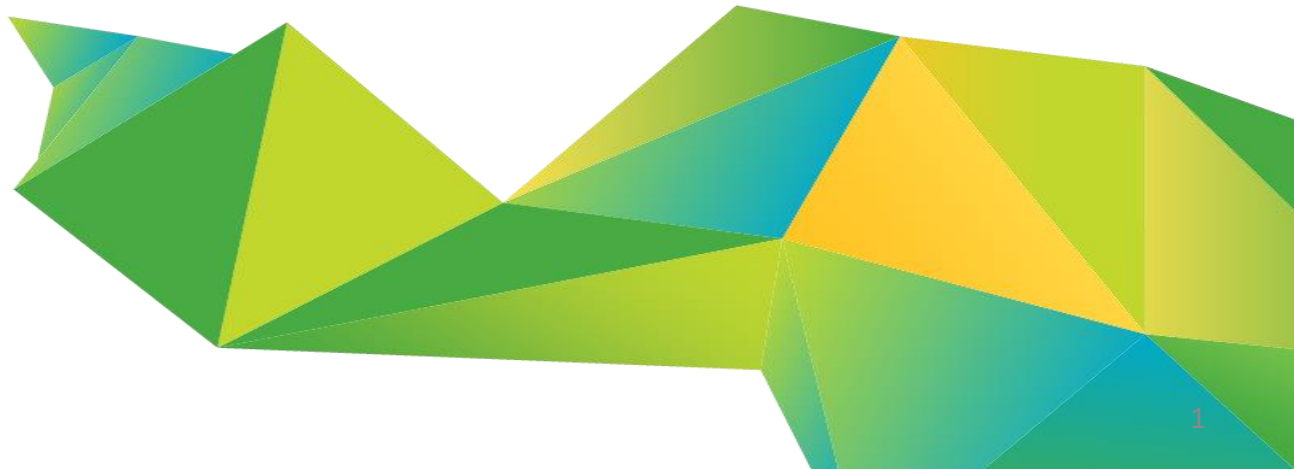




Resilience Workshop Updates

August 06, 2025



Agenda



- ❖ Meet the Team
- ❖ Vulnerability Assessment and Adaptation Plan (VAAP)
 - Project Information
 - Scope of Services
 - Upcoming
- ❖ Broward County Resilience Plan
 - Objectives
 - Flood Model Scenarios
 - Heat Analysis
 - Priority Zones
 - Sea walls
- ❖ Future Updates
- ❖ Questions and Comments



☐ Meet the Team

Kamari Harris – Sustainability and Resiliency Officer

Wilson Suarez – GIS Coordinator

Jocelyn Brown – Environmental Compliance Manager

Vanessa Leroy – Director of Sustainable Development

Christa Carrera – Floodplain Coordinator

Joseph Keeley – GIS Coordinator



Vulnerability Assessment and Adaptation Plan

Keith and Associates

Florida Department of Environmental Protection Resilient Florida Grant

Agreement No. 22PLN43



❑ Project Information

- Comprehensive Vulnerability Assessment in accordance with FS. 380.093 Resilient Florida Grant Program
- Examines the exposure of the City's critical assets to high tide flooding, storm surge, and compound flooding, analyze those risks, develop recommendations for adaptation, and engage residents in focus group discussions about the results.
- Total Funding: \$105,000.00 **(100% grant-funded by FDEP)**



☐ Scope of Services

- Task 1- Acquire Background Data
 - Completed December 2024
- Task 2- Exposure and Sensitivity Analysis
 - Completed June 2025
 - Examine the degree to which city assets are exposed to the identified climate hazards.
- Task 3- Public Outreach
 - Scheduled completion August 2025
 - Conduct a public meeting to present the results of Task 2 and draft VA report
 - Inform and engage stakeholders by inviting the public to provide community-specific input on the results of the analyses

☐ Scope of Services (cont.)

