

# PALM BEACH COUNTY'S REVIEW AND EVALUATION OF FEMA'S COASTAL FLOOD RISK STUDY

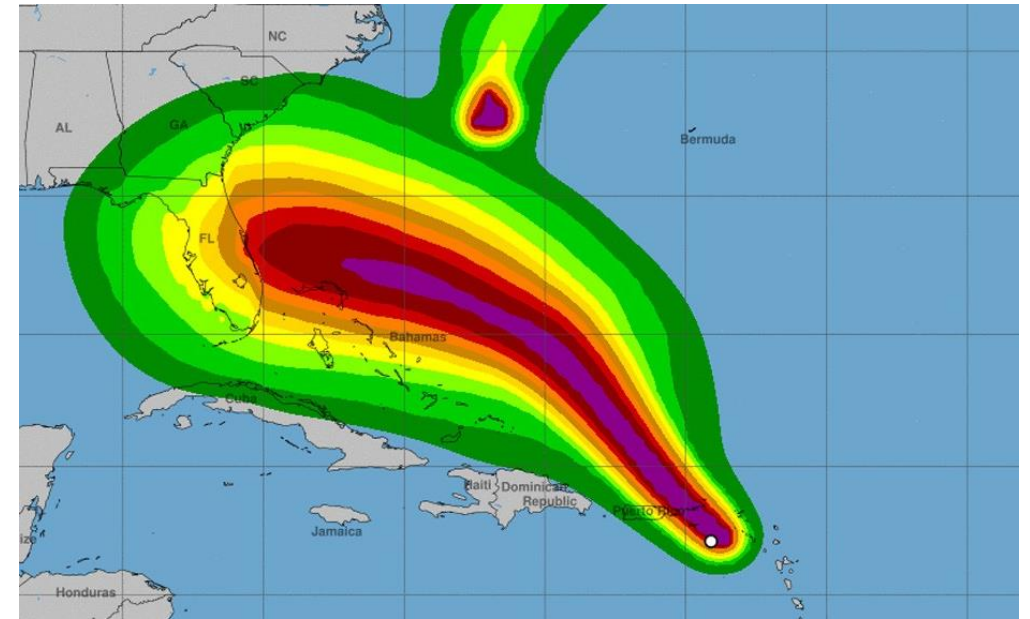


**Palm Beach County  
Local Mitigation Strategy (LMS)  
Working Group Meeting  
December 9, 2020**

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# AGENDA

- Background and History
- Key Findings
- Process and Appeals
- Activities of Other Affected Counties
- Direction Obtained
- Completed and Future Coordination
- Additional Information
- Discussion





# BACKGROUND AND HISTORY

The National Flood Insurance Program (NFIP) is a voluntary Federal program intended to:

- Reduce future flood damage through community floodplain management activities, and
- Provide protection for property owners by enabling the purchase of flood insurance

The Federal Emergency Management Agency (FEMA) is responsible for administering the NFIP

Flood Insurance Study (FIS) reports and Flood Insurance Rate Maps (FIRMs), prepared by FEMA, provide flood hazard information that is used to establish flood insurance premiums

FEMA periodically updates information on flood hazards

# BACKGROUND AND HISTORY (CONT'D)

The most recent coastal storm surge analysis for south Florida used data and tools from the 1970s

In 2013, FEMA initiated the Coastal Flood Risk Study Project for the South Florida Study Area (Coastal Study), which includes Palm Beach, Broward, Miami-Dade and Monroe Counties

In December 2019, FEMA published preliminary FIRMs and FIS reports for coastal Palm Beach County

In January 2020, the County issued a task order to an engineering consultant to review and evaluate the data and methods used by FEMA

