


A HURRICANE IS COMING



**Presented by
Atiba Upchurch
Broward Emergency Management Division**



Mission Statement


- **To safeguard the lives and property of the people of Broward County from major hazards and emergencies through effective leadership, coordination, and implementation of mitigation, preparedness, response, and recovery initiatives with private, governmental and community partners.**
- 



Question:

A hurricane's hazards:

Which of the following hazards is most likely to trigger evacuations?


- 
- A. Wind
 - B. Rainfall and Flooding
 - C. Storm Surge
 - D. Tornadoes



Question:

A hurricane's hazards:

Which of the following hazards is most likely to trigger evacuations?

- A. Wind
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 - C. Storm Surge (Answer)**
 - D. Tornadoes
- 


The Hazards of a Hurricane

1. Wind
2. Rainfall and Flooding
3. Storm Surge*
4. Tornadoes

We mainly only evacuate for storm surge

Historically, storm surge kills more people than any other hurricane hazard

*Hurricane Katrina: Over 1,800 people died mainly due to storm surge.
(NOAA)*



Countywide Information Gathering Before the Storm

Components with Decision Making



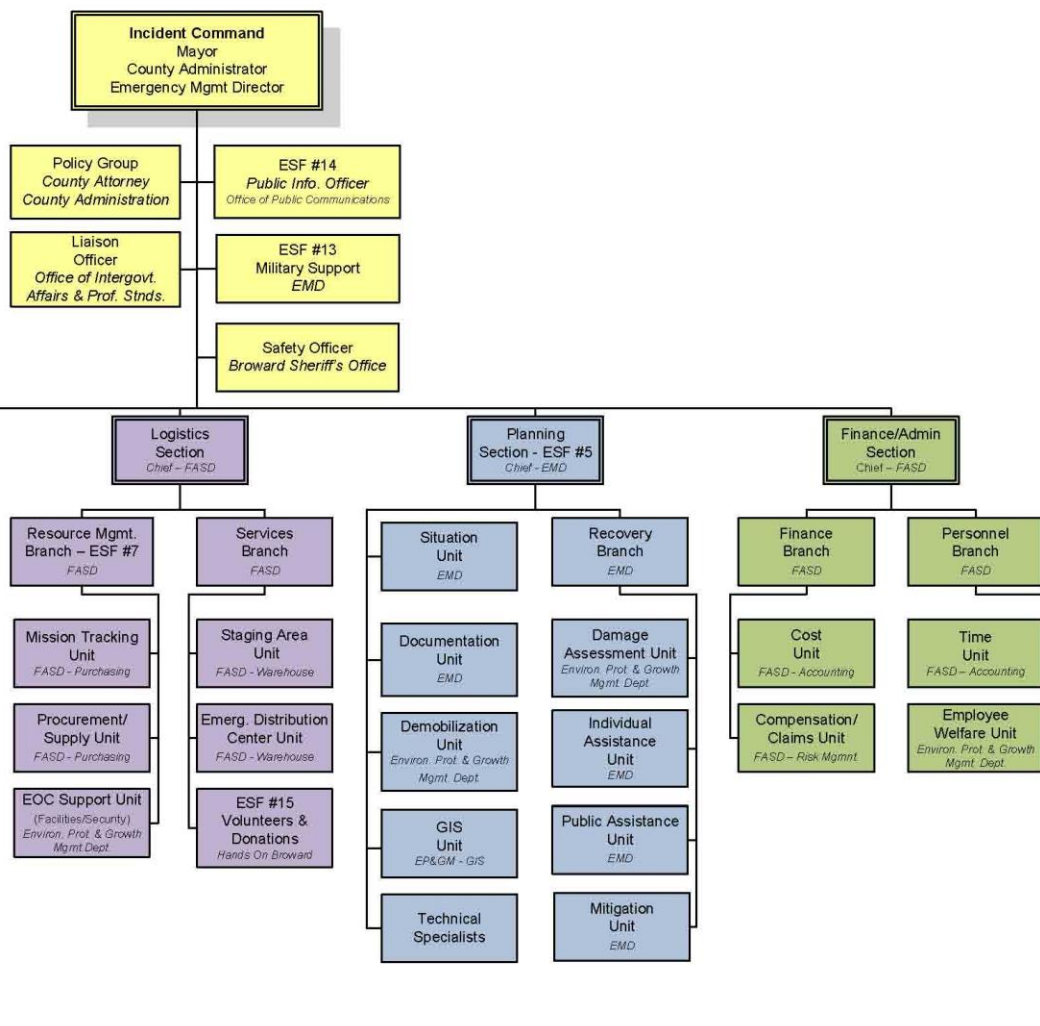
- Table of Organization
- WebEOC
- SALT
- Damage Assessment

Table of Organization



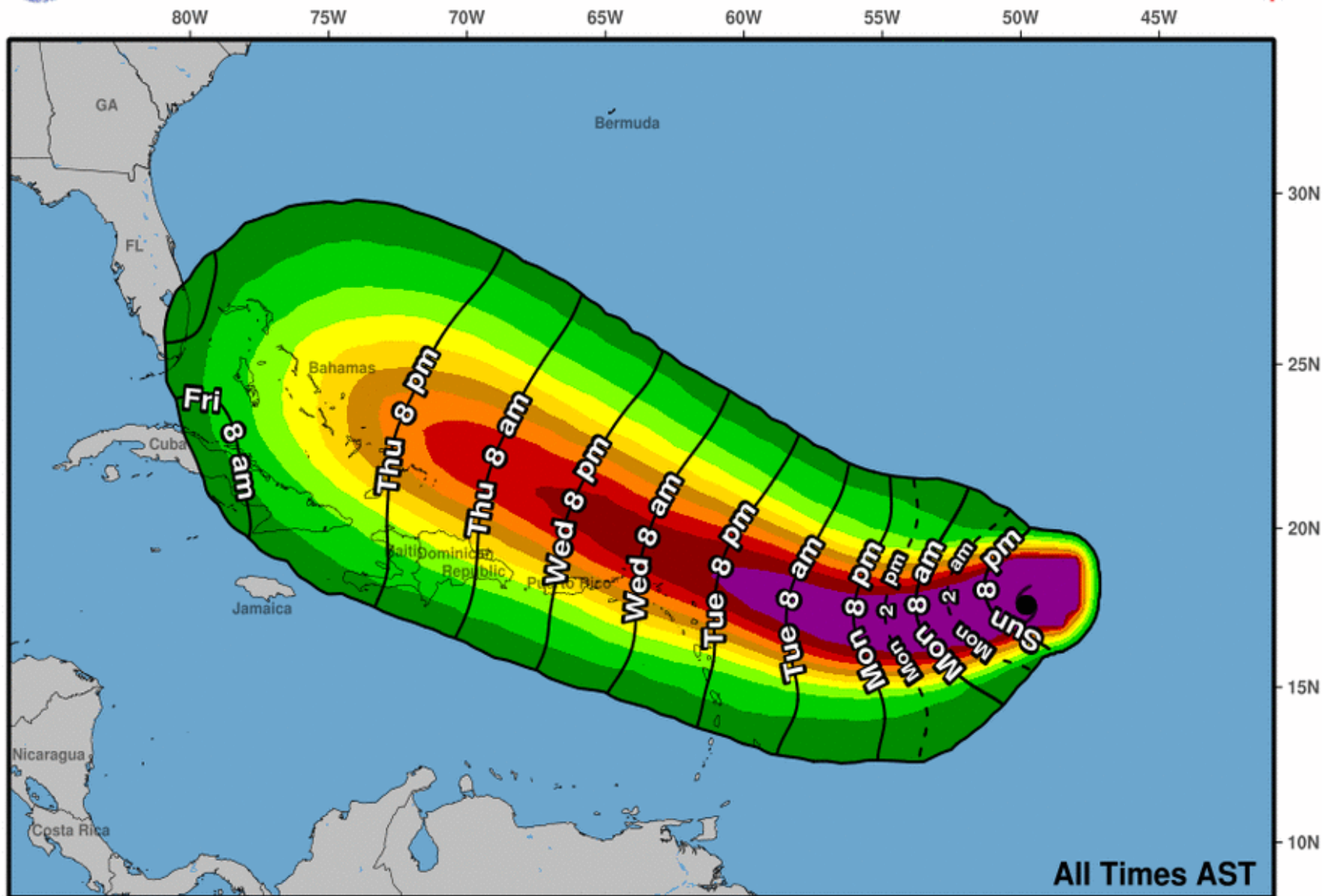
Table of Organization Broward Emergency Response Team

