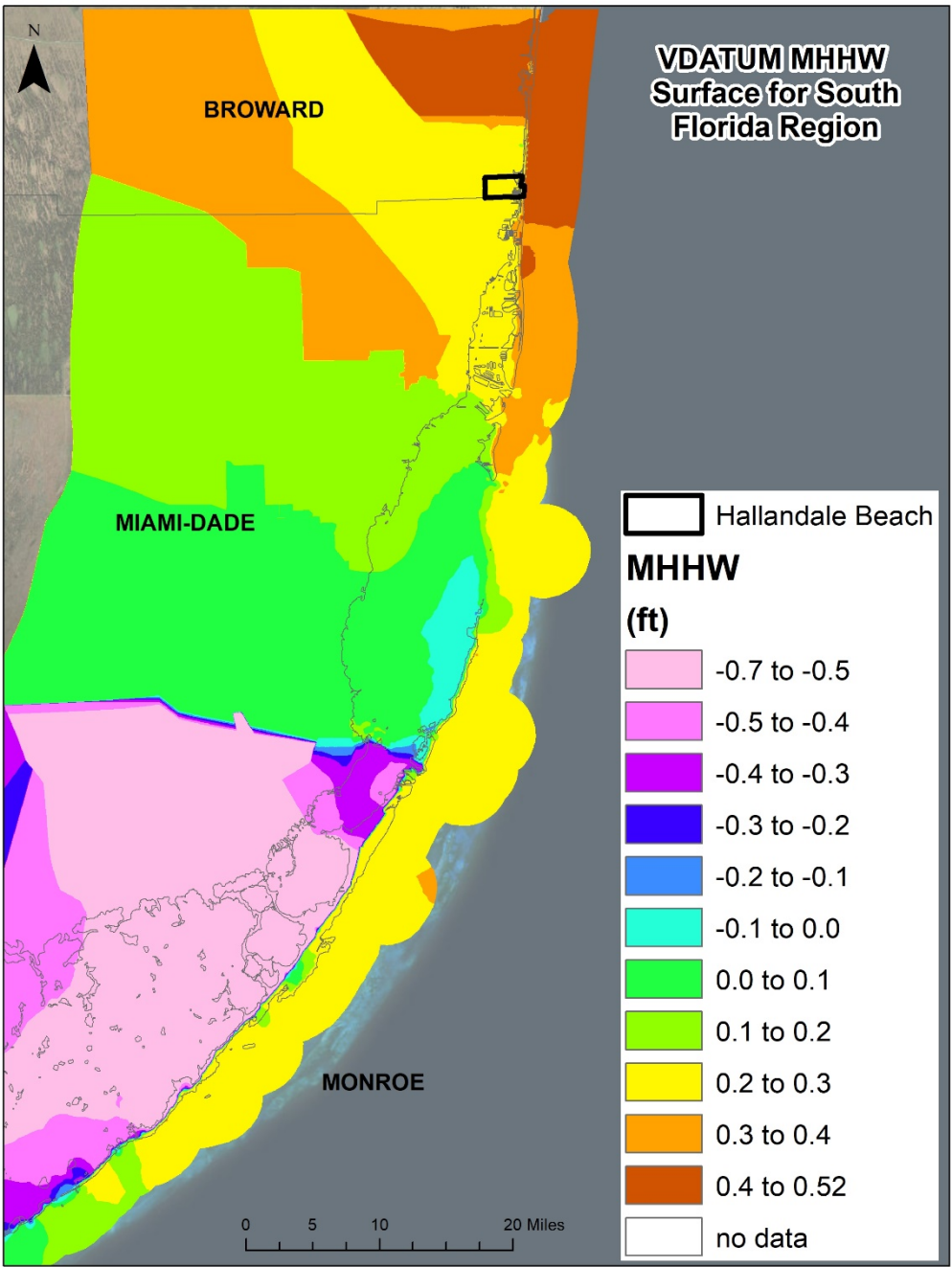


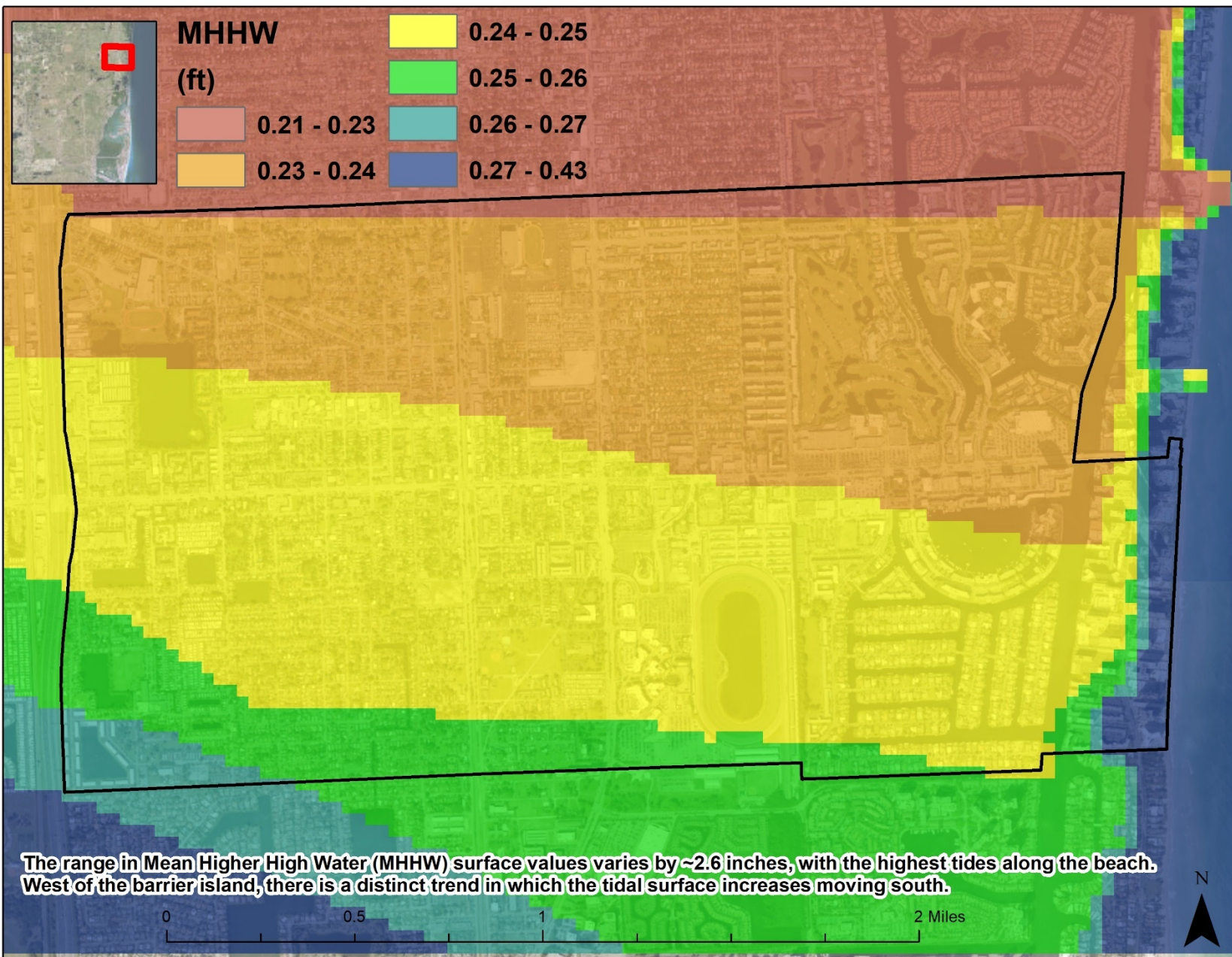
Peril of Flood: South Florida Regional Planning Council and Hallandale Beach

Summary

This document is a compilation of all work done by SFRPC on behalf of the City of Hallandale Beach through the Community Planning Technical Assistance Grant (2017) provided by the Florida Department of Economic Opportunity.