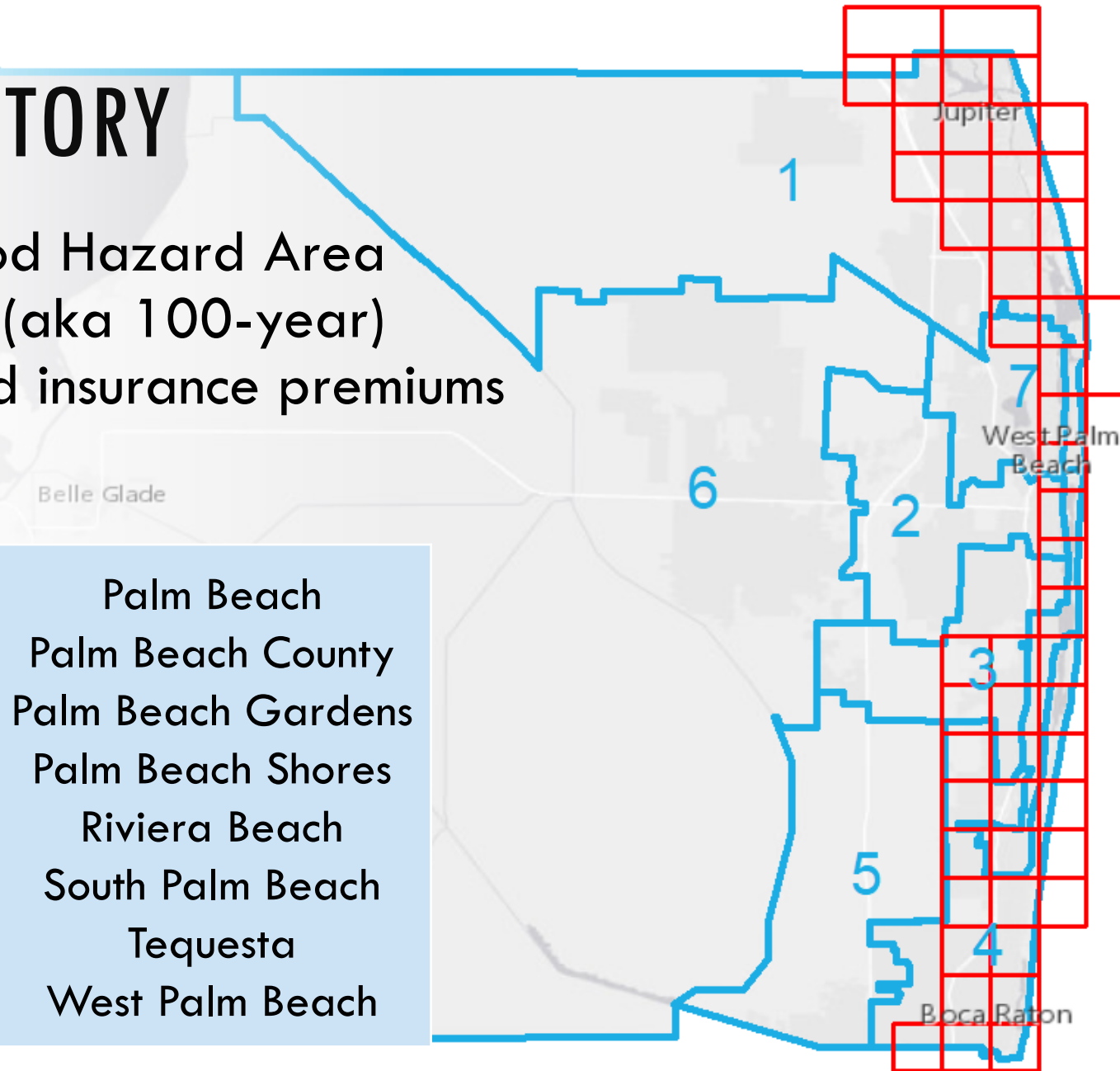


# BACKGROUND AND HISTORY

FEMA is updating the Special Flood Hazard Area (SFHA) for the 1% annual chance (aka 100-year) event – which is the basis for flood insurance premiums

## Municipalities Affected:

Boca Raton	Jupiter	Palm Beach
Boynton Beach	Jupiter Inlet Colony	Palm Beach County
Briny Breezes	Lake Park	Palm Beach Gardens
Delray Beach	Lake Worth Beach	Palm Beach Shores
Gulfstream	Lantana	Riviera Beach
Highland Beach	Manalapan	South Palm Beach
Hypoluxo	North Palm Beach	Tequesta
Juno Beach	Ocean Ridge	West Palm Beach