2/12/2016





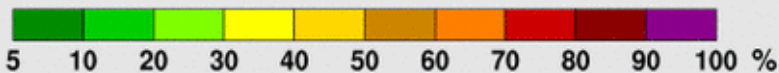
Most Likely Arrival Time of Tropical-Storm-Force Winds

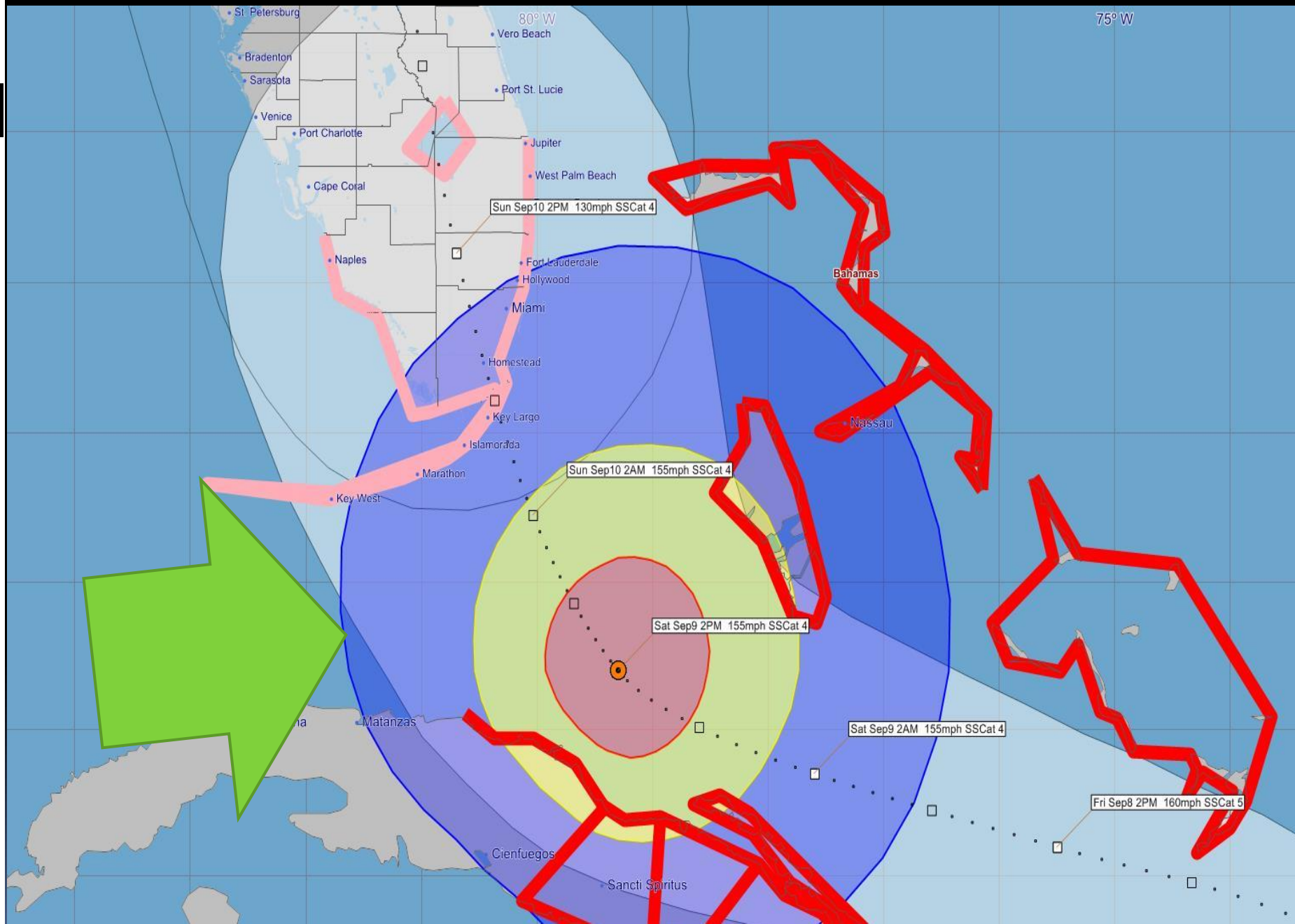


Hurricane Irma
Sun. Sep. 3, 2017 5 pm AST
Advisory 18

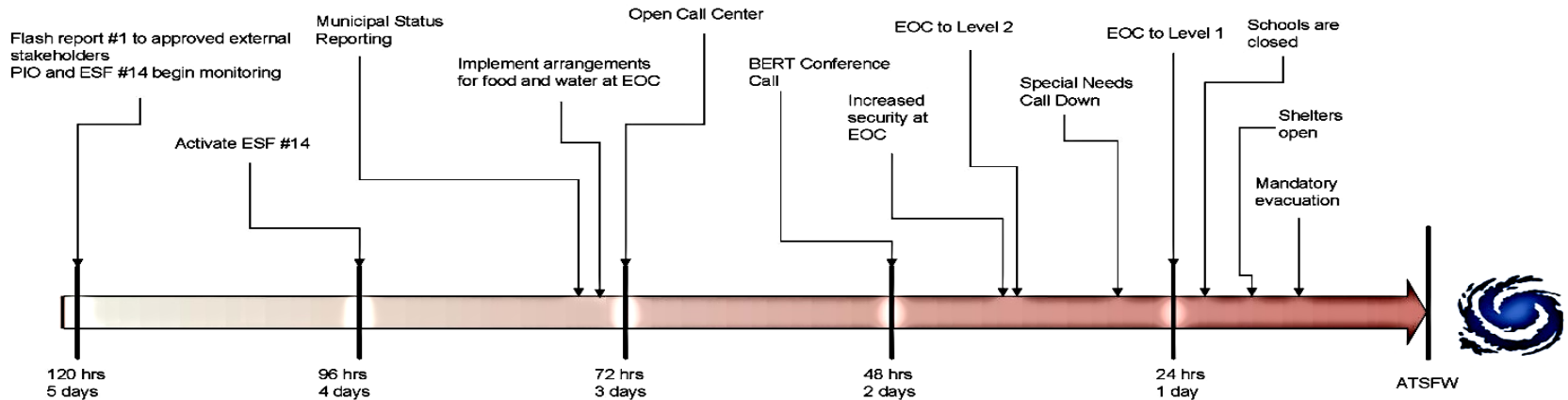
Storm Location &
Wind Speed (knots)
○ <34 ○ 34-63 ● ≥64

Five-day chance of receiving sustained 34+ knot (39+ mph) winds





Storm Action Lead Time (SALT)



Welcome, ESF5 (Logout). You are logged in as BC Planning Damage Assessm in Erika 2015



File Library x Municipal EEL x EOC Timeline x SALT x



Storm Action Lead Time

Last calculated on: Never

Tasks Print

Storm Name: Test2
Arrival of TSWF: 12/17/2015 22:00:00
Evacuation Zone: A

NHC ADV Num: 3
Time of ADV: 12/17/2015 10:06:00
Storm Heading: wnw

Forward Speed: 10 MPH (9 KT)
Max. Sust. Wind: 150 MPH (131 KT)
Storm Diameter: 100 Miles (87 NM)

Calculate S.A.L.T.