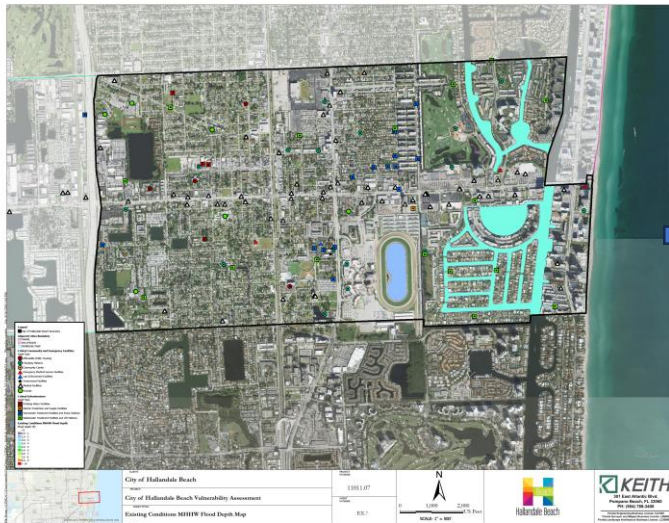
- Task 4- Final VA Report, Maps and Tables
 - Scheduled completion September 2025
 - Compile findings into a comprehensive report, including maps and tables, to document the vulnerabilities and recommended adaptations.
 - Through this structured approach, the project will provide Hallandale Beach with a clear understanding of its vulnerabilities and actionable strategies to mitigate risks and enhance resilience.

Flood Risk Scenario	Return Period	Planning Horizon	SLR Projection
Coastal Tidal Flooding	N/A	2020	N/A
		2050	Intermediate-Low
			Intermediate
		2080	Intermediate-Low
Storm Surge Flooding	100-Year		Intermediate
		Current	N/A
		2050	Intermediate-Low
			Intermediate
	500-Year	2080	Intermediate-Low
			Intermediate
		Current	N/A
		2050	Intermediate-Low
Rainfall-Induced Flooding	100-Year		Intermediate
		2020	Intermediate-Low
		2050	Intermediate-Low
	500-Year	2080	Intermediate-Low
			Intermediate
		Current	N/A

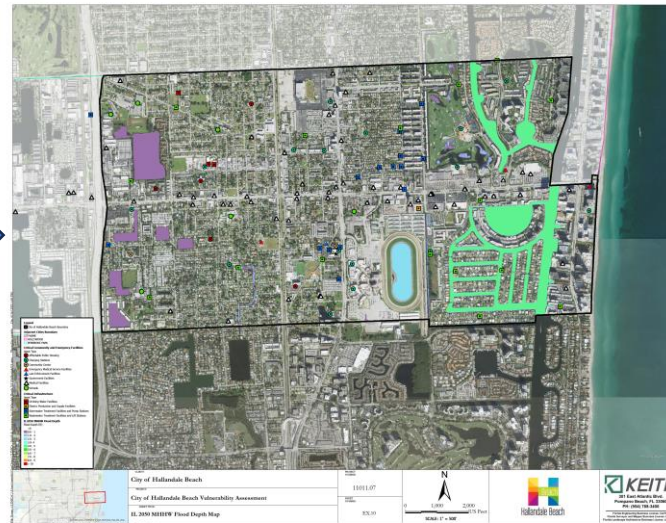
The table above outlines the three (3) types of flood scenarios being modeled in the Vulnerability Assessment, including storm return period, planning horizons, and sea level rise projections.