Data Analysis & Maps

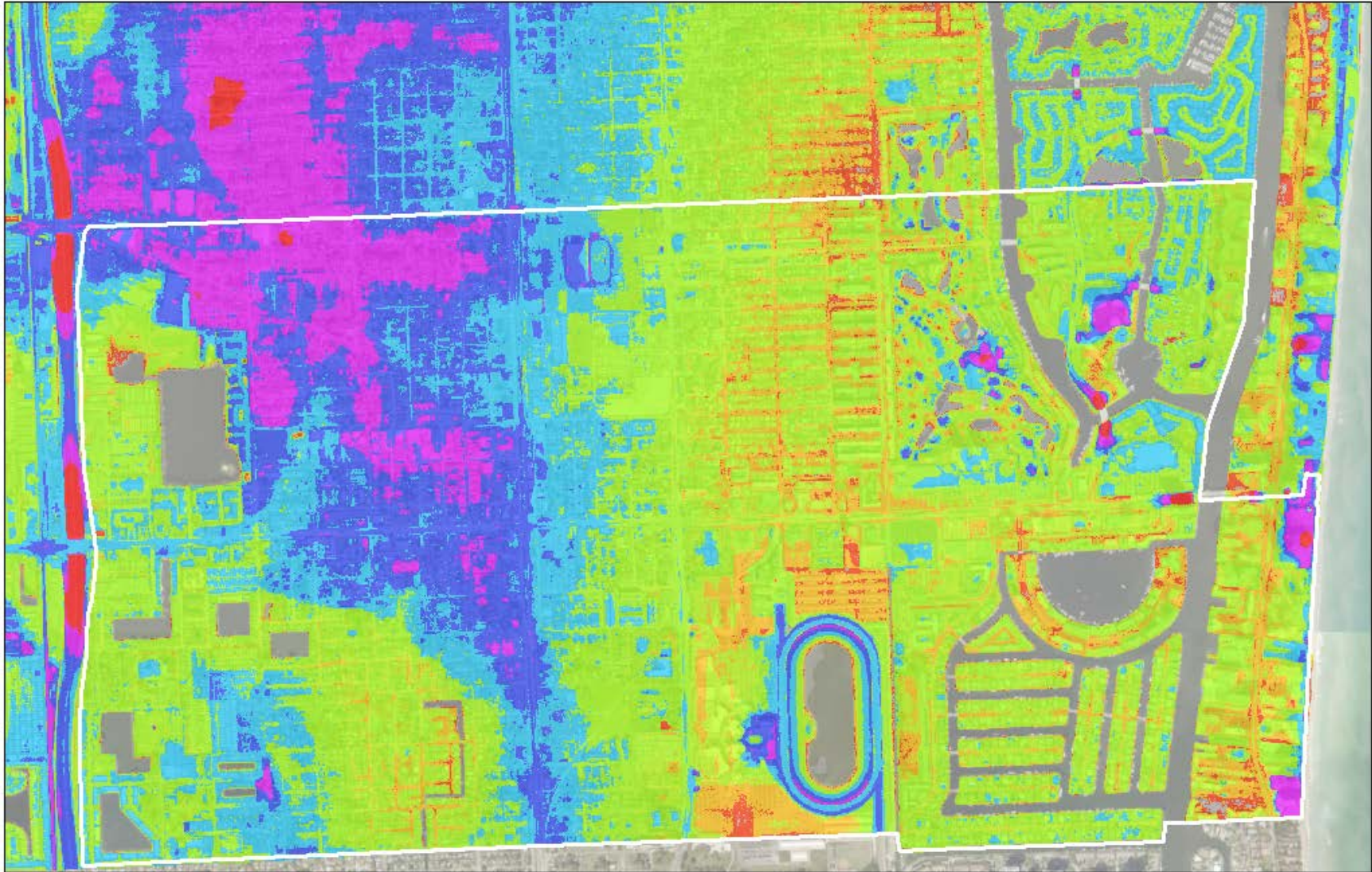










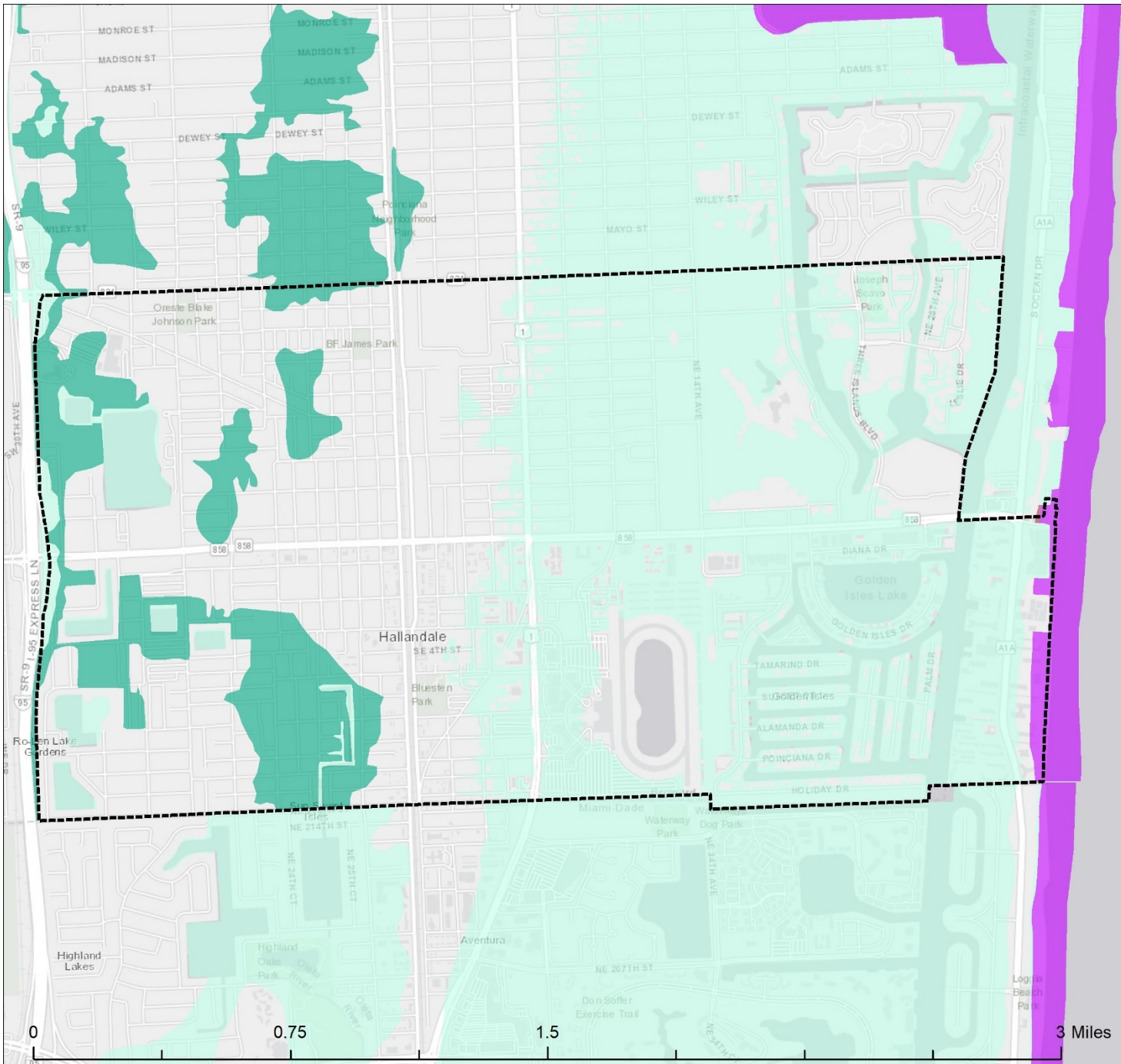
Elevation (ft NAVD88)

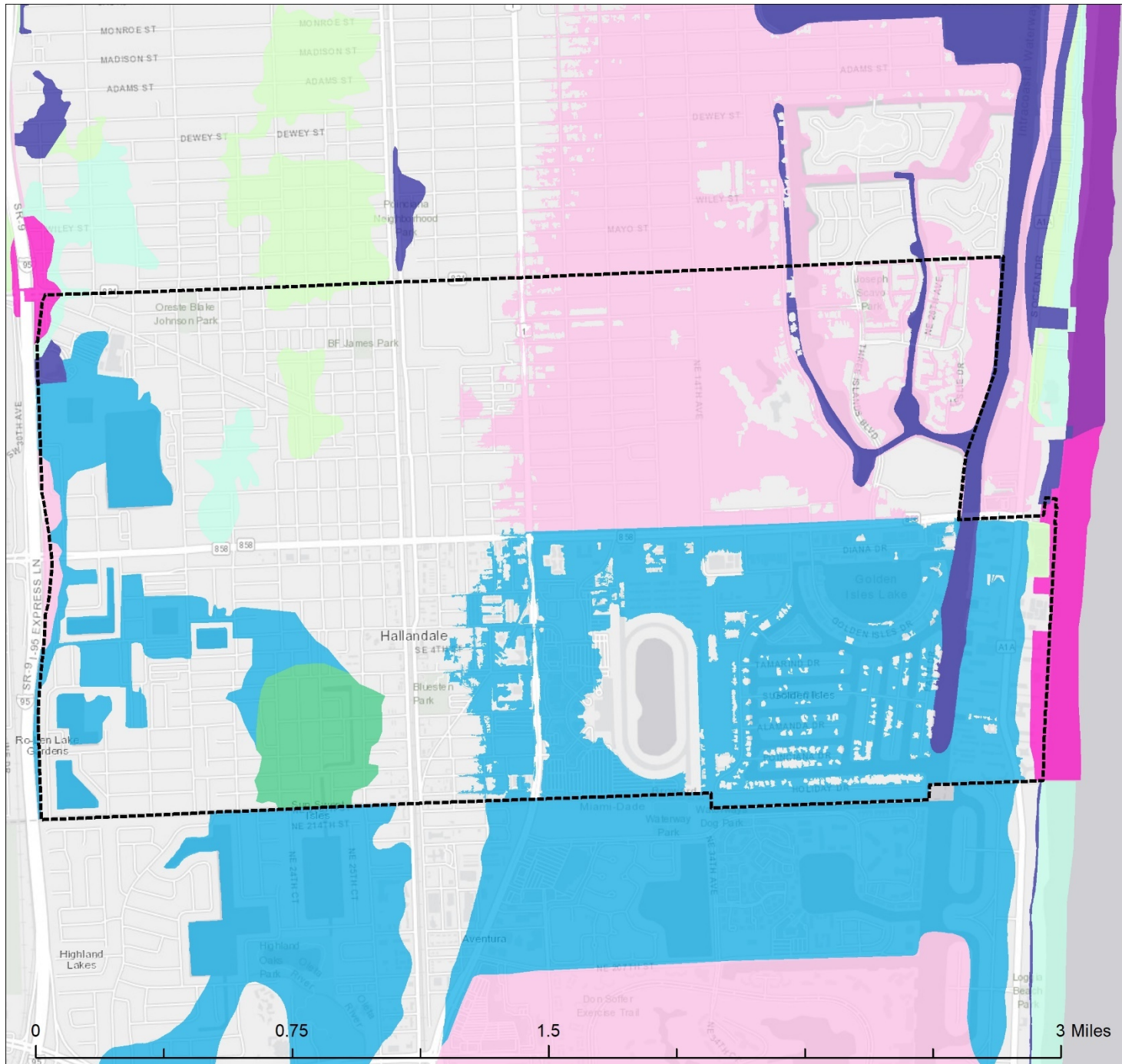
	1 - 2		3 - 4		6 - 8		10 - 15		
	< 1		2 - 3		4 - 6		8 - 10		15 - 30