Saved.



Broward County Emergency Operations Center FLASH REPORT #01

CONTACT INFORMATION:

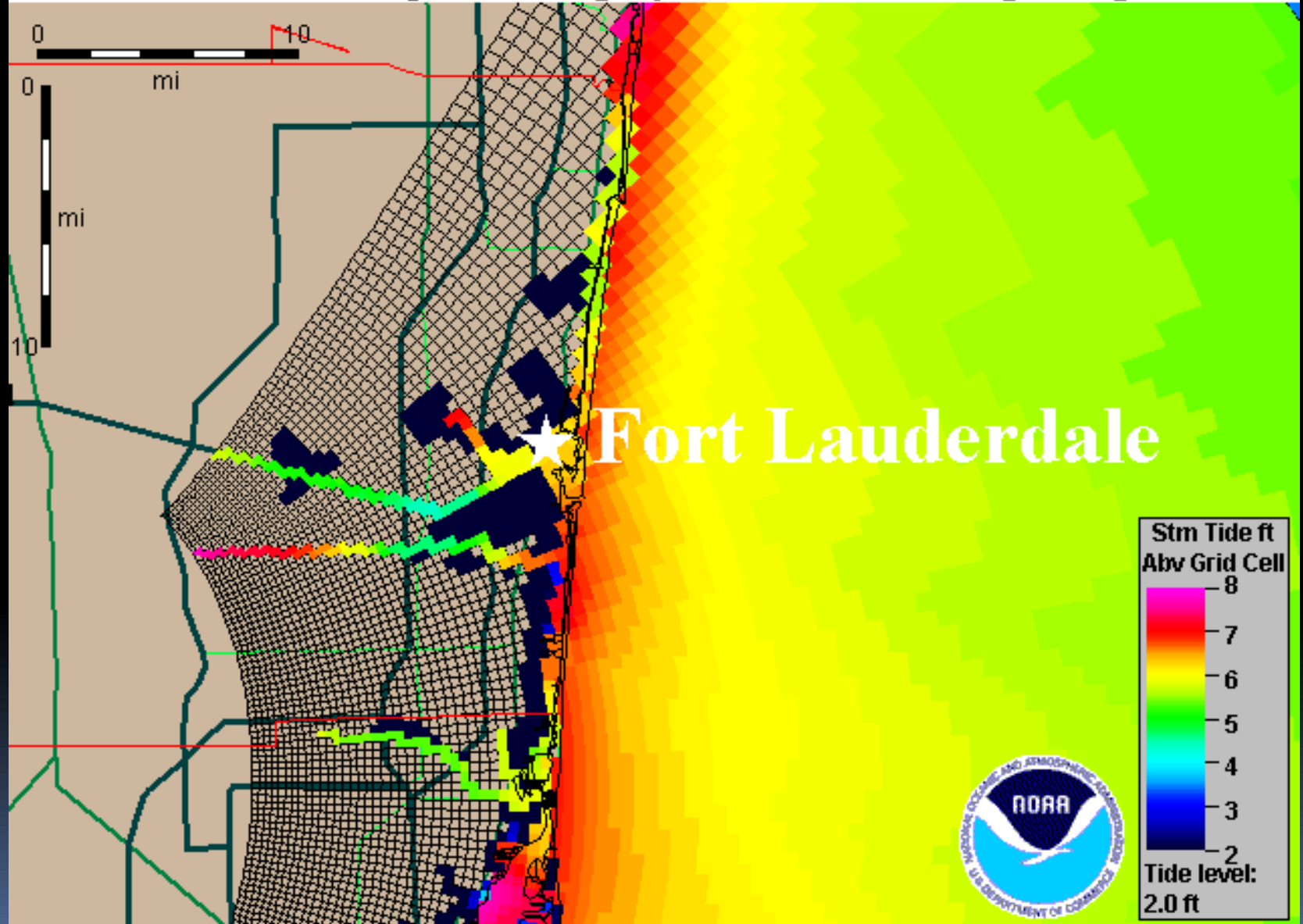
Standard hours phone: 954.831.3900
Non-standard hours: 954.831.3911
FAX: 954.382.5805
ESF5@broward.org

1. INCIDENT NAME Hurricane Irma	2. DATE September 5, 2017	3. TIME 1130 hours												
4. BROWARD EOC ACTIVATION LEVEL Level 3 - monitoring	5. LOCAL STATE OF EMERGENCY DECLARED? None.	6. PREPARED BY Duty Officer												
7. SUMMARY OF CURRENT SITUATION AND ACTIONS <p>As of 11:00am Hurricane Irma is a Category 5 with sustained winds of 180 mph. Some fluctuations in strength are possible, but the storm is not expected to weaken significantly. Broward County is expected to experience impacts from this dangerous hurricane. Tropical storm force winds may be possible as early as Friday night 8:00pm to Saturday morning. Broward County may experience major hurricane force winds depending on the eventual track of the storm.</p> <p>Broward EOC will go to a level 2 activation beginning at 3:00pm today September 5th, 2017, to include ESF-5 (Planning), ESF-6 (Mass Care), ESF-8 (Health & Medical), and ESF-14 (Public Information). Tomorrow the activation will expand to include the following ESF's: ESF-1 (Transportation), ESF-4 (Fire), ESF-7 (Resource Management Branch), ESF-11 (Food & Water), ESF-16 (Law Enforcement), ESF-17 (Veterinary Concerns), and all Branch Directors. Broward County EOC anticipates going to Full level 1 activation beginning Thursday, September 7th at 7:00am. The County anticipates the emergency hotline (311) will go to 24/7 operations beginning at 8:00am Wednesday, September 6th.</p> <p>A new incident has been created in WebEOC called Hurricane Irma 2017.</p> <p>Broward County Emergency Management Division wants to emphasize that Hurricane Irma is an extremely dangerous storm, everyone is encouraged to take protective measures as soon as possible.</p> <p>IMPORTANT NOTE: The following table identifies our tentative operations planning schedule. These estimated dates and times have not been confirmed and are likely to change based on the developing situation. These dates and times are to be used merely as a planning guideline. The information contained in this advisory is to inform public safety agencies and is NOT intended for general, public, or media distribution. Please do not distribute this information to the general public or the media – the general public may be referred to the Broward Call Center at 954.831.4000.</p> <table><tr><td>Municipal EOC Conference Call</td><td>Tuesday, September 5, 2017</td><td>1430 hours</td></tr><tr><td>BERT conference Call</td><td>Tuesday, September 5, 2017</td><td>1530 hours</td></tr><tr><td>Broward EOC activated to level 2</td><td>Tuesday, September 5, 2017</td><td>1500 hours</td></tr><tr><td>Broward EOC planning for level 1 activation</td><td>Thursday, September 7, 2017</td><td>0700 hours</td></tr></table>			Municipal EOC Conference Call	Tuesday, September 5, 2017	1430 hours	BERT conference Call	Tuesday, September 5, 2017	1530 hours	Broward EOC activated to level 2	Tuesday, September 5, 2017	1500 hours	Broward EOC planning for level 1 activation	Thursday, September 7, 2017	0700 hours
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8. INCIDENT GRAPHICS AND/OR DESCRIPTION <div><p>Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.</p><p>Hurricane Irma Tuesday September 05, 2017 11 AM AST Advisory 26 NWS National Hurricane Center</p><p>Current information: x Center location 16.8 N 58.4 W Maximum sustained wind 180 mph Movement W at 14 mph</p><p>Forecast positions: ● Tropical Cyclone ○ Post/Potential TC Sustained winds: D < 39 mph S 39-73 mph H 74-110 mph M > 110 mph</p><p>Potential track area: Day 1-3 Day 4-5 Watches: Hurricane Trop Stm Warnings: Hurricane Trop Stm Current wind extent: Hurricane Trop Stm</p></div>														
9. APPROVED BY Miguel Ascarrunz	10. TITLE Director, BEMD	11. DATE/TIME September 5, 2017/ 11:30 hours												

