

# NWS *Tropical* Decision Support

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# Section Flow & Goal



NWS Decision Support  
Services

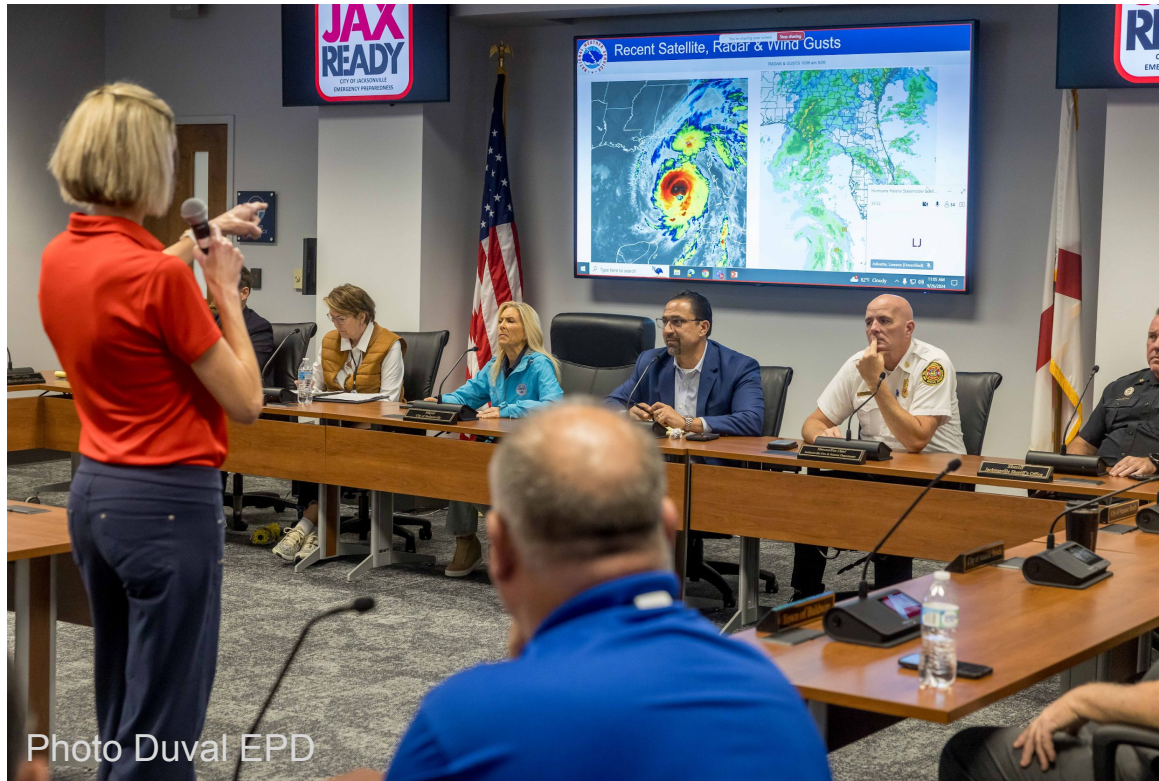
Ways we can provide  
you with weather intel