FEMA Flood Zone 2016

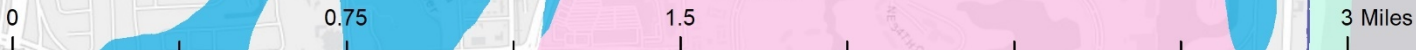
-  **VE: Special Flood Hazard Area: lower than the Base Flood Elevation**
-  **AE: Special Flood Hazard Areas in 100 year floodplain**
-  **AH: 1% Annual Chance of Shallow Flooding**
-  **X: Not in a Flood Zone**





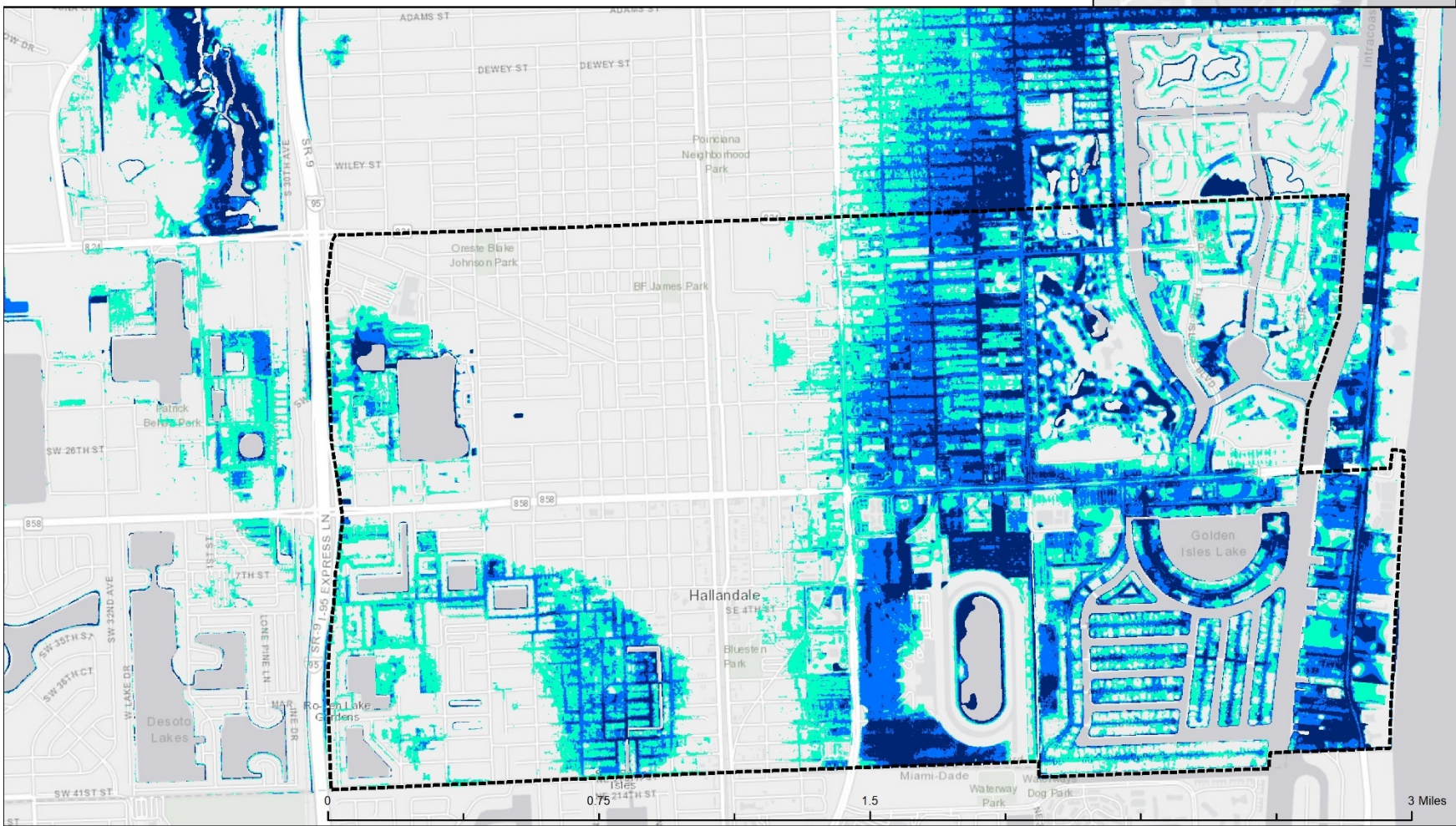
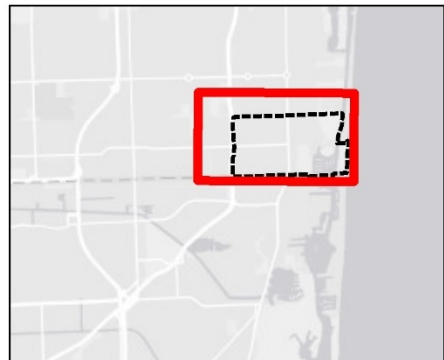
FEMA Base Flood Elevation (feet)

- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12



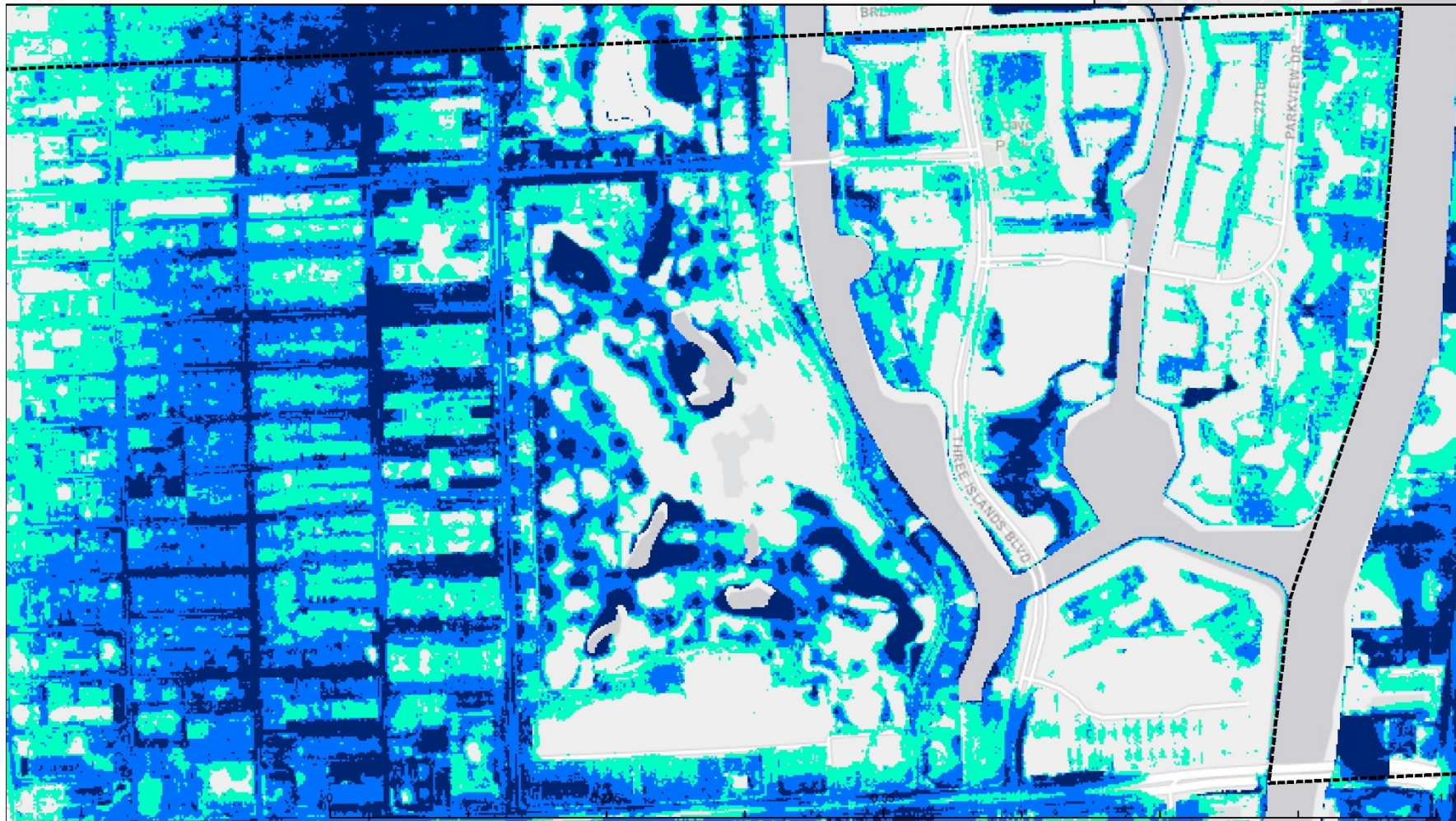
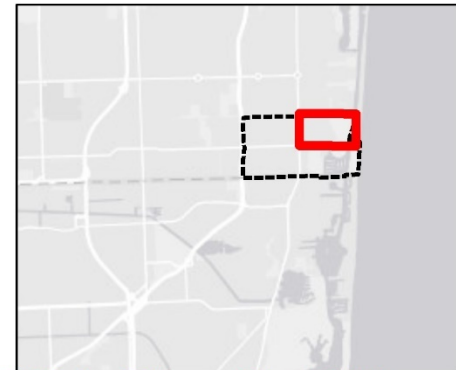
**Compound
Flood Event
Inundation
Extent
(2.79 ft NAVD88)**