Saffir Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph 64-82 kt. 119-153 km/h	Very dangerous winds will produce some damage: Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt. 154-177 km/h	Extremely dangerous winds will cause extensive damage: Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111-129 mph 96-112 kt. 178-208 km/h	Devastating damage will occur: Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt. 209-251 km/h	Catastrophic damage will occur: Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt. or higher 252 km/h or higher	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Maximum water depth, Category 4 Hurricane hitting at high tide



Mandatory Evacuation Areas

PLAN A

- Typically a Category 1-2 hurricane:

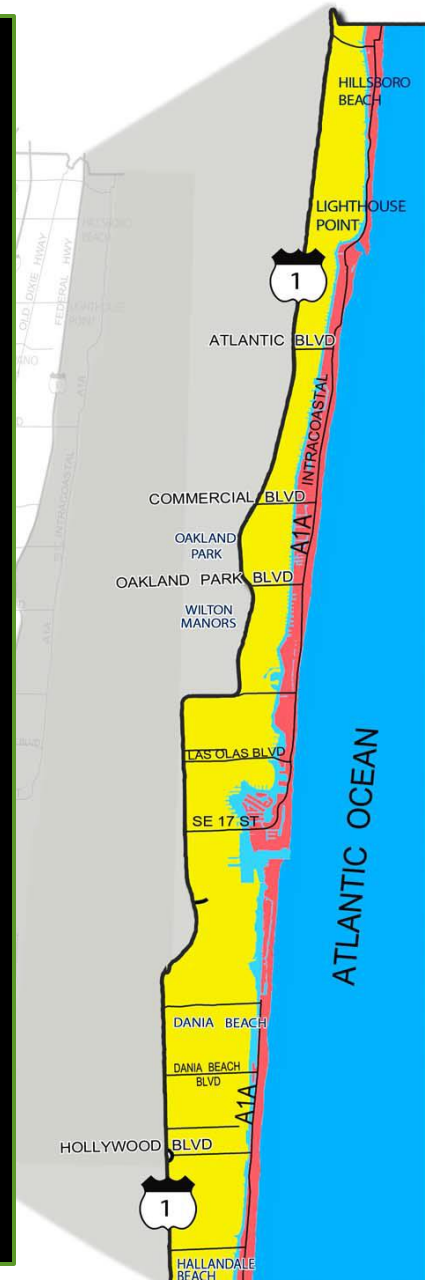
All residents in the area
east of the Intracoastal
Waterway


PLAN B

- Typically a Category 3, 4 or 5 hurricane:


All residents in the area
east of U.S. 1

And.....All Mobile Homes





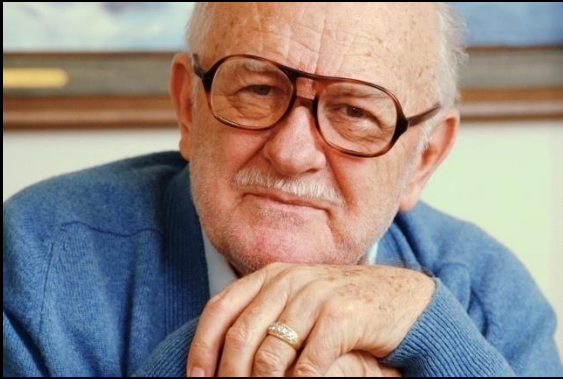
Special Medical Needs shelters are appropriate for someone who:

- Has minor health/medical conditions that require professional observation, assessment, and maintenance
 - Requires assistance with personal care and/or assistance with medications but does not require hospitalization or a medical institution
 - *All residents seeking shelter in a Special medical needs facility will be reviewed on an individual basis to determine the best placement for their needs.*
- 

Vulnerable Population Registry

*...a joint partnership between Broward County
and its municipalities*

www.broward.org/atrisk



Who is it for?

- People who would be at risk after a storm, especially those with a disability, frailty or health issue.
- Does not guarantee that you will be provided services or placed on a priority list.
- First responders use this database to prioritize initial response.
- Register online at www.broward.org/atrisk or by calling the Broward County Call Center at (954) 831-4000 or 311

Hurricane Irma Event Timeline

- **Tuesday, September 5– EOC to Level 3 (Monitoring & Assessment)**
 - EMD Staff (*1st Flash Report issued)

*State Conference Calls began on September 3.
- **Tuesday, September 5 3 PM EOC went to a Level 2 (Partial Activation):**
include ESF-5 (Planning), ESF-6, (Mass Care), ESF-8 (Health & Medical), and ESF-14 (Public Information).
- **Wednesday, September 6, 11:00 AM –** Mayor signs Declaration of Local State of Emergency
- **Thursday, September 7 7 AM;** Broward EOC Full Scale Activation (Level 1)
- **Thursday, September 7 11 AM–** Broward County under Hurricane Watch
- **Thursday, September 7 12:00 PM –** Mandatory evacuations ordered for Zones A & B. Shelters opened shortly thereafter.
- **Thursday, September 7 11:00 PM –** Broward County under Hurricane Warning

Hurricane Irma Event Timeline

- Saturday, September 9, 2 PM – Curfew issued for Broward County
- Saturday, September 9, 4 PM – Broward County EOC Lockdown due to tropical storm force winds
- Sunday, September 10, 8:00 PM – Hurricane Warning lowered to Tropical Storm Warning
- Monday, September 11 5:00 AM – Tropical Storm Warning Cancelled
- Monday, September 11, 10 AM - EOC Curfew and EOC Lockdown lifted
- Monday, September 11, 11:00 PM – EOC activation lowered to Level 2
- Saturday, September 16 at 8 PM - EOC to normal operating condition (Monitoring)



Impacts after the storm



**Local State of
Emergency**

State Emergency Declaration

Local, State, Federal

**Presidential
Disaster
Declaration**

**Joint
Preliminary
Damage
Assessment**

Local

**Initial Damage
Assessment**

**American Red
Cross PDA**

**Impact
Assessment**



Public Assistance

Individual Assistance



Response

Recovery

Reconstruction

Disaster



Home Damage Assessment Program

http://www.broward.org/hurricane/Pages/Default.aspx

Convert Select

Favorites Web Slice Gallery Yellow Pages Local Direct... Office Online Home Page Microsoft Office Microsoft Corporation Google Free Hotmail fema The National Flood I...

