, Hefty, Hagemann, Kamrath, Treuer, St. Hilaire, Krebs</p> <p>City of Miami Hew, Farina</p> <p>City of Miami Beach Wheaton, Tonioli</p> <p>Catalyst Miami Cruz, Mori</p> <p>The CLEO Institute Collins</p> <p>Miami Waterkeeper Kelly</p>
Collaborative Participants
External Advisory Board

University and community partner participants

NAME	AFFILIATION	CORE AREA GROUP
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Sonia Chao	University of Miami	Technology & Infrastructure
Angela Clark	University of Miami	Technology & Infrastructure
Taegan Dennis	University of Miami	Economy & Affordability
Tyler Harrison	University of Miami	Shocks & Stressors
Brian Haus	University of Miami	Technology & Infrastructure
Marisa Hightower	University of Miami	Economy & Affordability
Gina Maranto	University of Miami	Economy & Affordability
Jennifer Niemann	University of Miami	Shocks & Stressors
Nick Nocita	University of Miami	Economy & Affordability
Alex Nyburg	University of Miami	Environment
Lynne Turek-Hankins	University of Miami	Shocks & Stressors
Sophie Walenta	University of Miami	Economy & Affordability
Todd Crowl	Florida International University	Environment
Anna Fache	Florida International University	Technology & Infrastructure
Maria Fernandez	Florida International University	Health & Well-being
Nazife Emel Ganapati	Florida International University	Shocks & Stressors
Kevin Grove	Florida International University	Economy & Affordability
Hugo Guzman	Florida International University	Technology & Infrastructure
Ahmed Jalal	Florida International University	Technology & Infrastructure
Meenakshi Jerath	Florida International University	Economy & Affordability
Sara Malik	Florida International University	Health & Well-being
Diana Moanga	Florida International University	Environment
Edward Murray	Florida International University	Health & Well-being
Nadia Seeteram	Florida International University	Shocks & Stressors
Richard Tardanico	Florida International University	Economy & Affordability
Rita Teutonico	Florida International University	Health & Well-being
Kelly Cox	Miami Waterkeeper	Environment
Jane Gilbert	High Impact Integrated Solutions	Shocks & Stressors
Michael Matthews	Miami-Dade College	Health & Well-being
Andrew Stainback	Everglades Foundation	Technology & Infrastructure
De'Sean Weber	The Miami Foundation	Health & Well-being
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