-  **Current (2017)**
-  **1 FT SLR**
-  **2 FT SLR**



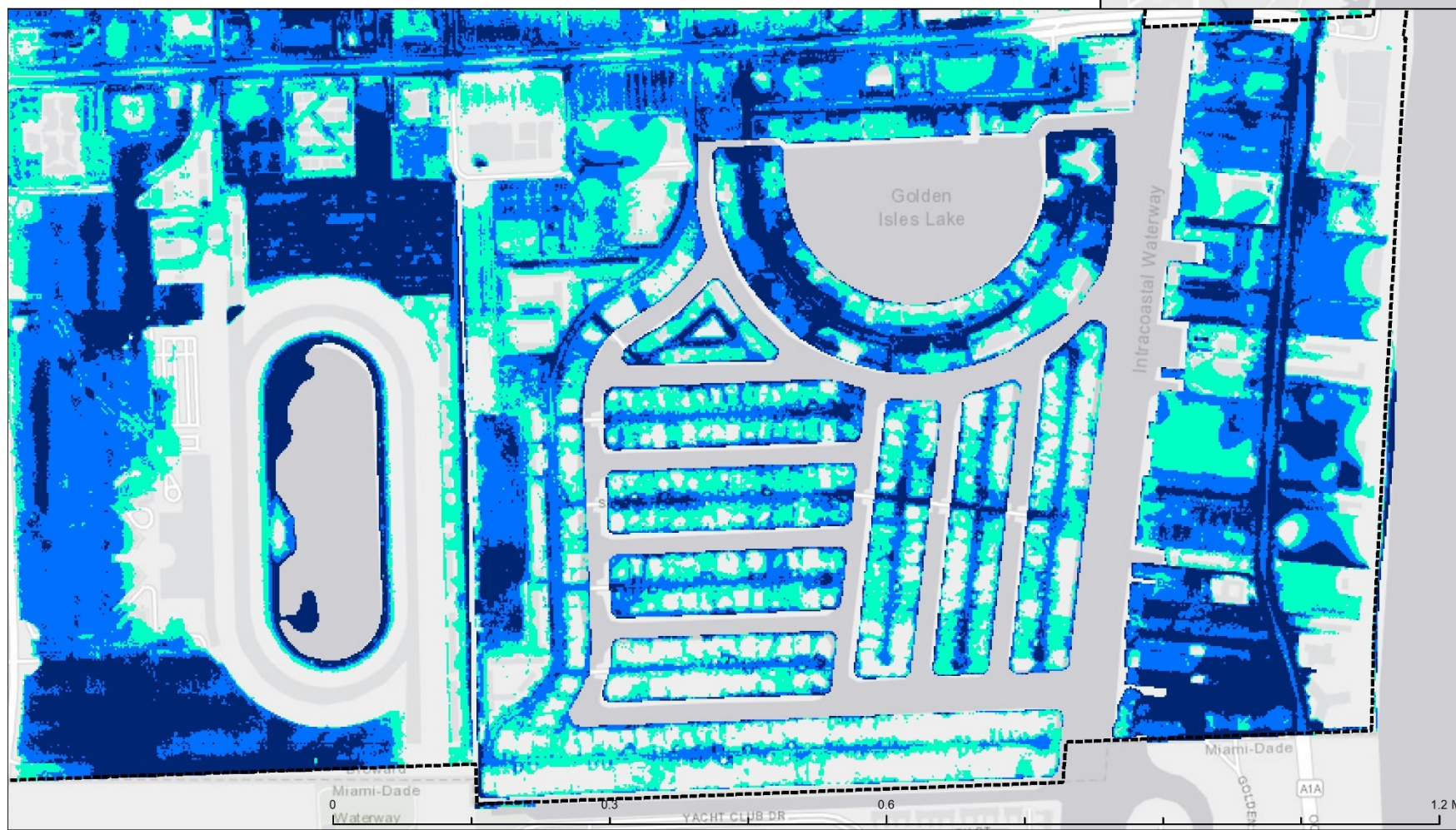
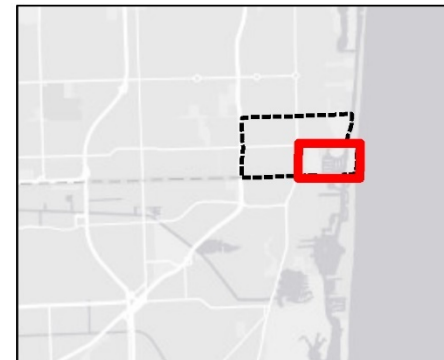
Compound
Flood Event
Inundation
Extent
(2.79 ft NAVD88)

- Current (2017)
- 1 FT SLR
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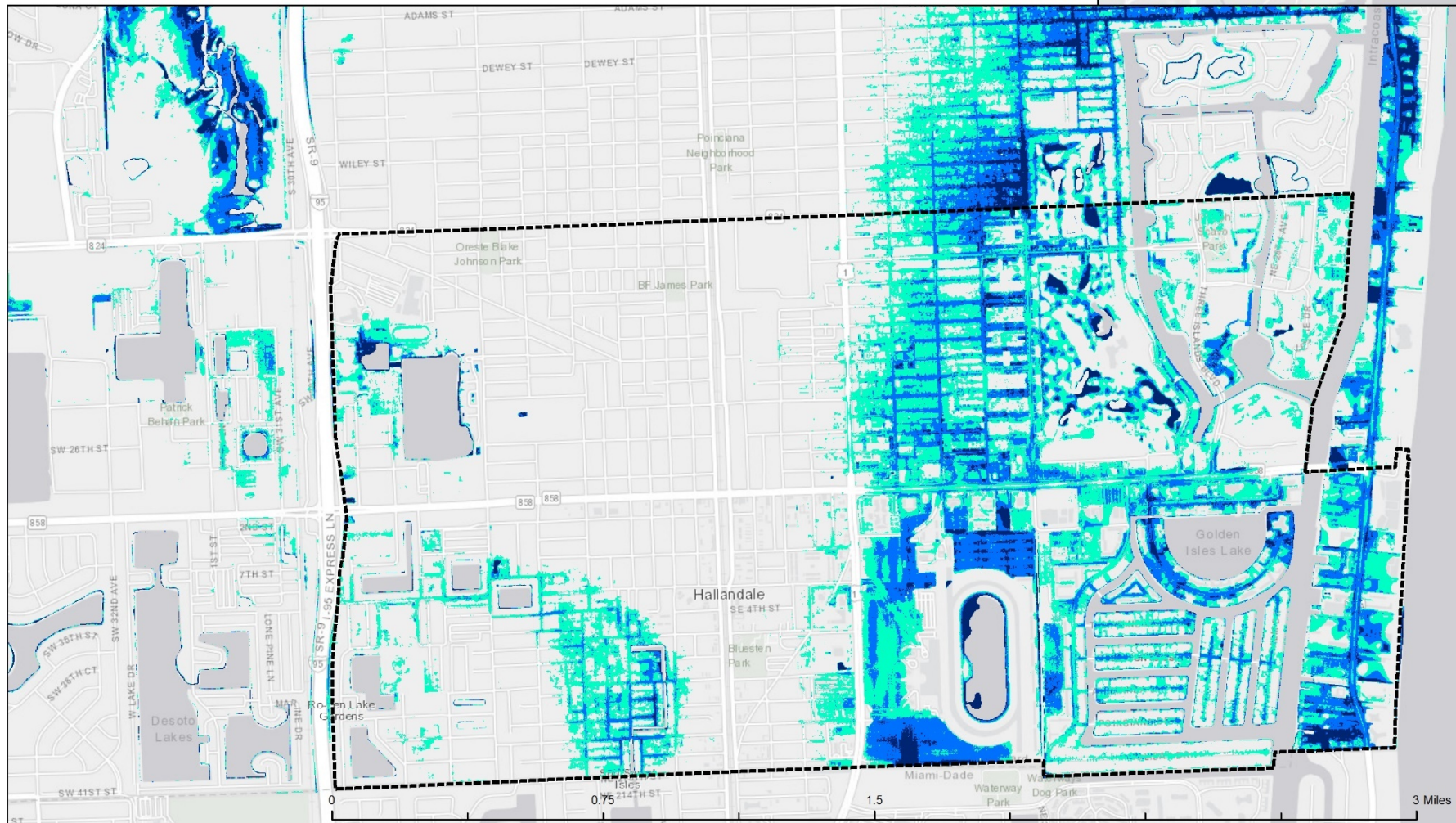
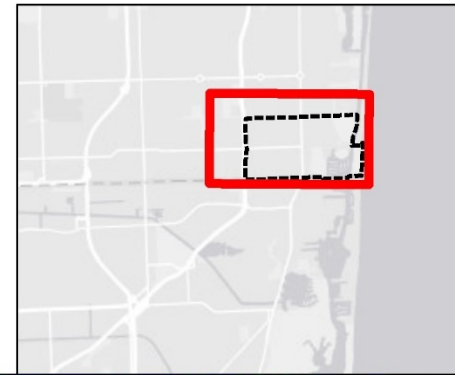
Compound
Flood Event
Inundation
Extent
(2.79 ft NAVD88)