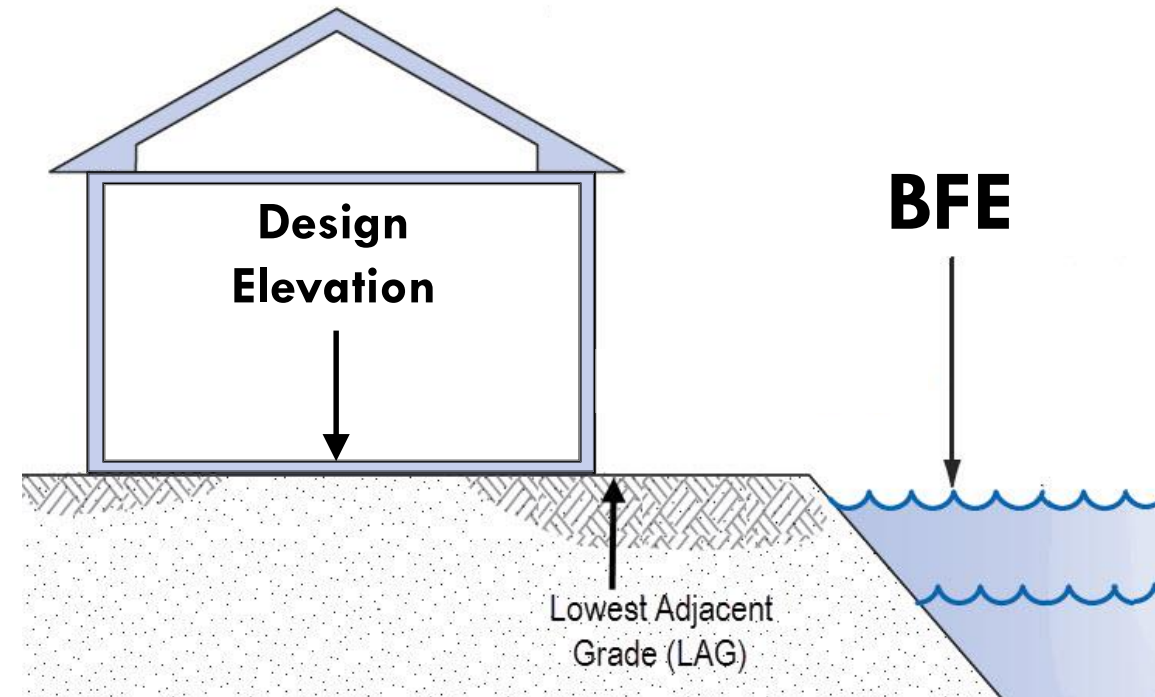
# KEY FINDINGS FROM PALM BEACH COUNTY'S REVIEW AND EVALUATION OF FEMA'S COASTAL STUDY

- Differences were observed between the County's elevation data and FEMA's elevation data within the Special Flood Hazard Area (SFHA)
- SFHA net increase of ~1,900 acres (as compared to 2017 FIRMs)
- Many areas have higher Base Flood Elevations as compared to the 2017 FIRMs
- Agreement between measured and FEMA-simulated water levels was less than favorable
- FEMA's model setup had limited accuracy in simulating storm surge
- FEMA's validation storms may not have been appropriate given the magnitude of the storm surge generated, the regional extent of the surge, locations of water level measurements and limited measured data
- FEMA's results appear to have been impacted by model grids
- There were several locations where FEMA's model was insufficient to accurately model hydrodynamic and coastal flooding processes

# KEY FINDINGS (CONT'D)

## BASE FLOOD ELEVATIONS (1 OF 3)

- FEMA defines **Base Flood Elevations (BFEs)** within the SFHA
- **BFEs** are elevations to which surface water is expected to rise to or exceed during the base flood (aka 1% annual chance flood or 100-year flood)
- The **design elevation** is the elevation that all new and substantially improved buildings must be elevated to in order to lower the risk of flood damage
- **Design elevations** are typically higher than **BFEs**
- Higher **BFEs** may prevent property owners from making improvements to existing structures





# KEY FINDINGS (CONT'D)

## BASE FLOOD ELEVATIONS (2 OF 3)

- While BFEs decreased or remained the same in some areas of the County, many areas have higher BFEs as compared to the 2017 FIRMs