Hurricane

Microsoft Translator | Google Translate

BROWARD COUNTY FLORIDA

Home County Commission Living in Broward Doing Business Visiting Search

Broward County > Hurricane Printer Friendly

Hurricane

Hurricane PREPAREDNESS

Evacuation & Shelter Information

Tracking the Storm

A-Z Hurricane Guide

Hurricane Kit Shopping Guide

Emergency Volunteer Opportunities

Links

Emergency Management Division

Broward County - Hurricane Preparedness

In the News

Residents Encouraged To Get Connected!
To stay informed, residents are encouraged to register now for the Broward County Hurricane Update eMail. To receive updates on your cell phone or email, follow us on Twitter. To become a follower, visit twitter.com/ReadyBroward. For more information on hurricane preparedness, call the Broward County Call Center at 954-831-4000 or 311.

New Registration for Special Medical Needs Shelters
There is a change in medical provider at the Special Medical Needs Shelters. New applications are required for the 2010 Hurricane Season. [More...](#)

Residents Wanted to Participate in Home Damage Assessment Program
Broward County is introducing a new program to help quickly identify areas of devastation, even before damage assessment teams are able to canvass the County. It's easy and a great service to the community. [Learn how you can participate...](#)

READY. SET. SAFE.

HURRICANE

The Official Broward County Hurricane Preparedness Guide is filled with useful information, maps, telephone numbers and web site addresses that help you be ready - set - safe for hurricane.

Twitter
FOLLOW ReadyBroward

Subscribe to Hurricane Updates

Home Damage Assessment Program

Generator-Ready Businesses

Vulnerable Resident Preparedness

Resources

- A to Z Hurricane Guide
- The Official Broward County Hurricane Preparedness Guide



Report Your Damage

- Three methods:


Internet

Cell Phone

Emergency Hotline



Data Entry Screen



Neighborhood Damage Assessment

1 Report the Address

House Number:

Direction:

Street Name:


Street Type:

City:

State: ZIP:


2 Select the Damage/Flood Level

1




NO/MINOR DAMAGE HABITABLE

2




MAJOR DAMAGE HABITABLE

3



MAJOR DAMAGE UNINHABITABLE

4



DESTROYED

Damage Level:

Flood Level:

Submit

Reset

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What the pictures say.



With tarps,
you may be
able to stay
in your
home.

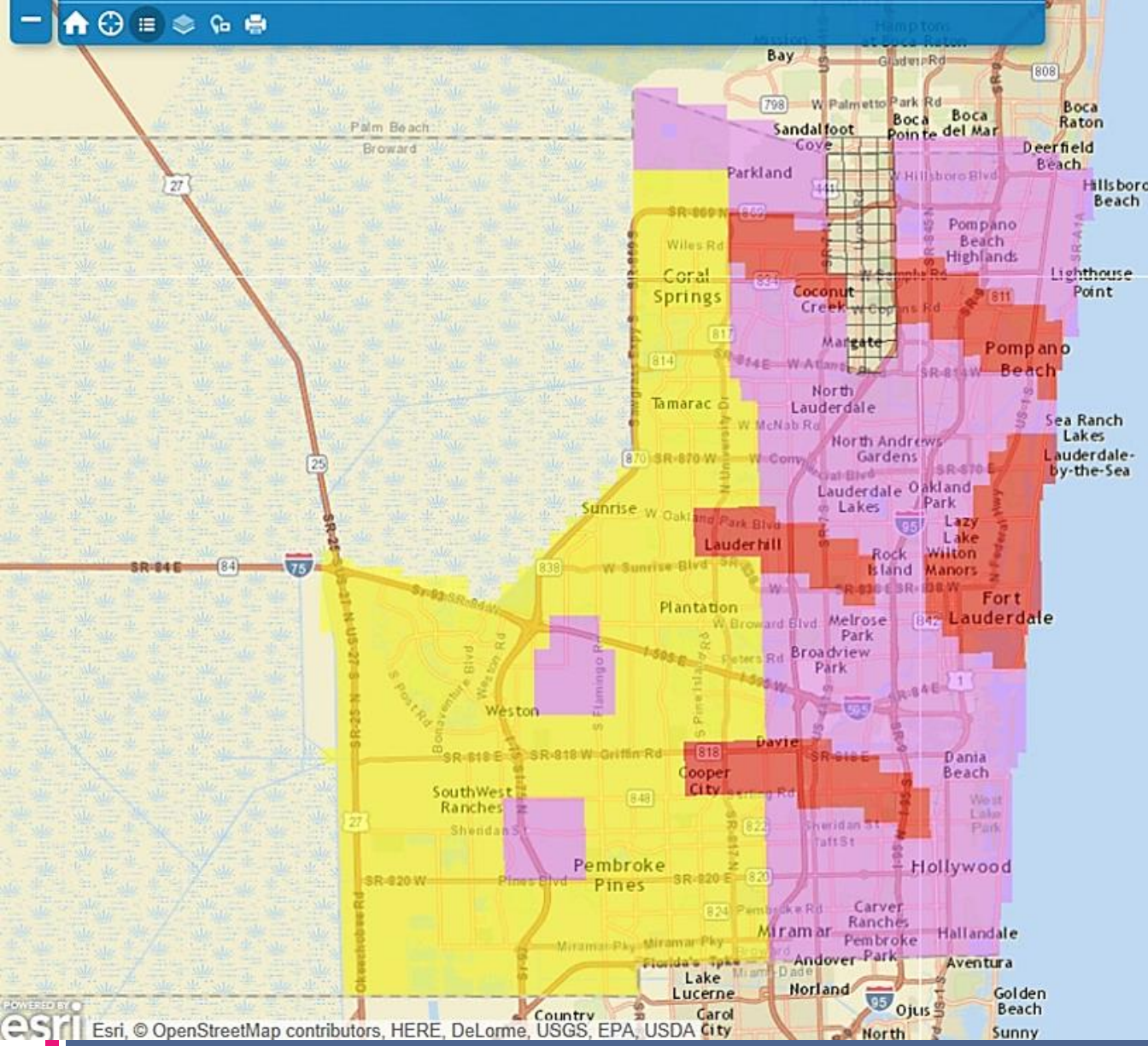


Long-
term
housing is
needed.

Need
long-term
housing.