- Current (2017)
- 1 FT SLR
- 2 FT SLR



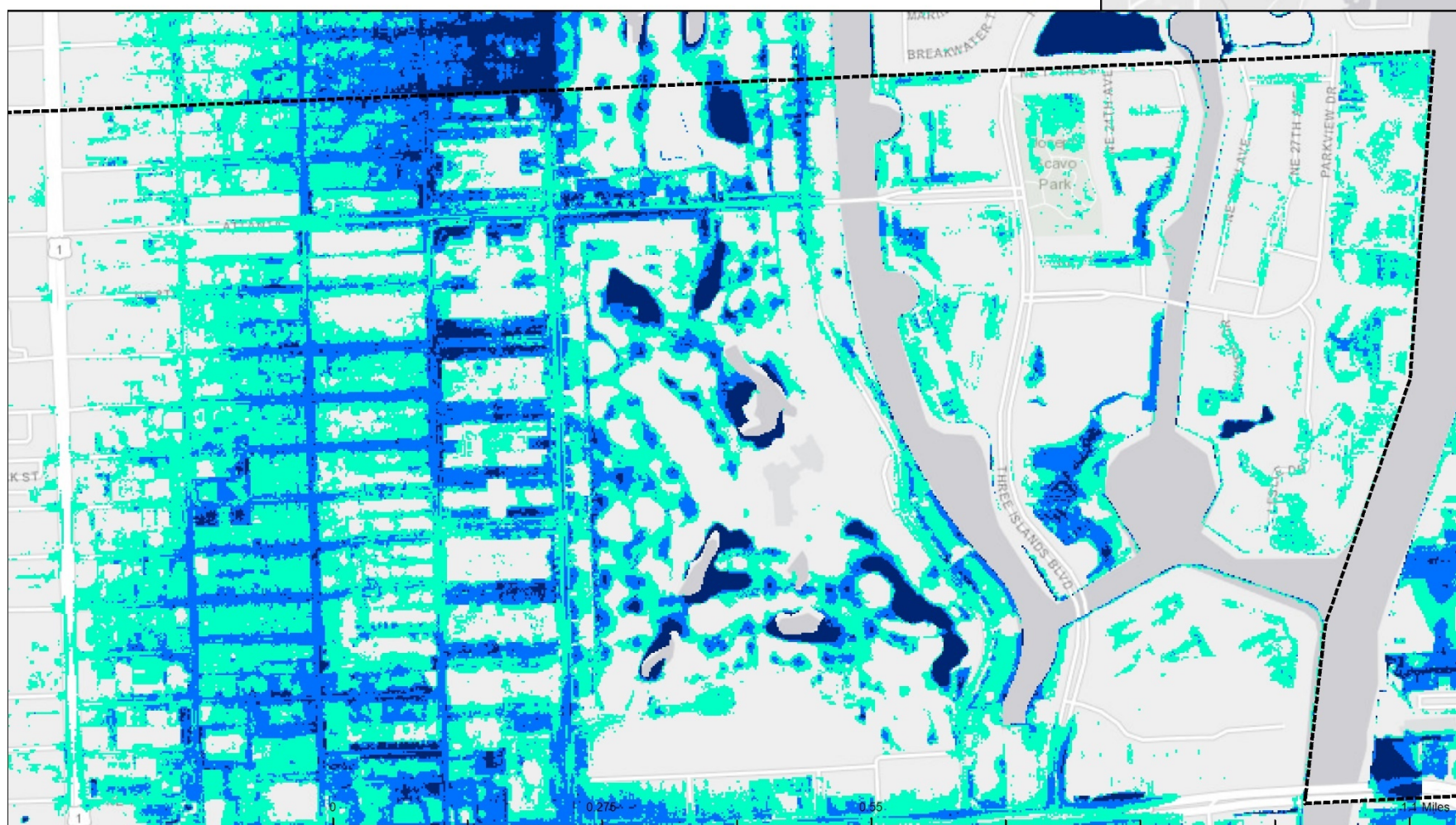
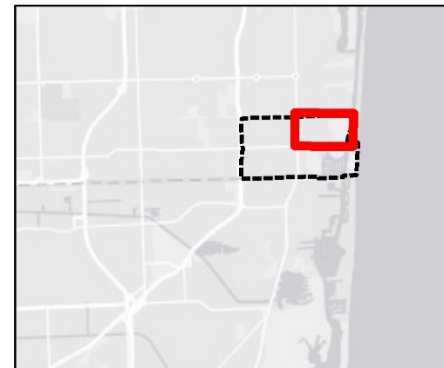
**King Tide
Flood Event
Inundation
Extent
(2.06 ft NAVD88)**

-  **Current (2017)**
-  **1 FT SLR**
-  **2 FT SLR**



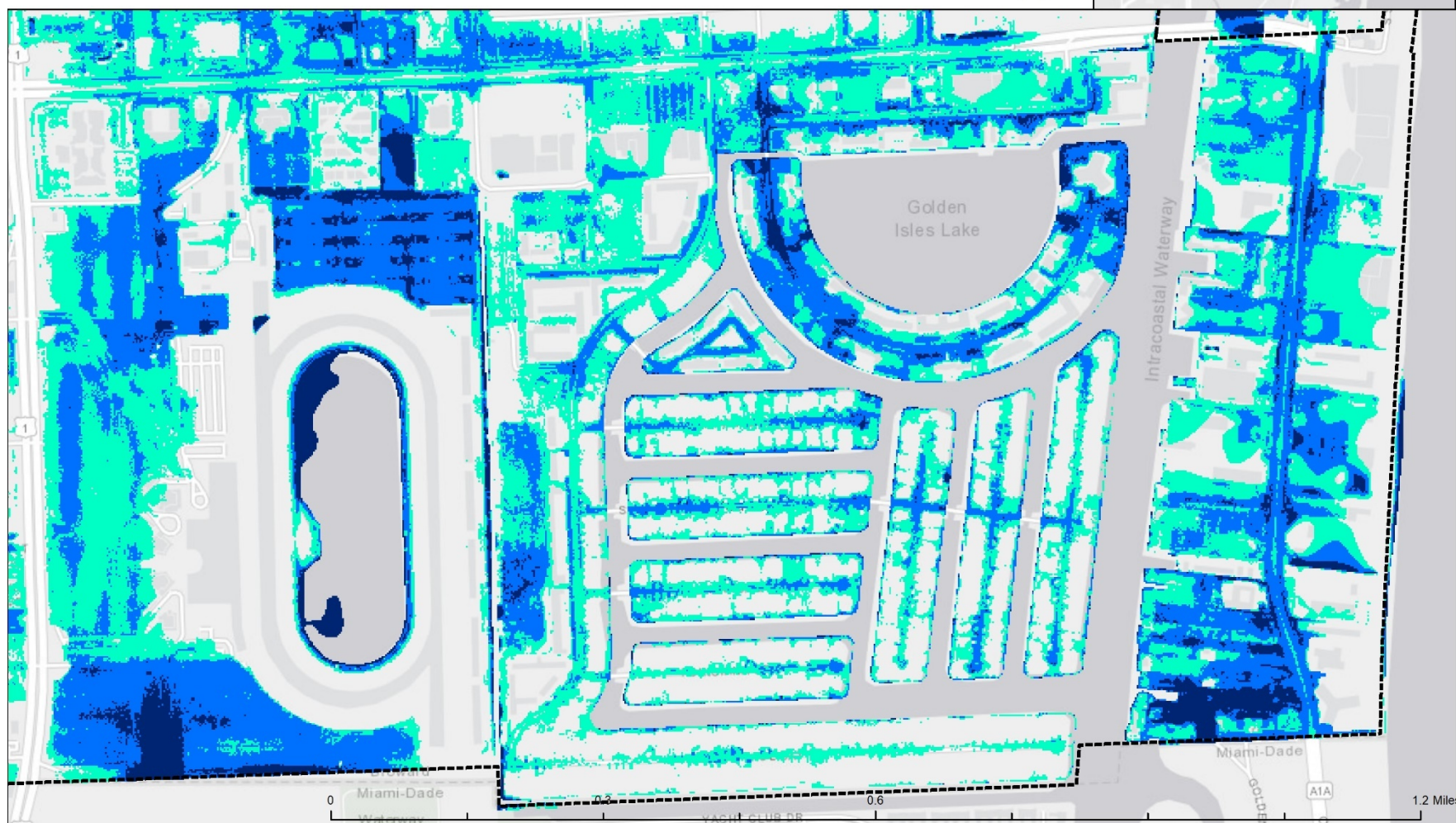
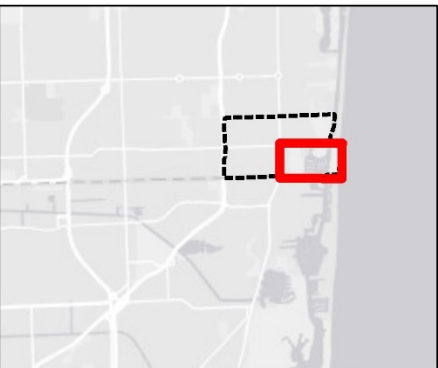
King Tide
Flood Event
Inundation
Extent
(2.06 ft NAVD88)