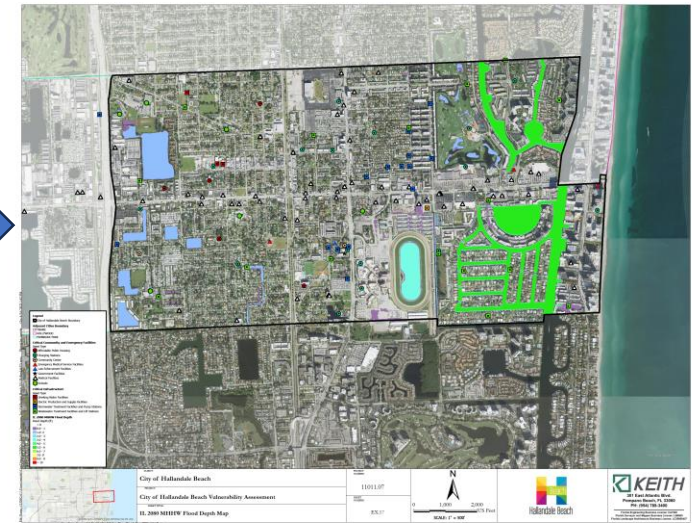
Modeling Results



Existing Conditions MHHW Flood Depth



IL 2050 MHHW Flood Depth



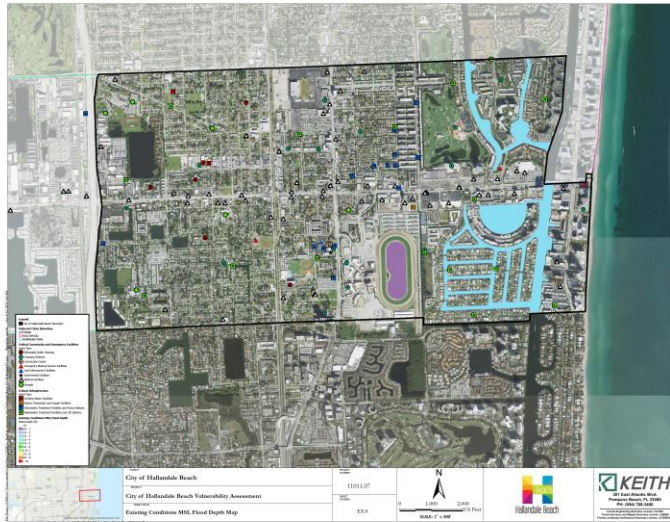
IL 2080 MHHW Flood Depth

The maps above illustrate the modeling results of the Mean Higher High Water (MHHW) flood depths at current, 2050 and 2080. MHHW is defined as the average of the higher of the two daily tides. Commonly known as high tide flooding.

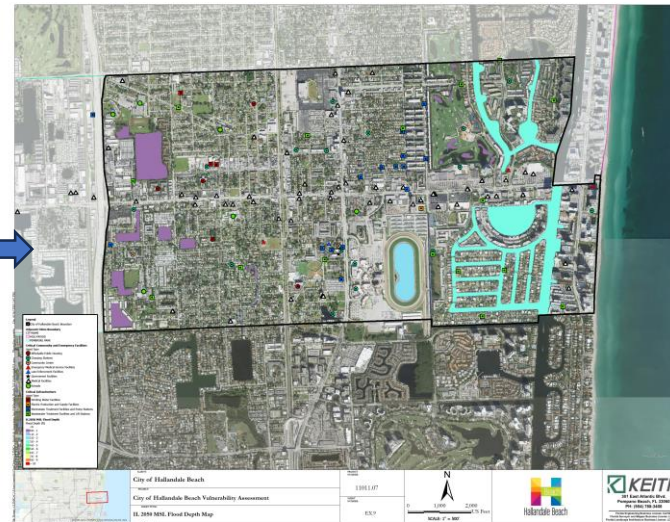
Intermediate Low (IL) refers to a sea level rise scenario where the rise is projected to be between 0.5 meters and 1 meter by the year 2100.



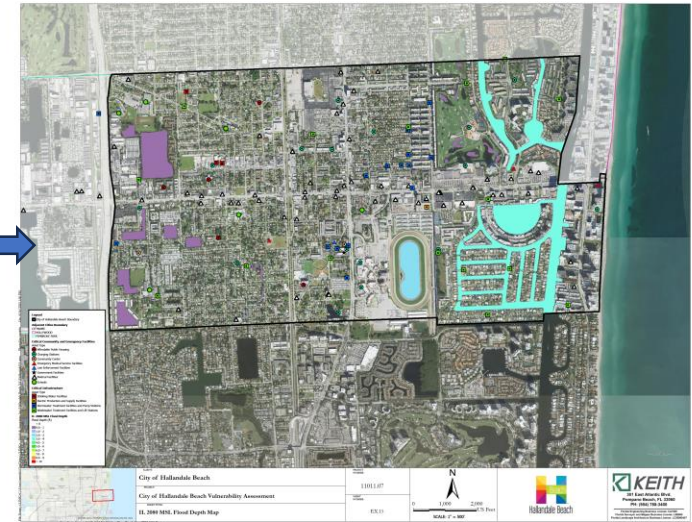
Modeling Results



Existing Conditions MSL Flood Depth



IL 2050 MSL Flood Depth



IL 2080 MSL Flood Depth

The maps above illustrate the modeling results of the Mean Sea Level (MSL) flood depths at current, 2050 and 2080. MSL is defined as the average height of the sea between high and low tides. Critical to determining potential impacts of SLR on areas.