Rapid Impact Assessment - WIND

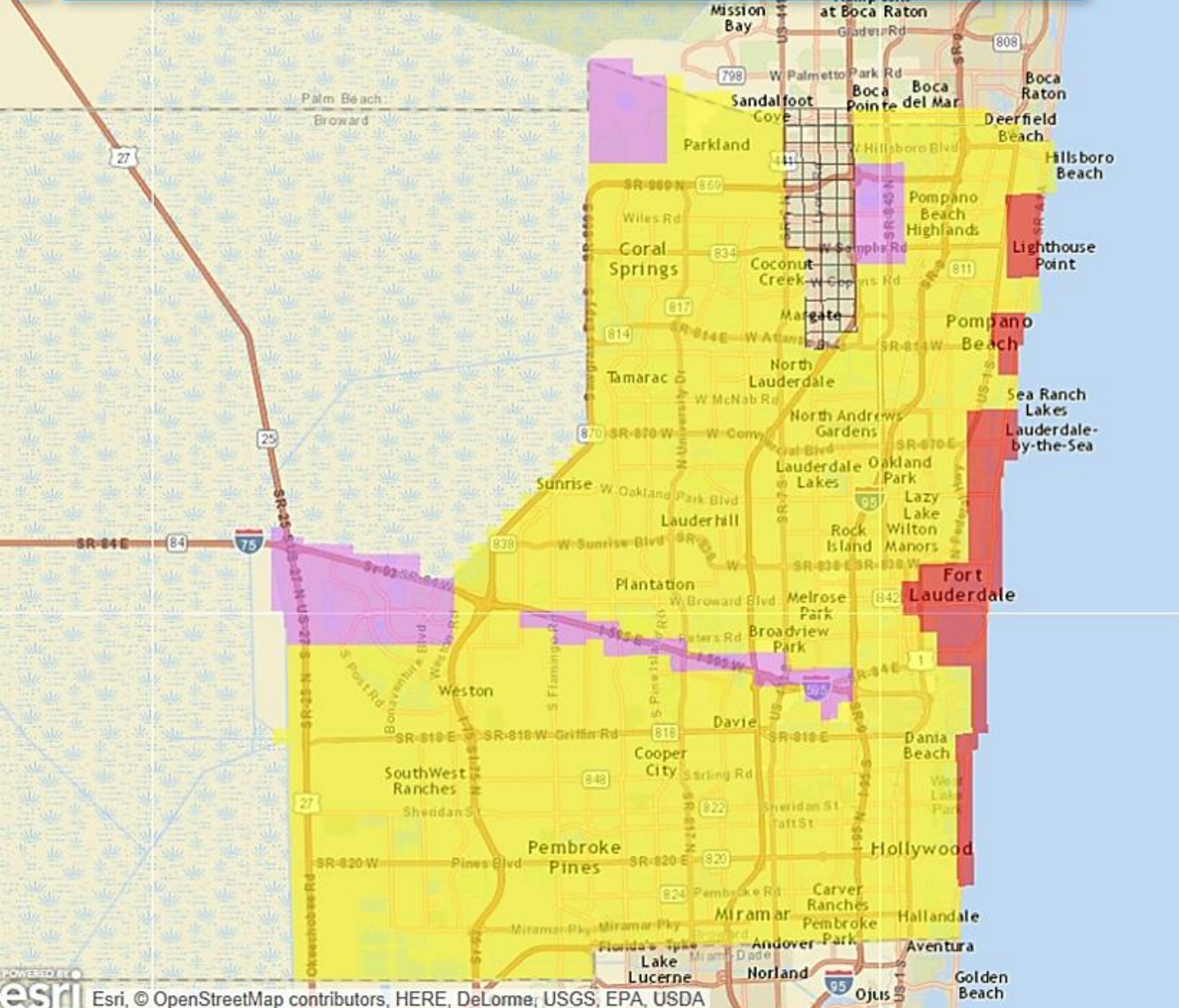
Find address or place



- Damage Level:
- Wind
- 4 Catastrophic
 - 3 Severe
 - 2 Moderate
 - 1 Minor
 - 0 No Damage
 - No Report

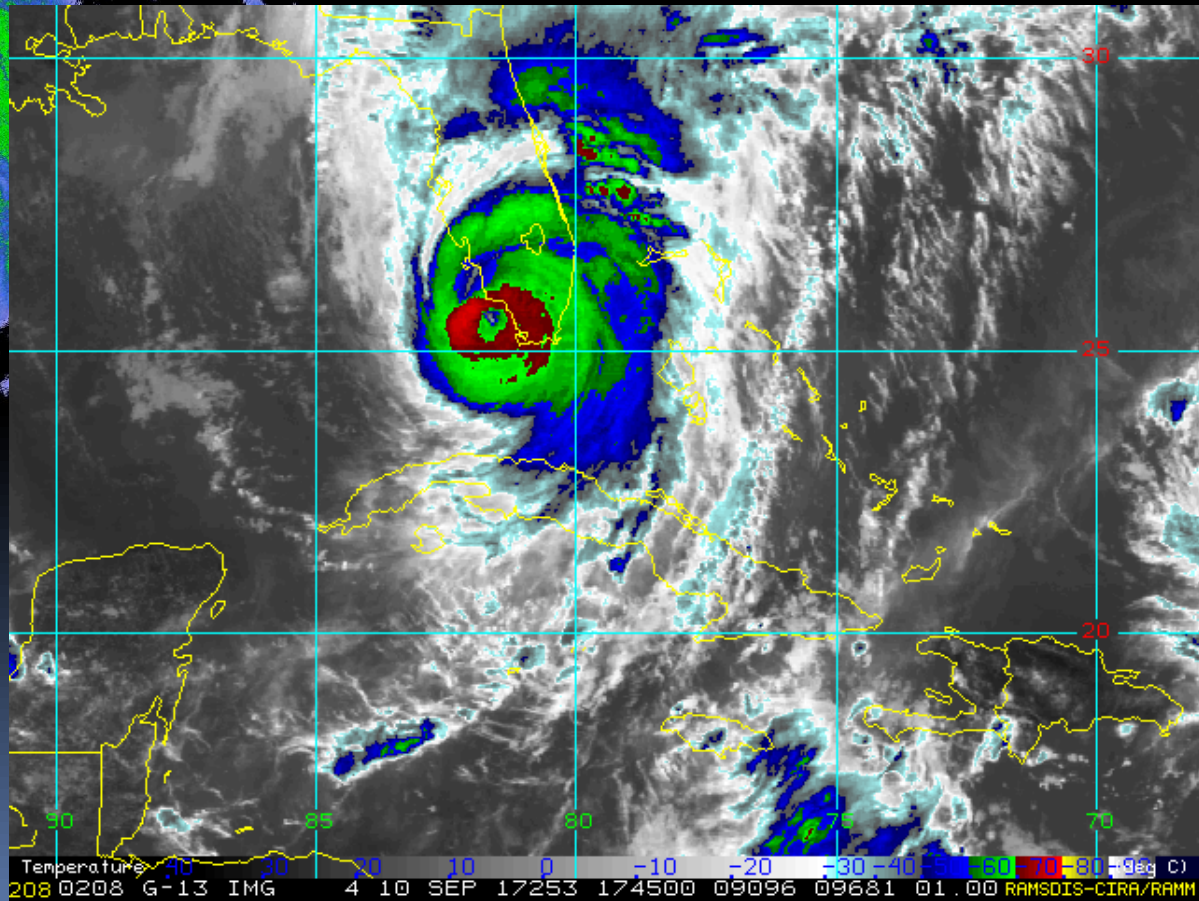
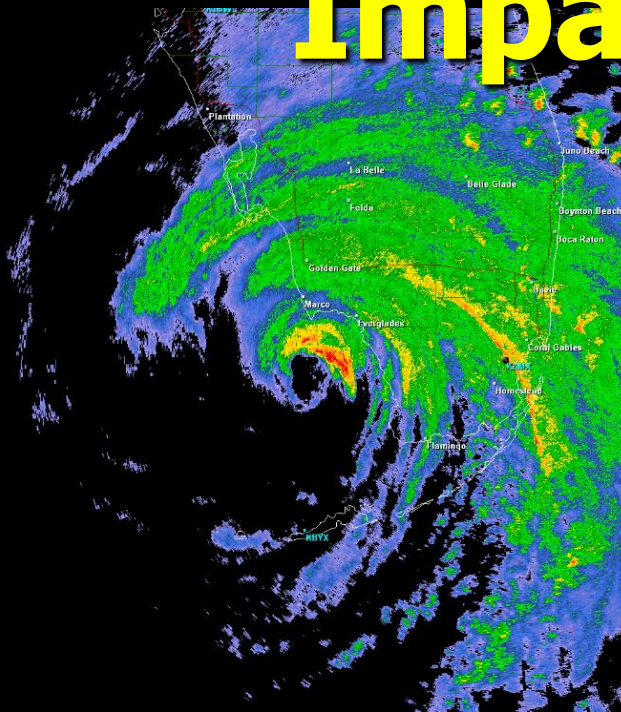
Damage Level:

- Flood
- 4 Catastrophic
 - 3 Severe
 - 2 Moderate
 - 1 Minor
 - 0 No Damage
 - No Report

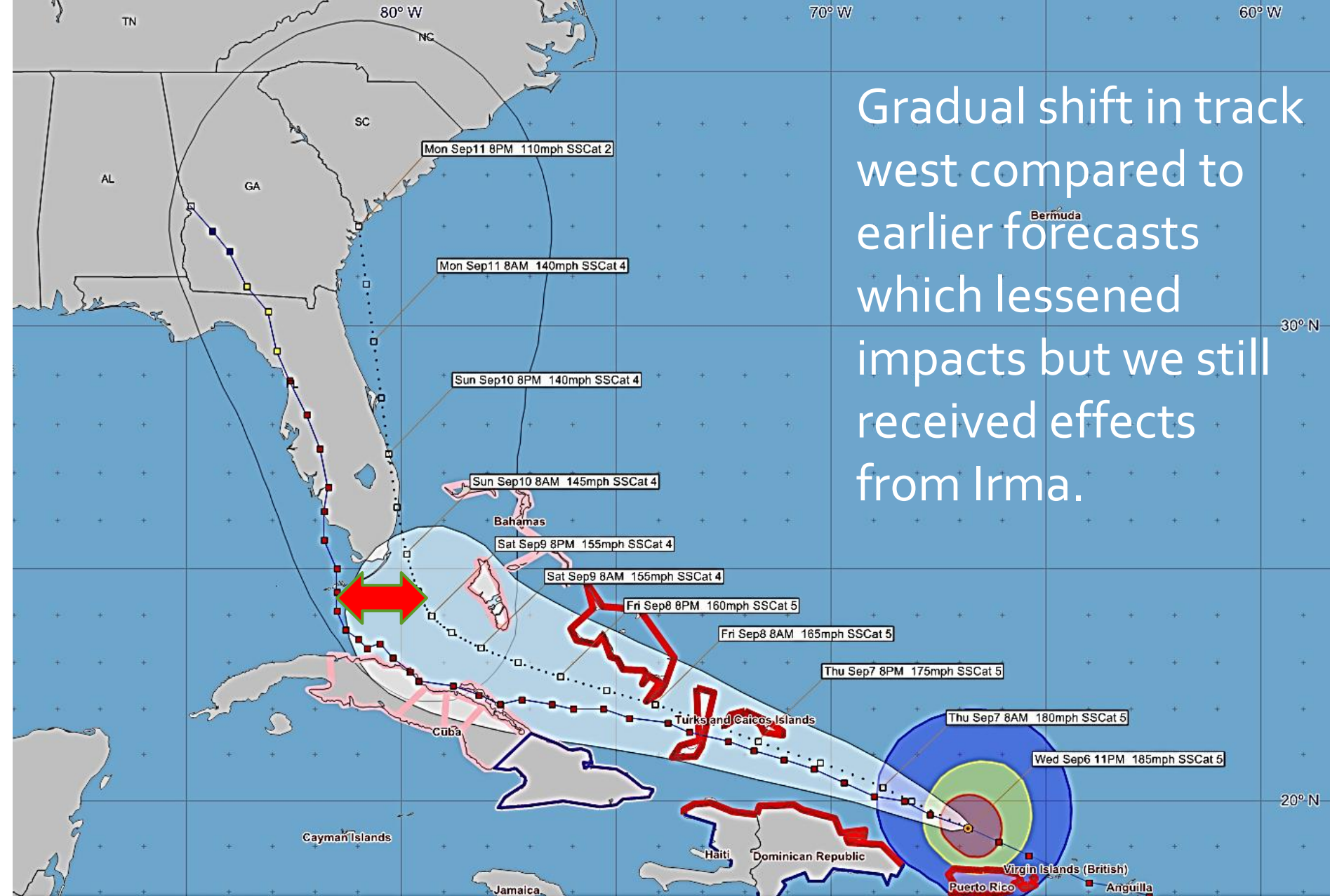


Hurricane Irma

Impacts in Broward County



Gradual shift in track west compared to earlier forecasts which lessened impacts but we still received effects from Irma.



Hurricane Irma - Wednesday, September 6, 2017 11 PM EDT Advisory #32

Center Location: 19.4 N 66.8 W Maximum Sustained Winds: 185 mph (Cat 5) Movement: 16 mph WNW

forecast positions Potential Track Area: day 1-3 day 4-5 Surface Wind Field: at current location