NHC & NWS Forecast  
Interpretation &  
Application

Interactive Exercise

# NWS Decision Support



## NWS Incident Decision Support Service

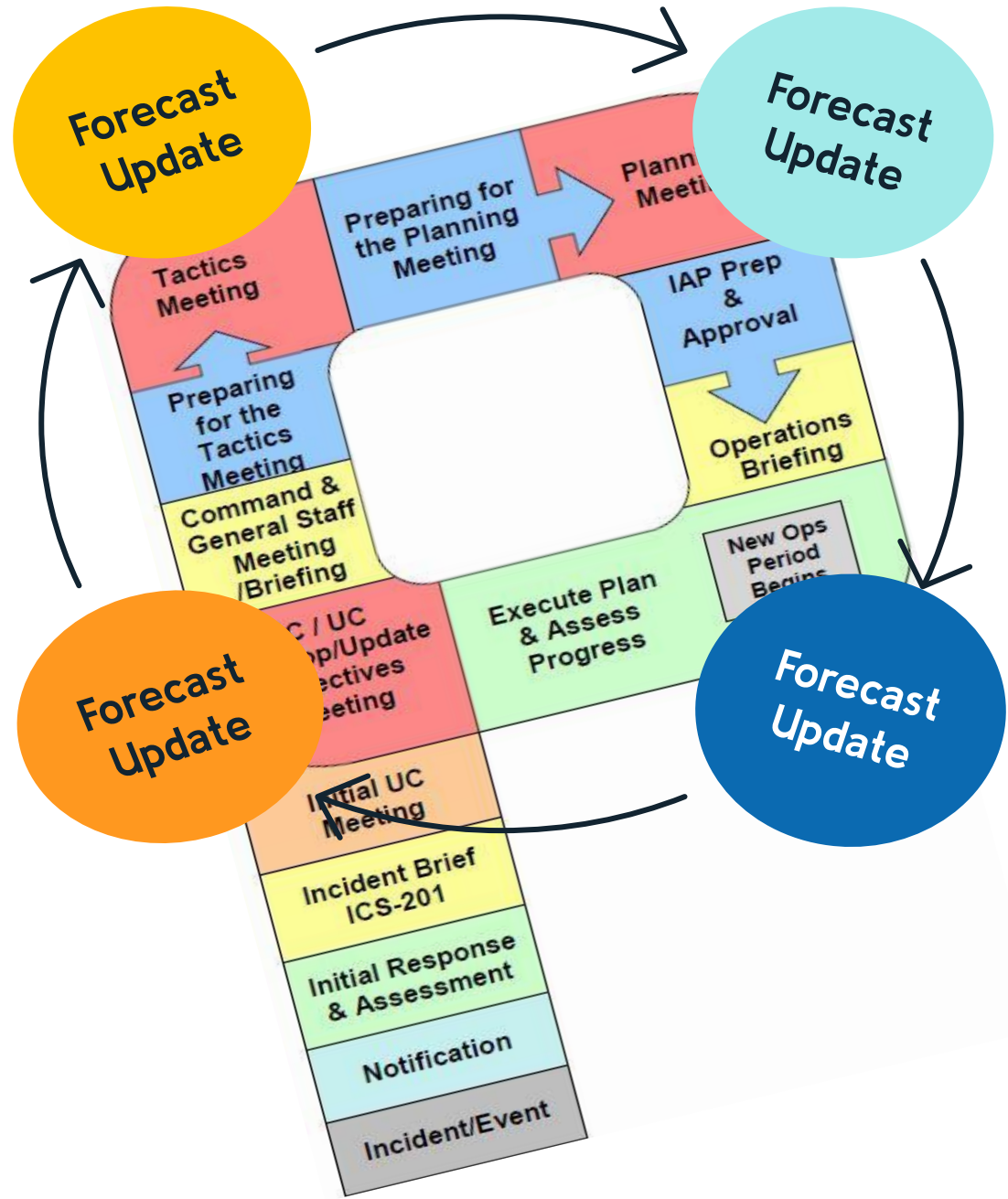
“the provision of

**relevant information & interpretative services to enable core partners’ decisions**

when weather, water, or climate has a direct impact on the protection of lives and livelihoods.”

# Voice of "Weather Reason"





Op Period  
+  
Forecast  
Updates

# Phased Support - Preparedness to Recovery



Threat Identified & Monitored  
Resource 'Shuffle' & Engagement  
Sheltering & Evacs  
Structure Protection  
Emails & Webinars  
NWS Support  
Coordination



SAR Ops  
Assessments  
Restoration  
Recovery  
Forecasts  
'Eye in the Sky'

Pre-Event Training  
**Preparedness Phase**

Event Briefings & Services  
**Planning Phase**

Remote & On-Site Support  
**Response Phase**

Ongoing Support Post-Event  
**Recovery Phase**

Exercises & Training Classes  
Safety Expos  
Mitigation Projects  
Routine Forecasts  
Weekly/As Needed Briefings  
Public Safety Events  
Pre-Event Coordination



NWS Fully Engaged  
Onsite or Virtual Support  
SLACK Messaging  
Continued Briefings  
Resources Engaged  
Evacuations  
Rescues





# Exercise Scenario

**Polk County**

**Pinellas County**





# Exercise Scenario

- You are deployed to Polk or Pinellas county
  - One side: Polk
  - One side: Pinellas
- Listen to NWS briefings leading up to storm impacts.
- From your county perspective, practice interpretation & application of the weather information presented in each briefing by responding to interactive PollEverywhere prompts via your phone.