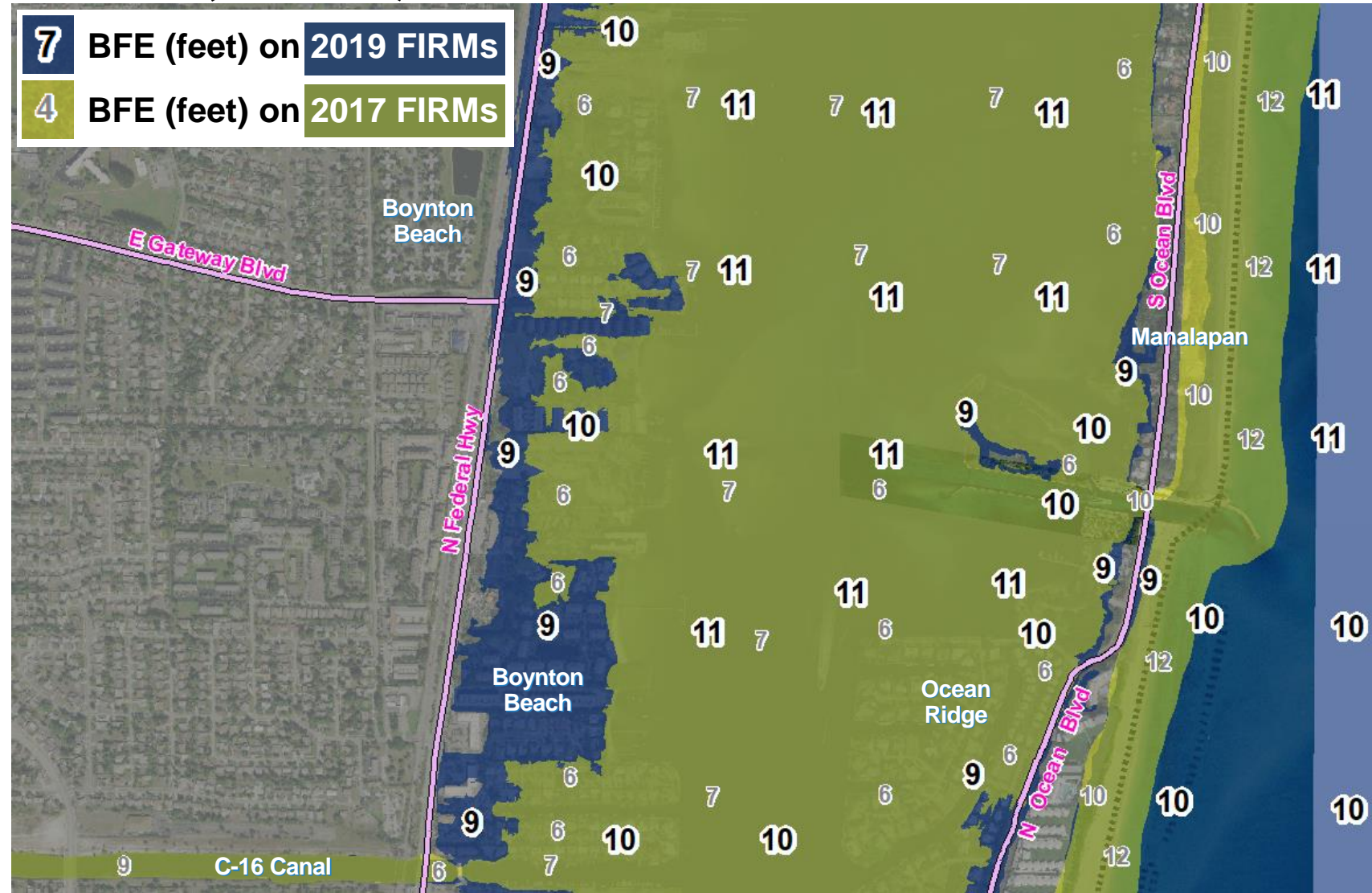




# KEY FINDINGS (CONT'D)

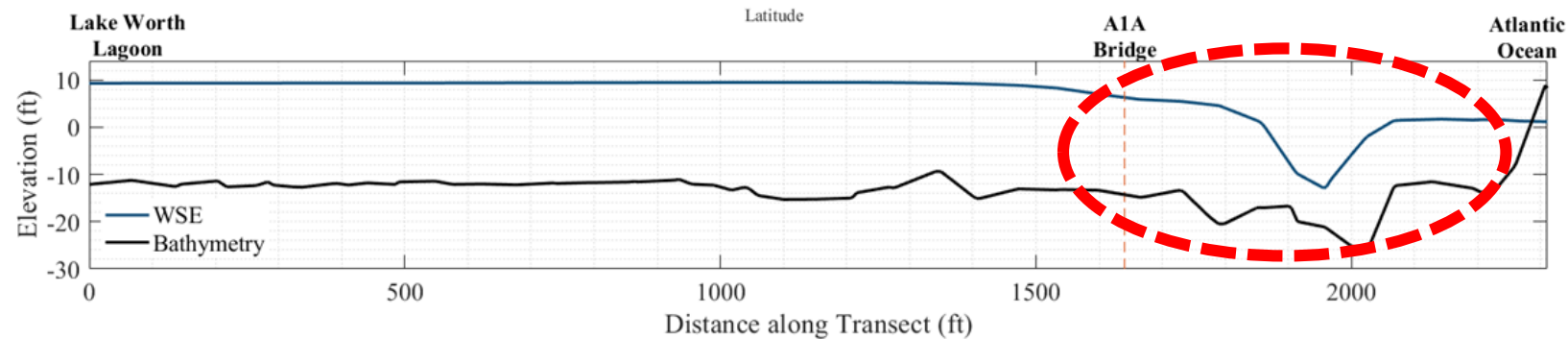