Intermediate Low (IL) refers to a sea level rise scenario where the rise is projected to be between 0.5 meters and 1 meter by the year 2100.



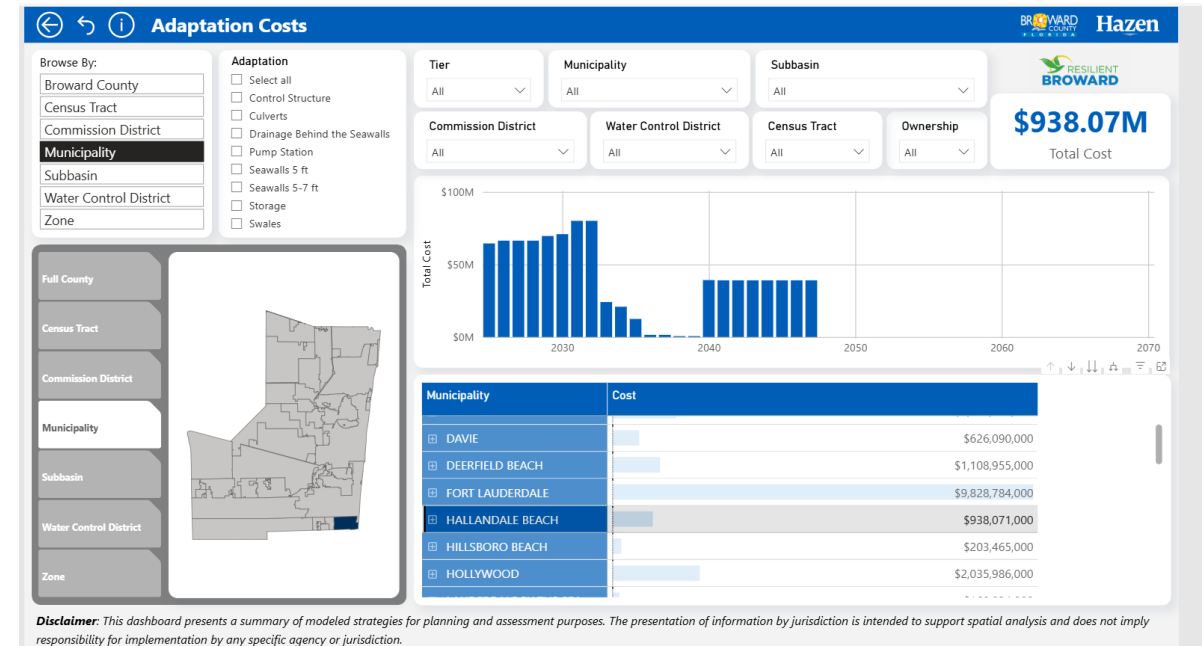


Broward County Risk Assessment and Resilience Plan

Broward County Resilient Environment Department
March 2025

Objective

- Address the impacts of adverse climate
- Combines natural solutions with engineered systems
- New water management strategies
- Recommendations for increased water storage
- Reduce impacts of rising temperatures





□ Flood Model Scenarios

- The County Resilience Plan addresses 5-, 25-, 50-, and 100-year rainfall events under king tide conditions and saturated system for both 2- and 3.3-foot sea level rise
- Also includes the compound effect of the 100-year storm surge combined with the storm events, and the addition of a rainfall change factor to include the effect of climate change on rainfall intensities.