5 days out

3 days out

48 hrs - Watches

Warnings - Impacts

# Scan PollEverywhere QR Code



<https://pollev.com/brianc299>

# PollEverywhere Test

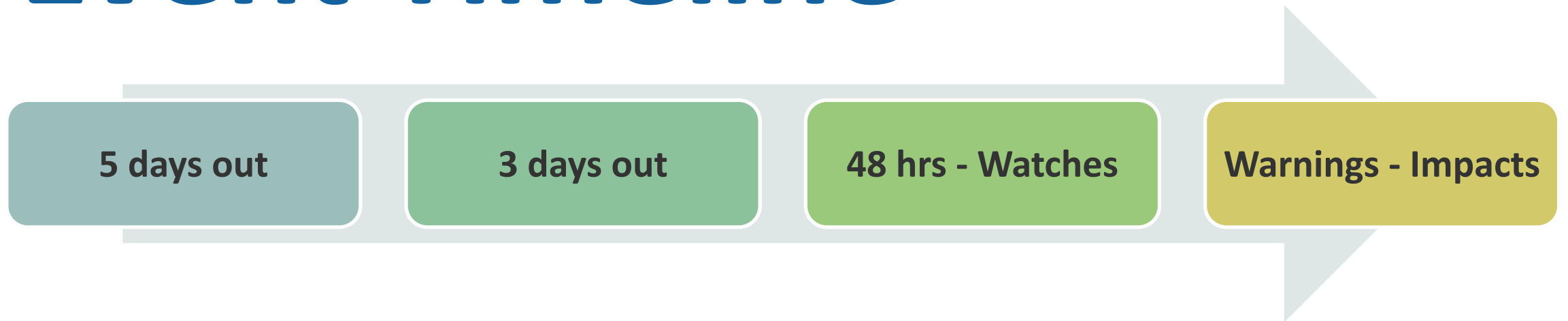


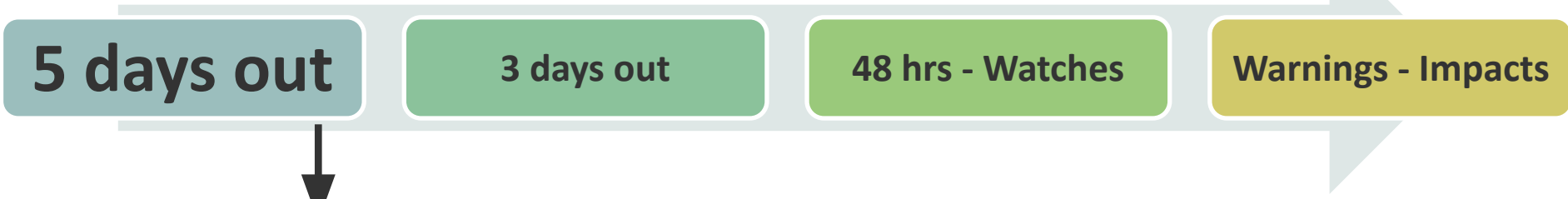
**Where are you from?**

**Click the map!**



# Event Timeline





- Threat Identified
- Monitoring
- Potential Scenarios & General Impacts
- NWS Emails & Webinars
- SLACK Messaging



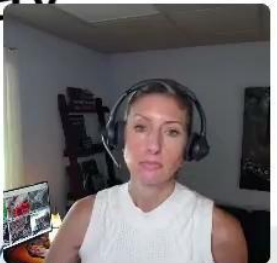
# Tropical Briefing

7:30 am

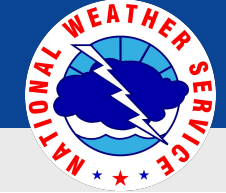
Friday, October 4

New Info:

Chance of tropical development increased to 40%  
Increased Flooding Rainfall Risk Sunday - Tuesday



*Disclaimer: The information contained within is time-sensitive. Do not use after: < ENTER EXPIRATION TIME/DATE*



# Tropical Briefing

7:30 am

Friday, October 4

New Info:

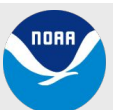
Chance of tropical development increased to 40%  
Increased Flooding Rainfall Risk Sunday - Tuesday