- Current (2017)
- 1 FT SLR
- 2 FT SLR






King Tide
Flood Event
Inundation
Extent
(2.06 ft NAVD88)

- Current (2017)
- 1 FT SLR
- 2 FT SLR



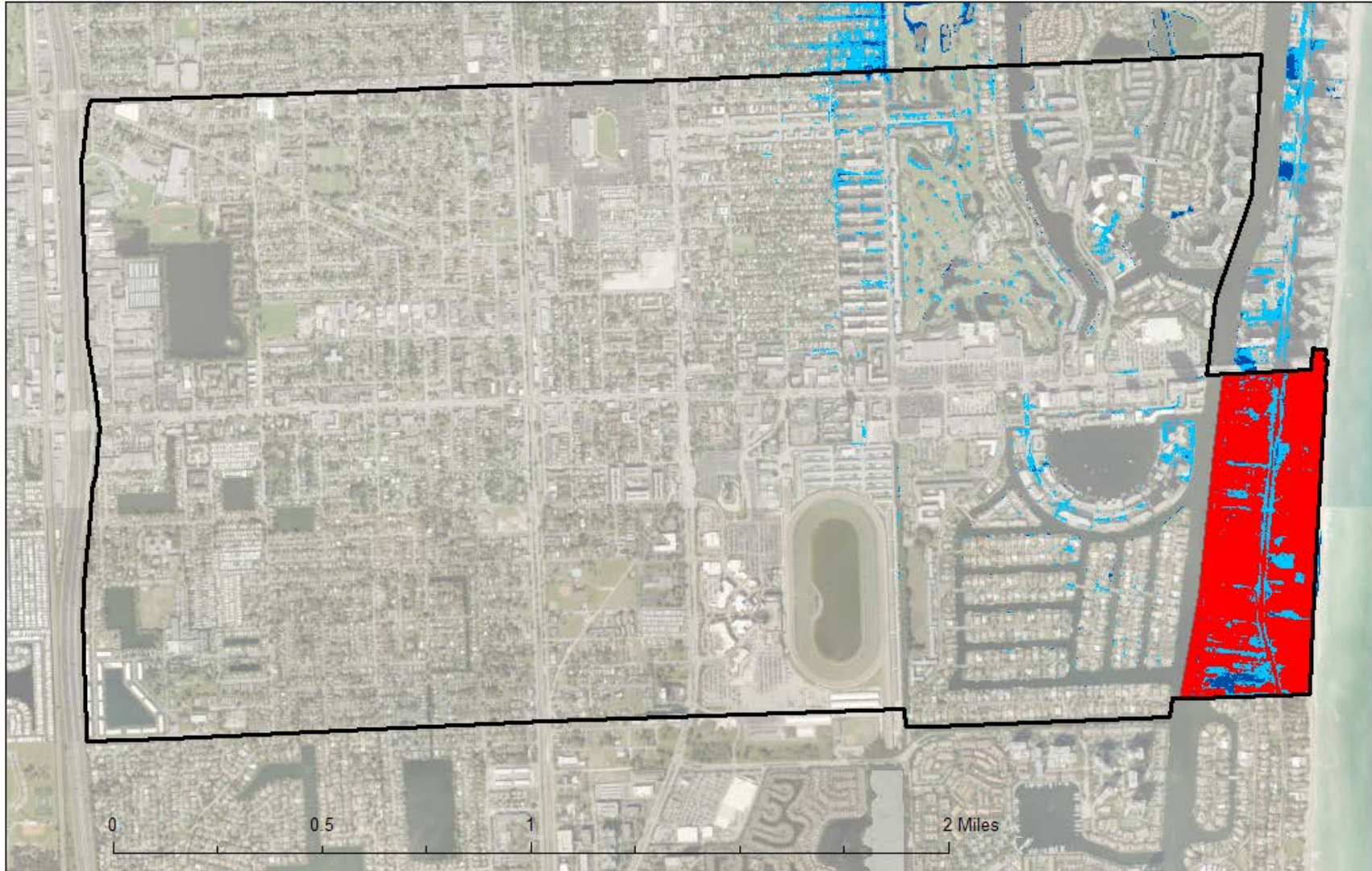


Hallandale Beach Coastal High Hazard Area (CHHA)

-  SLOSH 0-1ft surge
-  SLOSH greater than 1ft surge
-  FLUM CHHA

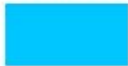



This map displays the latest and best available data modeled with 2016 SLOSH.



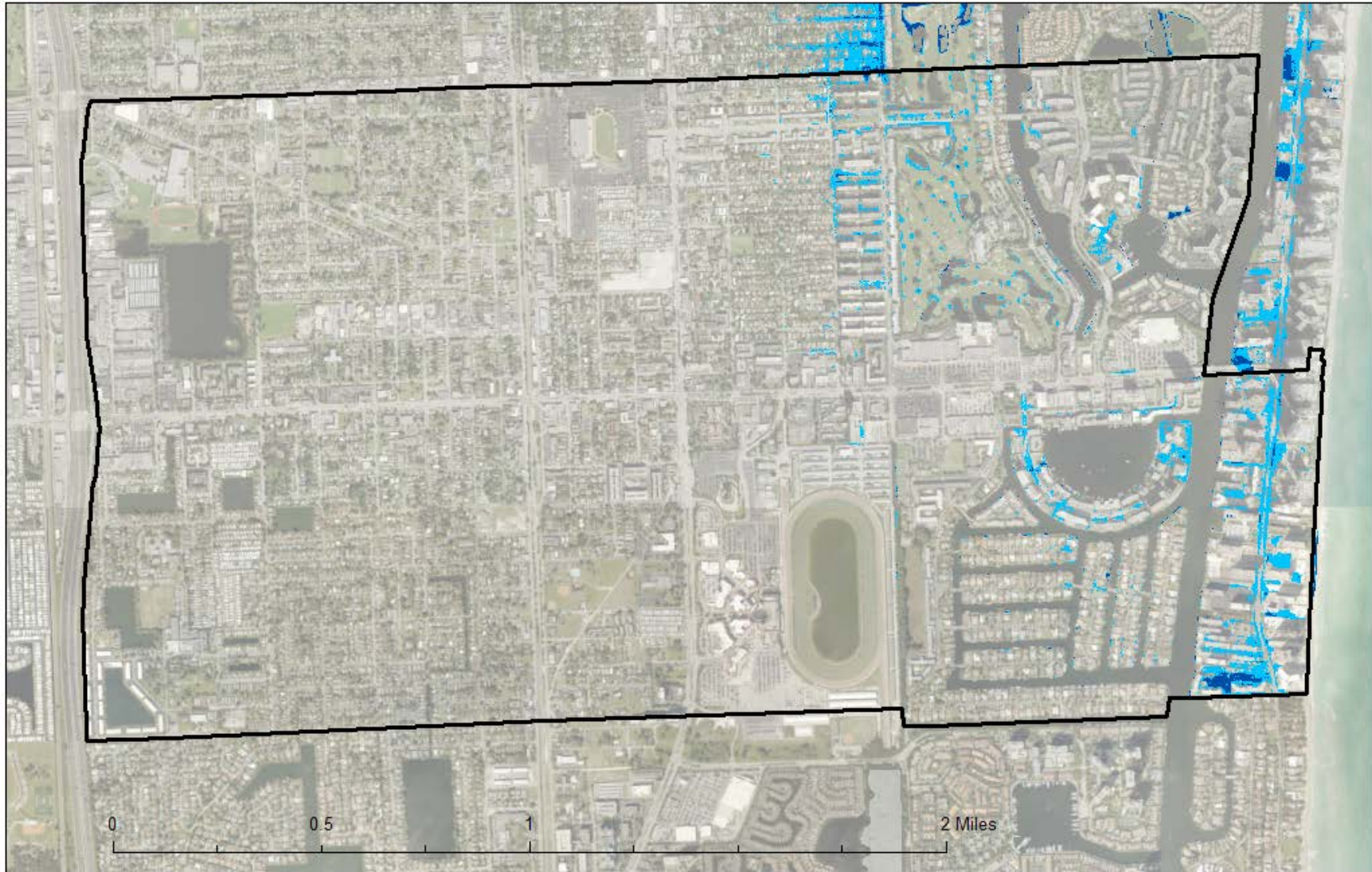


Hallandale Beach Coastal High Hazard Area (CHHA)