Scenario Viewer

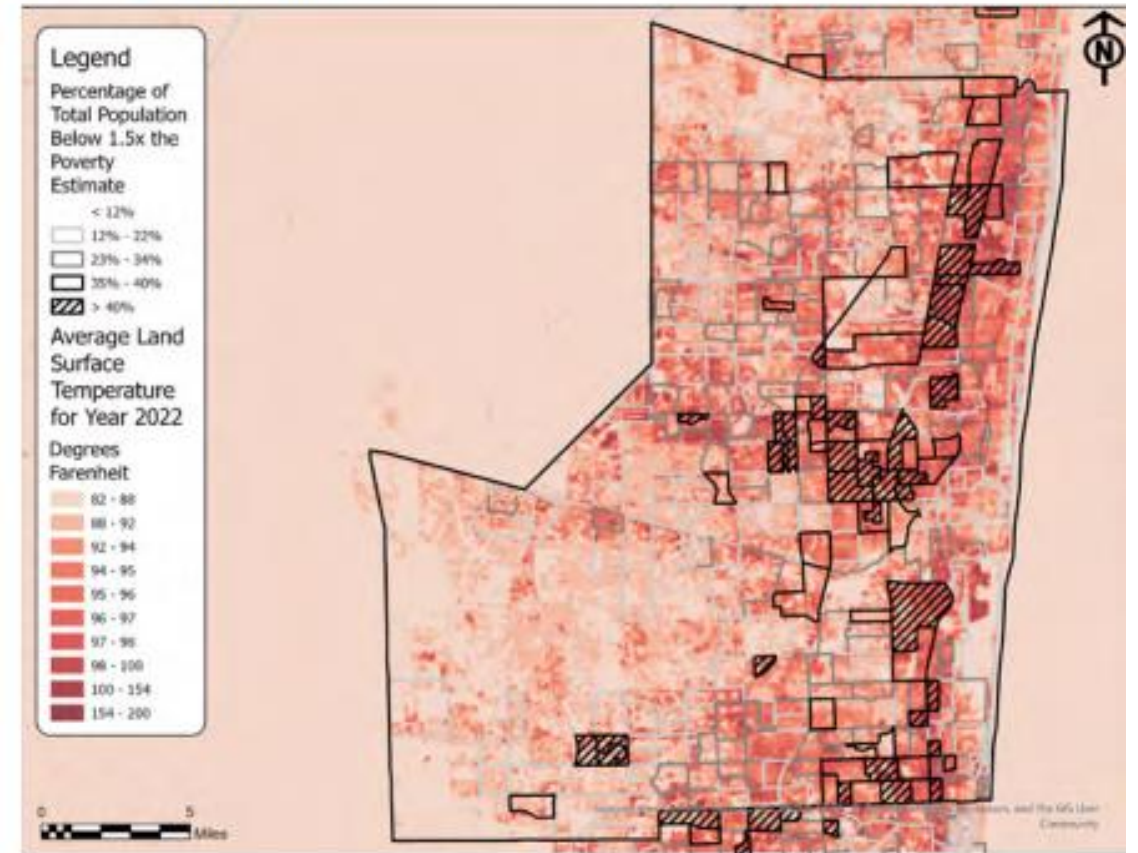
- <https://www.resilientbroward.com/scenario-viewer>

Heat Analysis Study

Green Infrastructure Mitigation Strategies

- Sustainable landscaping
- Bioswales and bioretention
- Rainwater harvesting
- Permeable pavement or pavers

Figure 6. Most Vulnerable Areas Overlain with Average Land Surface Temperature



GEOGRAPHIC IMPLEMENTATION ZONES

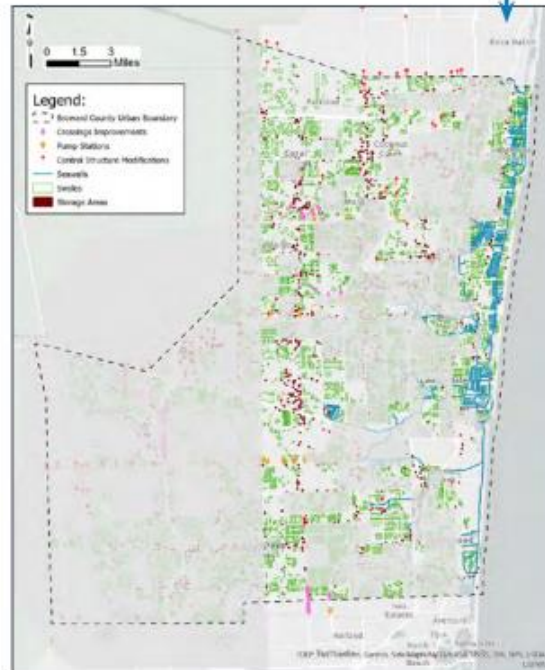
To ensure that adaptation measures are appropriately targeted, Broward County is divided into three geographic zones based on vulnerability and proximity to the coast. This zoning approach enables the County to deploy customized strategies to address the distinct resilience needs of each area.