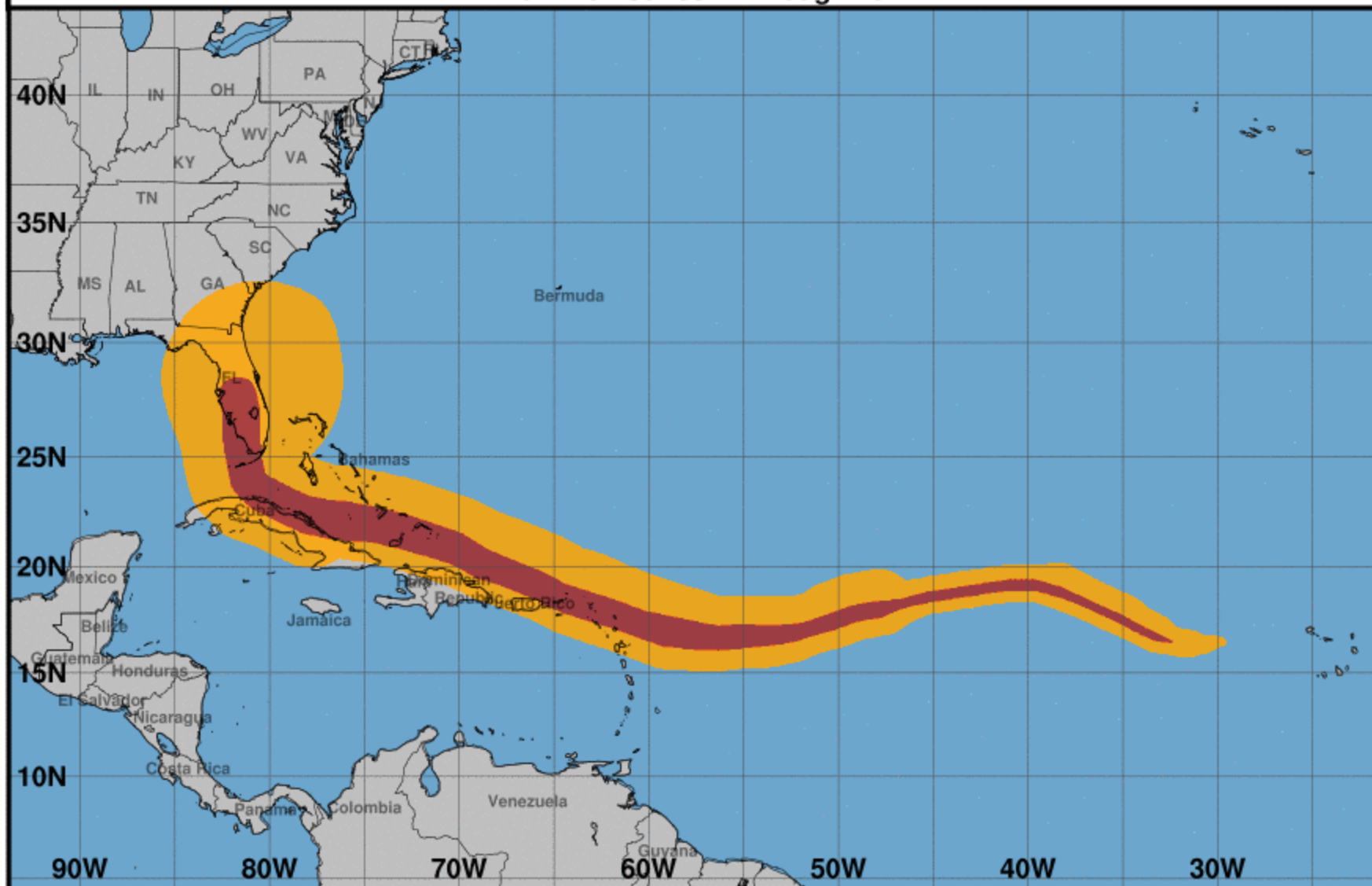
Watches: hurricane tropical storm

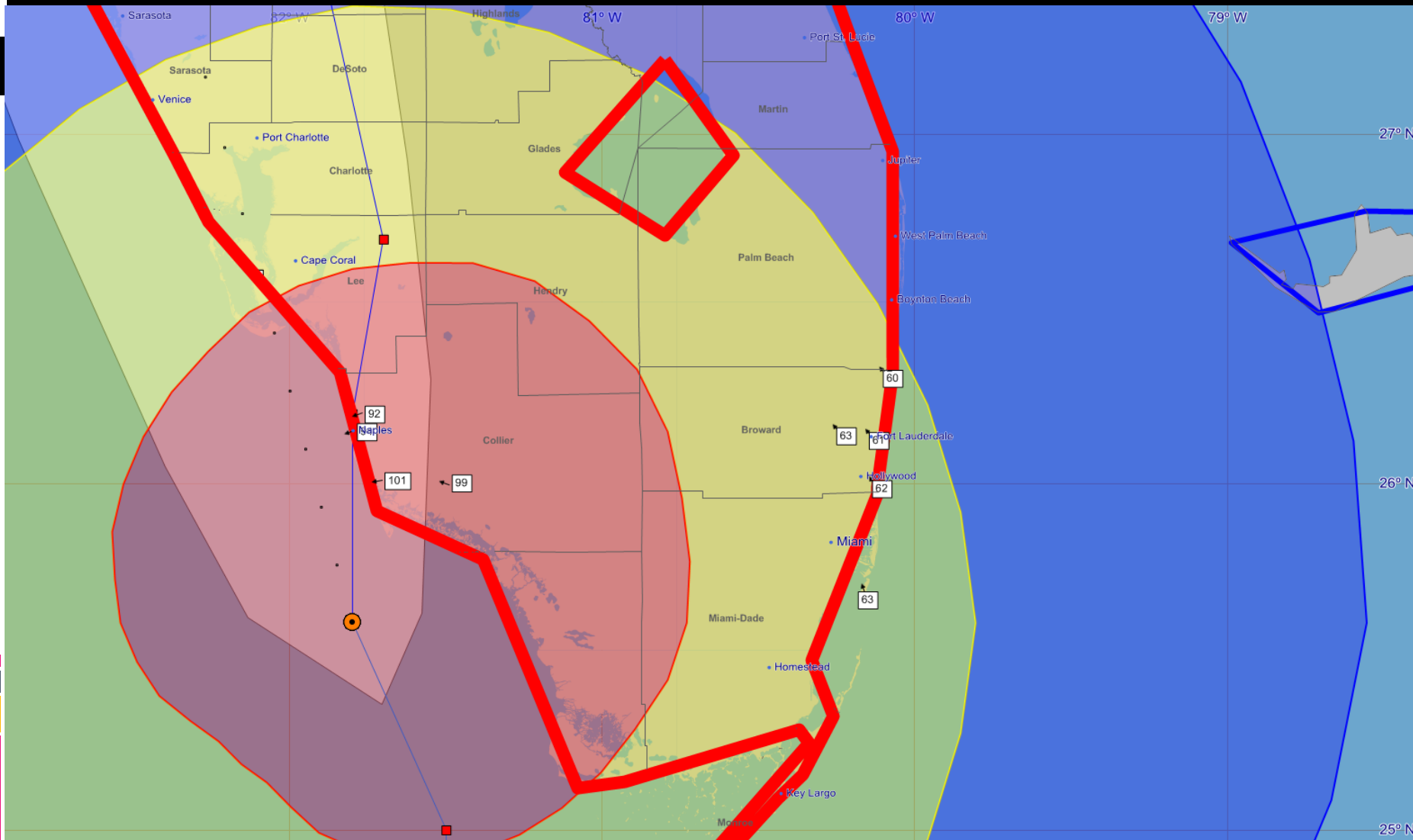
Warnings: hurricane tropical storm

Sustained Wind Speeds: tropical storm ≥ 34 kt/39mph strong tropical storm ≥ 50 kt/58mph hurricane ≥ 64 kt/74mph



National Weather Service - National Hurricane Center
Tropical Storm ■ and Hurricane ■ Force Wind Swaths of Irma
From Advisories 1 Through 48A





Hurricane Irma - Sunday, September 10, 2017 2 PM EDT Advisory #46A

Center Location: 25.6 N 81.8 W Maximum Sustained Winds: 120 mph (Cat 3) Movement: 12 mph N

forecast positions Potential Track Area: day 1-3 day 4-5 Surface Wind Field: at current location

Watches: hurricane tropical storm Warnings: hurricane tropical storm

Sustained Wind Speeds: tropical storm ≥ 34 kt/39mph strong tropical storm ≥ 50 kt/58mph hurricane ≥ 64 kt/74mph

- Sustained tropical storm force winds (generally 40-60 mph) for approximately 8-12 hours.



- Information gathered from NWS, NOAA, Hurrevac
- Max sustained winds 60-70 mph with peak gusts 80-100 mph
- Hurricane force gusts occurred during 4-6 hour period





- Storm surge 2-4 ft, highest values occurred shortly after high tide

- Multiple tornados impacted Broward County
- Inundation up to 2 ft limited to beachfront areas within a half-mile of the coast





Broward Emergency Management Division

www.broward.org/emergency

www.broward.org/hurricane

Florida Division of Emergency Management

www.floridadisaster.org

FEMA

www.fema.gov

READY (Ready America/Ready Business)

www.ready.gov

Twitter - [@readybroward](https://twitter.com/readybroward)

Facebook – [Broward County Emergency Management](#)