-  0-1ft surge
-  greater than 1ft surge



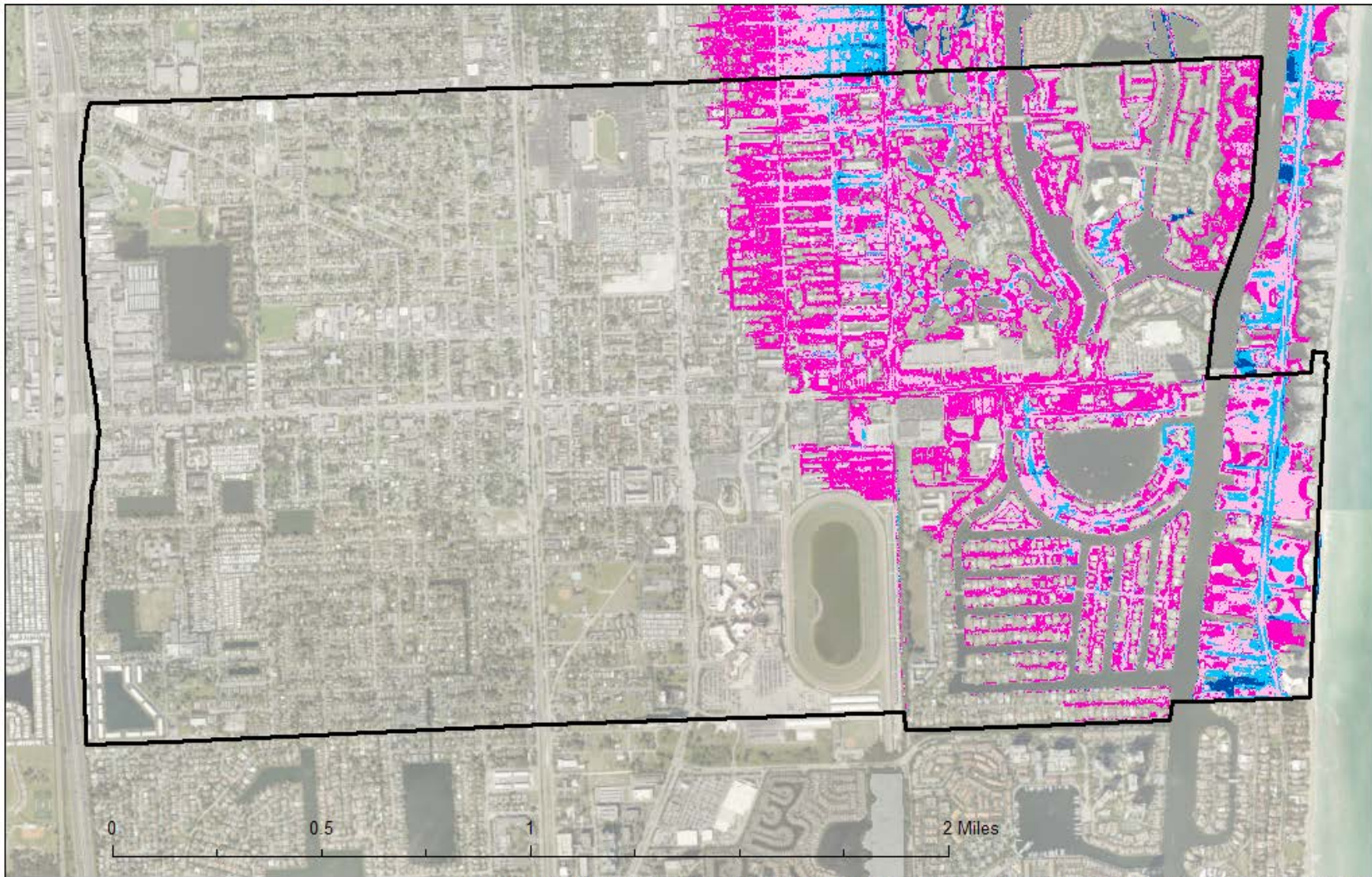
This map displays the latest and best available data modeled with 2016 SLOSH.





Hallandale Beach Coastal High Hazard Area (CHHA)

- 2060 CHHA (2 ft SLR)
- 2040 CHHA (1 ft SLR)
- Present Day CHHA 0-1ft surge
- Present Day CHHA >1ft surge



This map displays the latest and best available data modeled with 2016 SLOSH and two sea-level rise projections.

6.0 COASTAL MANAGEMENT ELEMENT

6.1 INTRODUCTION

The City of Hallandale Beach is an urban environment predominated by a mixture of commercial and residential development. Intensive development has occurred because of the proximity to the Atlantic Ocean. Because of the high density of development, coastal management issues faced by the City in the future will emphasize maintenance, redevelopment or enhancement of existing urban environments rather than protection of natural systems. The Coastal Management Element has been developed to serve as a planning framework for guiding future coastal management decisions in the City of Hallandale Beach.

6.2 GOALS, OBJECTIVES, AND POLICIES

6.2.1 Introduction

The City's goals, objectives, and policies were generally derived from the evaluation of existing and projected conditions within the coastal area.

GOAL 1: The City of Hallandale Beach shall restrict development activities that would damage or destroy coastal resources

OBJECTIVE 1.1: The City shall continue to protect and conserve remaining coastal wetlands, living marine resources, coastal barriers and wildlife habitat in conjunction with the Broward County Department of Environmental Protection (DEP).

- a. The City shall limit the specific and cumulative impacts of development or redevelopment upon wetlands, water quality, water quantity, wildlife habitat, living marine resources and the beach dune system through the review of developments in conjunction with County and state DEP. Any material to be excavated seaward of the coastal construction control line (CCCL) as part of construction adjacent to the CCCL shall remain in and be placed as fill onsite seaward of the CCCL. Any necessary fill material shall be free of construction debris, rocks or other foreign matter. Any such construction shall result in net beneficial impacts to the beach/dune areas, nesting sea turtles, their hatchlings, and their habitat.
- b. The City shall coordinate with DEP on the guidelines for local government implementation of sea turtle conservation programs developed in conjunction with the Florida Bureau of Marine Research.
- c. The City shall coordinate with DEP in order to contribute to the enhancement and restoration of local fisheries and hardbottom communities.

POLICY 1.1.1: The City shall review potential impacts of development plans on public facilities, services and evacuation plans for sites within the City's Coastal area

boundaries.

POLICY 1.1.2: The City shall restrict construction or redevelopment in areas controlled by State Coastal Construction Control Lines (CCCL) pursuant to the authority granted in Section 161.053, Florida Statutes ~~be consistent with Chapter 161.~~

POLICY 1.1.3: The City shall require that developers use construction methods which will minimize adverse environmental impacts and reduce the flood risk.

POLICY 1.1.4: The City shall continue to require building construction elevations consistent with minimum federal flood insurance regulations.

POLICY 1.1.5: The City shall continue to require building construction techniques be consistent with, or more stringent than, the flood-resistant construction requirements in the ~~in compliance with the~~ Florida Building Code and applicable flood plain management regulations set forth in Title 44 C.F.R. Part 60.

POLICY 1.1.6: The City shall identify and catalog all existing resource protection plans applicable to it. A designated City representative will make contact with each agency regulating resource protection and formulate strategies ~~to coordinate~~ to coordinate resource protection efforts to eliminate overlap.

OBJECTIVE 1.2: The City shall implement regulations, as needed, through the Unified Land Development Code, to maintain or improve estuarine environmental quality consistent with all applicable state and local regulations.

POLICY 1.2.1: The City shall continue to require that all new or refitted stormwater collection systems comply with applicable State and County codes.

POLICY 1.2.2: The City shall continue to monitor and abide by all NPDES requirements to reduce pollution and improve water quality in all City's waterbodies.

POLICY 1.2.3: The City shall continue to implement its canal maintenance dredging, as needed, to improve overall water quality and tidal flushing characteristics.