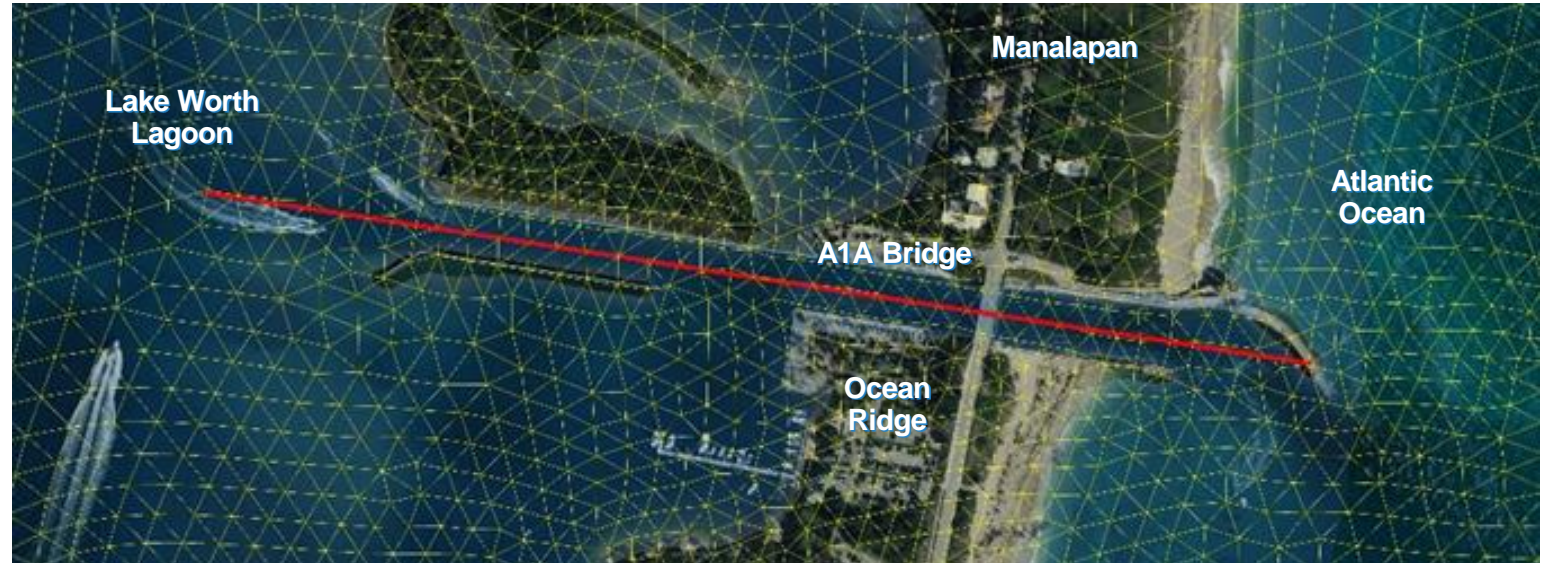
## BASE FLOOD ELEVATIONS (3 OF 3)