Zone 1: Highly Vulnerable Areas

The vulnerable areas are characterized by overlapping challenges, including high flood risks, and extreme heat impacts. The presence of low- and moderate-income (LMI) communities is also considered in Zone 1.

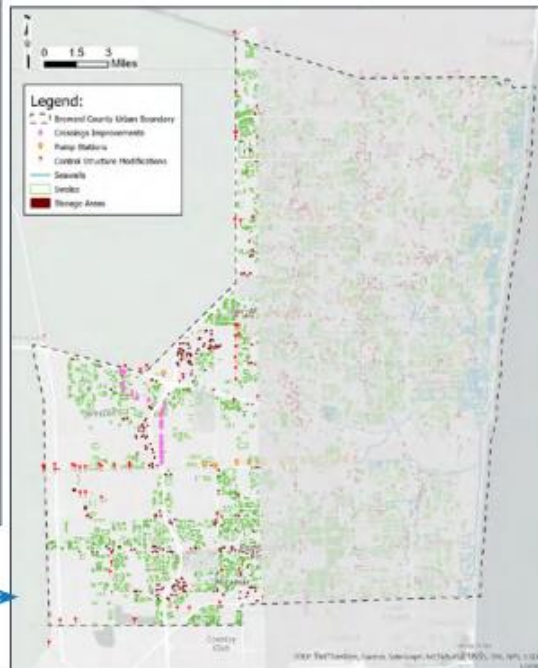
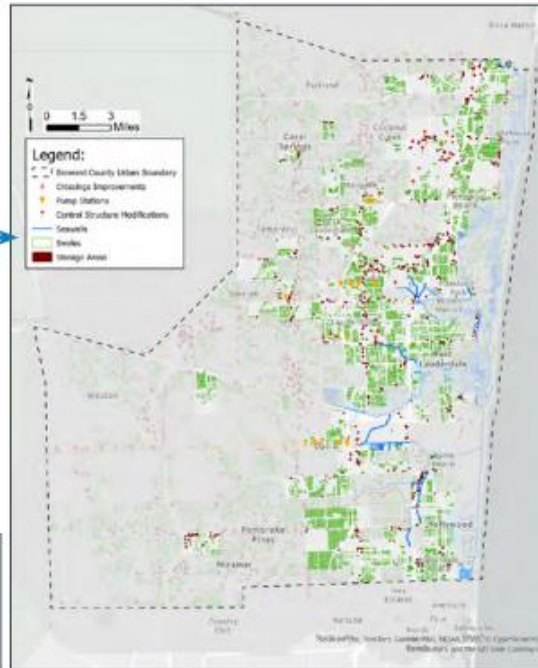
Zone 2: Eastern Areas

Eastern areas of the county are more influenced by SLR and storm surge.



Zone 3: Inland Areas

Western areas of the county have more inland characteristics.



Priority Zones



☐ Sea Walls and Flood Barriers

- Broward County Seawall Ordinance
 - provide a standard for flood mitigation infrastructure that serves as a barrier to tidal flooding
 - Ensure new shoreline structures and major shoreline improvements are designed for use as tidal flood barriers
- Sea Wall Replacement Alternatives
 - Provide flood protection
 - Enhance habitat and property value
 - Living shoreline
 - Planted terrace
 - Biofriendly seawall



□ Progress

- Collaboration with neighboring municipalities
- Defining areas of prioritization for sustainability and resiliency initiatives
- Focusing on community engagement and encourage involvement in City's improvements



☐ Swale Recapture Program

Swales provide necessary runoff storage

- Mitigating the impacts of storm events
- Improving water quality
- Alleviating stress on grey drainage infrastructure

Elements of Swale Program

- Creation and restoration of swales throughout the City
- Increased swale maintenance
- Enforcement of City Codes regulating activities permitted in the swale areas



□ Upcoming

- Swale Recapture Program
 - Increase the City's green spaces, for water storage and mitigation of flood events
- Presentation of the Vulnerability Assessment and Adaptation Plan
 - August 2025, performed by consultants Keith and Associates
- Implementing recommendations made by Broward County



Thank You

Questions and Comments