POLICY 1.2.4: The City shall continue to coordinate with representatives of all local coastal governments which are within ~~one~~ at least two miles of the boundaries of the Hallandale Beach Coastal area, including Dania Beach, Hollywood, Aventura, Golden Beach and Sunny Isles, to discuss plans and strategies and the implementation of specific programs to ensure (1) adequate sites for water-dependent uses, (2) prevent estuarine pollution, (3) control surface water runoff, (4) protect living marine resources, (5) reduce exposure to natural hazards, and (6) ensure public access to the Intracoastal Waterway and Atlantic beaches.

POLICY 1.2.5: The City shall continue to require that developers incorporate design elements which will benefit the natural and urban environments of Hallandale Beach.

Policy 1.2.6: The City shall ~~continue to encourage~~ promote the use of pervious pavement

and native landscaping methods in order to reduce the deleterious effects of runoff on adjacent ecosystems and property owners through zoning requirements and incentive programs.

OBJECTIVE 1.3: The City shall provide criteria for prioritizing shoreline uses in the following manner:

- a. Primary priority shall be afforded to water dependent uses including docking facilities, beach, beach easement accessways and residential small dock facilities.
- b. Secondary priority shall be directed to water related uses involving parking facilities for shoreline access and residential structures in conformity with all applicable codes.

POLICY 1.3.1: The City shall coordinate with the Broward County Department of Environmental Protection (DEP) in the siting of water dependent uses, including all marina siting activities.

POLICY 1.3.2: The City will ensure measurability through consistency with the Land Development Regulations. Development of these uses will occur through innovative design and siting criteria incorporated into the Land Development Regulations. Building permits shall be used to regulate these activities.

OBJECTIVE 1.4: The City shall coordinate with Broward County's DEP in protecting and enhancing dunes and coastal biological communities.

- a. Monitor and assist in the enforcement of State mandated construction standards which minimize the impacts of man-made structures on dunes.
- b. The City shall participate in the revegetating of the City beach with County DEP, as needed.

POLICY 1.4.1: The City shall participate in Federal, State and County Beach Renourishment Programs to replace beach sand deposits lost to erosion.

OBJECTIVE 1.5: Protect sites with historic or cultural value during site planning, development or redevelopment activities in accordance with procedures developed during implementation of policies of the Housing Element's goals, objectives, and policies.

POLICY 1.5.1: The City shall require that development or redevelopment plans include an assessment of sites or structures of historical or cultural value. Development shall include sensitive reuse of historic resources as they are identified.

GOAL 2: The City of Hallandale Beach shall protect human health and safety in the coastal area.

OBJECTIVE 2.1: The City shall adopt the hurricane evacuation times developed by the South Florida Regional Planning Council listed in SFRPC's Regional Hurricane

Evacuation Model Traffic Study.

All Scenarios

4-8 Hours

POLICY 2.1.1: The City shall participate with Broward County in the development of evacuation plans and strategies to provide adequate public transportation for residents during evacuation, with particular emphasis towards senior citizens and handicapped residents.

POLICY 2.1.2: The City shall request participation in the development of schedules for major construction and maintenance activities conducted by the State, County or Municipal transportation departments along primary evacuation routes. This is to avoid scheduling of major work during seasons of highest hurricane incidents which would hamper evacuation of the coastal area.

POLICY 2.1.3: The City will assist in the development and implementation of local public information programs to annually advise residents of high risk areas of evacuation routes and evacuation schedules.

POLICY 2.1.4: The City shall participate in regular reviews and revisions to Broward County's adopted Emergency Preparedness Plan.

POLICY 2.1.5: The City shall provide data regarding City evacuation facilities to the County to be used in the County's evacuation efforts for South Broward and North Miami-Dade County areas.

POLICY 2.1.6: The City shall require that proposed developments, which would result in a concentration of elderly and/or handicapped residents, provide plans and methods of evacuation as part of their development planning.

POLICY 2.1.7: The City shall require that development within the coastal area not impede traffic flow along the primary evacuation routes.

POLICY 2.1.8: The City shall follow the recommendations included in the hazard mitigation annex of the local peacetime emergency plan and applicable existing interagency hazard mitigation reports to reduce the exposure of human life and public and private property to natural hazards.

OBJECTIVE 2.2: The City shall direct populations away from High-Hazard Areas in concert with the established hazard mitigation strategies developed by Broward County.

POLICY 2.2.1: In the event of major destruction, the City shall enforce its present density standards. However, it may allow under certain conditions, densities which are no greater than those existing prior to the major destructive force.

Policy 2.2.2: The Coastal High-Hazard Area (CHHA) is defined by Chapter 163.3178(2)(h) F.S. as the area below the elevation of the category 1 storm surge line as established by Sea, Lake, and overland Surges from Hurricanes (SLOSH) computerized

storm surge model. Application of mitigation and the application of development and redevelopment policies, pursuant to S. 380.27(2), F.S. and any rules adopted thereunder, shall be at the discretion of the local government.

Policy 2.2.3: The City shall continue to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency (FEMA) to achieve flood insurance premium discounts for its residents.

Policy 2.2.4: New development and infrastructure in areas modeled to be within the CHHA and/or FEMA flood zones will be encouraged to use best practices to address sea level rise.

Policy 2.2.5: The City shall incorporate Low-Impact Development (LID) into all new public projects within FEMA flood zones and the CHHA, including infrastructure improvements proposed in the Basis of Design Report (2016). LID is defined as an ecologically-based stormwater management approach favoring soft engineering to manage rainfall on site through a vegetated treatment network (University of Arkansas Community Design Center, 2010).

Objective 2.3: The City shall develop additional strategies to identify and address issues related to climate adaptation in cooperation with Broward County, the Broward County Planning Council, the Southeast Florida Regional Climate Change Compact, and other applicable Federal, State, and local agencies.

Policy 2.3.1: Based on modeling of current and future Sea-Level Rise, the City of Hallandale Beach shall continue to identify potential adverse impacts and map areas vulnerable to these impacts. This shall include the identification of existing, pending, and proposed development and infrastructure—including air conditioning units, water pumps, generators and any other ground-mounted electrical and mechanical equipment—that would be inappropriate or unsafe as a consequence of current and future flood hazard within the plan’s long-range planning horizon.

Policy 2.3.2: The City shall develop an *Adaptation Action Area* designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high-tides and storm surge and are vulnerable to the impacts of rising sea level, and consider policies within the Coastal Management Element to improve resilience to coastal flooding resulting from high-tide events, storm surge, flash floods, stormwater runoff, and related impacts of Sea-Level Rise. Designating adaptation action areas should be done in coordination with Broward County, adjacent municipalities where applicable, Florida Department of Transportation, and other agencies that plan for or own, operate, and maintain public facilities/infrastructure within or crossing proposed adaptation action areas. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge.

Policy 2.3.3: The City shall continue to include development and redevelopment

principles, strategies, and engineering solutions that reduce flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of Sea-Level Rise.

Policy 2.3.4: The City shall continue repairs and improvements to its stormwater management which is capable of functioning under projected Sea-Level Rise within the lifespan of the capital improvements. The City shall utilize the unified Sea-Level-Rise projections established by the Southeast Florida Regional Climate Change Compact.

GOAL 3: The City shall discourage or limit development in areas subject to destruction by natural disasters.

OBJECTIVE 3.1: The City shall continue to monitor established limits on levels of service and areas of service for infrastructure systems to existing levels of service within the high hazard area. The City on an on-going basis shall continue to monitor coastal infrastructure to ensure that coastal infrastructure capacities are not expanded beyond existing capacities.

POLICY 3.1.1: The City shall not expand capacity of utilities or other infrastructure serving high-hazard areas beyond existing levels, but will only make improvements based on public safety, adaptation, and maintenance needs.

OBJECTIVE 3.2: The City shall continue to coordinate with Broward County in the development of a post-disaster redevelopment plans and adopt such plans by reference within one hundred twenty (120) days after the County submits their plan, if deemed compatible with City plans. If not, mediation will be sought to settle disputes.

POLICY 3.2.1: The City shall establish priorities for shoreline land uses as part of the Post-disaster redevelopment plan.

POLICY 3.2.2: As part of the City's Post-Disaster Plan, the City will develop a plan for the replacement of infrastructure which integrates additional innovative climate adaptation and mitigation in the CHHA eastal High Hazard Area. The City shall limit development in areas known to suffer repeated damage during hurricane, storm surge, or other flooding events.

Policy 3.2.3: The City shall prepare Post-Disaster Redevelopment Plans in the CHHA which reduce or eliminate the exposure of human life, public property, and private property to natural hazards by 2020.

Policy 3.2.4: The City shall begin retrofitting and/or relocating public facilities out of flood zones and the CHHA following damage or destruction from natural disasters, tidal flooding, and/or Sea-Level Rise with the exception of water dependent uses such as beach access corridors.

OBJECTIVE 3.3: The City shall maintain the five existing public access walkways to the Beach between private developments and the accessibility to the beach at the two City-owned beach parks.

POLICY 3.3.1: The City will work with State, Federal and/or private business funding sources to provide matching funds or other incentives for coastal land acquisition for additional access corridors.

POLICY 3.3.2: The City will participate in monitoring bus routes in order to ensure adequate bus transit and bus stops for public access to beaches.