- While BFEs decreased or remained the same in some areas of the County, many areas have higher BFEs as compared to the 2017 FIRMs



# KEY FINDINGS (CONT'D)

- FEMA's model did not allow water to flow out through the **Boynton Inlet** creating unrealistic water surface elevations in the inlet and **Lake Worth Lagoon**



WSE = Water Surface Elevation  
Bathymetry = elevation of underwater terrain



# PROCESS AND APPEALS

■ Preliminary Maps Issued – December 20, 2019

■ Consultation Coordination Officer Meeting and Public Open Houses – February 4-5, 2020

■ TBD (expected March/April 2021)

■ Begins after 2nd notice published in local newspaper

■ Duration TBD based on appeal(s)

■ Letter of Final Determination

■ Maps and new building requirements are effective; **Communities must adopt FIRMs into floodplain ordinances**

**WE ARE  
HERE**



**Preliminary  
Phase**

**Meetings**

**Publish  
Federal  
Register Notice**

**90-day Appeal  
and Comment  
Period**

**Resolve  
Appeals and  
Finalize Maps**

**6-month  
Compliance  
Period**

# PROCESS AND APPEALS (CONT'D)

- Any community or individual property owner can **appeal** proposed changes to flood hazard information or **comment** on preliminary FIRMs and FIS reports
- An appeal must be based on **data and documentation** showing the proposed flood hazard information shown on the preliminary FIRM or in the FIS report is **scientifically or technically incorrect**
- **Appellants need to demonstrate** better methodologies, assumptions or data exists and **provide alternative analyses** that incorporate those methodologies, assumptions, or data if appropriate
- The **results must show an overall change in the flood hazard information** shown on the preliminary FIRM and/or in the FIS report



# ACTIVITIES OF OTHER AFFECTED COUNTIES

- **Broward County** – updated topography data and additional modeling information provided to FEMA and additional modeling requested; FEMA declined to do additional modeling and referred Broward County to the appeal process; appeal not expected
- **Miami-Dade County** – many concerns with draft work maps identified; preliminary FIRMs expected to be published in January 2021
- **Monroe County** – sent questions and requested additional information and analyses to FEMA in May 2020; FEMA responded in June 2020 that they would not be revising the study; County Commission voted in June 2020 to prepare an appeal; 90-day appeal period start date TBD

# DIRECTION OBTAINED

**In September 2020, the Palm Beach County Board of County Commissioners Directed Staff to:**

- Continue to coordinate with local stakeholders and other affected Counties
- Initiate coordination with and transmit consultant's review and evaluation deliverables to FEMA
- Provide future BCC briefing on results of FEMA coordination and potential forward paths related to a formal appeal



# COMPLETED AND FUTURE ACTIVITIES

- **Water Resources Task Force** briefing – July 23, 2020 **COMPLETED**
- **League of Cities Environmental Committee** briefing – Sep. 2, 2020 **COMPLETED**
- **Board of County Commissioners (BCC)** workshop – Sep. 22, 2020 **COMPLETED**
- **League of Cities Board of Directors** briefing – Oct. 21, 2020 **COMPLETED**
- **FEMA Coordination** meeting – Nov. 17, 2020 **COMPLETED**
- **LMS Working Group** briefing – Dec. 9, 2020 **TODAY**
- **LMS Steering Comm. / CRS Users Group** briefing **FUTURE**
- **Coordination with Other Counties** **ONGOING**
- **Stakeholder Coordination** **ONGOING**
- **BCC** briefing – Jan. 2021 **FUTURE**



# ADDITIONAL INFORMATION

<https://discover.pbcgov.org/pzb/building/Pages/Flood-Information.aspx>

## Website Provides:

- **Consultant Deliverables**
- **Memorandum to BCC – Sep. 15, 2020**
- **Presentation to BCC – Sep. 22, 2020**
- **Video of Presentation to BCC – Sep. 22, 2020**
- **Palm Beach County Letter to FEMA – Oct. 5, 2020**

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# PALM BEACH COUNTY'S REVIEW AND EVALUATION OF FEMA'S COASTAL FLOOD RISK STUDY

## DISCUSSION

**Palm Beach County  
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