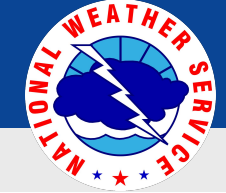


# Situation Overview

EXERCISE

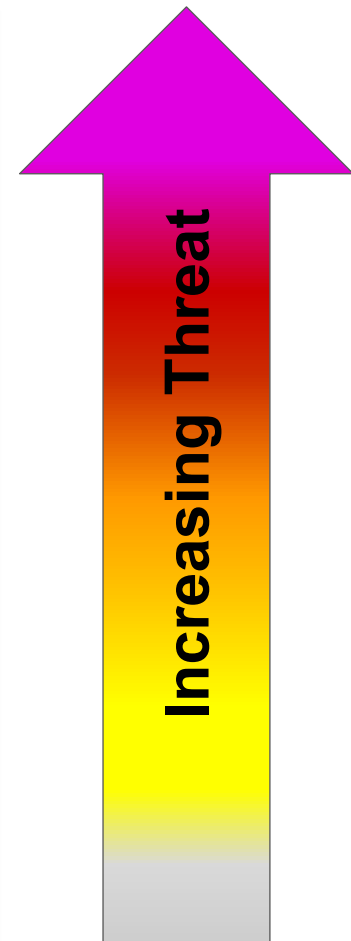
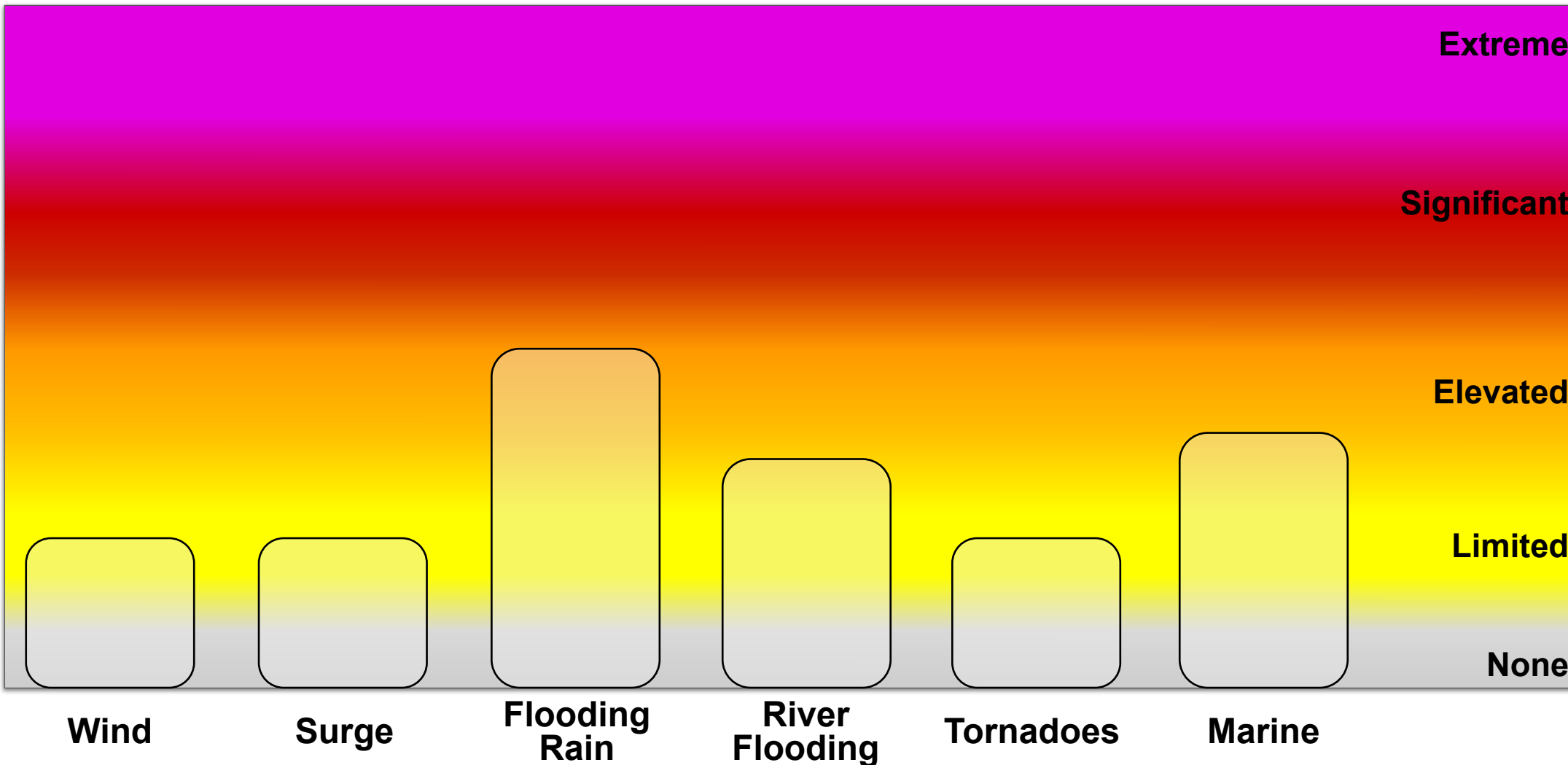
- 40% chance of tropical cyclone development across the southern Gulf of America early next week (Mon-Wed).
- Increasing confidence of localized flooding rain risk Sunday through Thursday (regardless of tropical development).
- Too early to determine what, if any, tropical specific impacts can be expected for West Central & Southwest Florida.
- Encourage preparedness, readiness & monitoring this weekend.

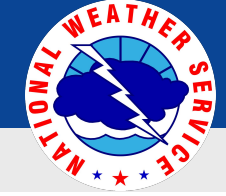




# Threat Levels

EXERCISE





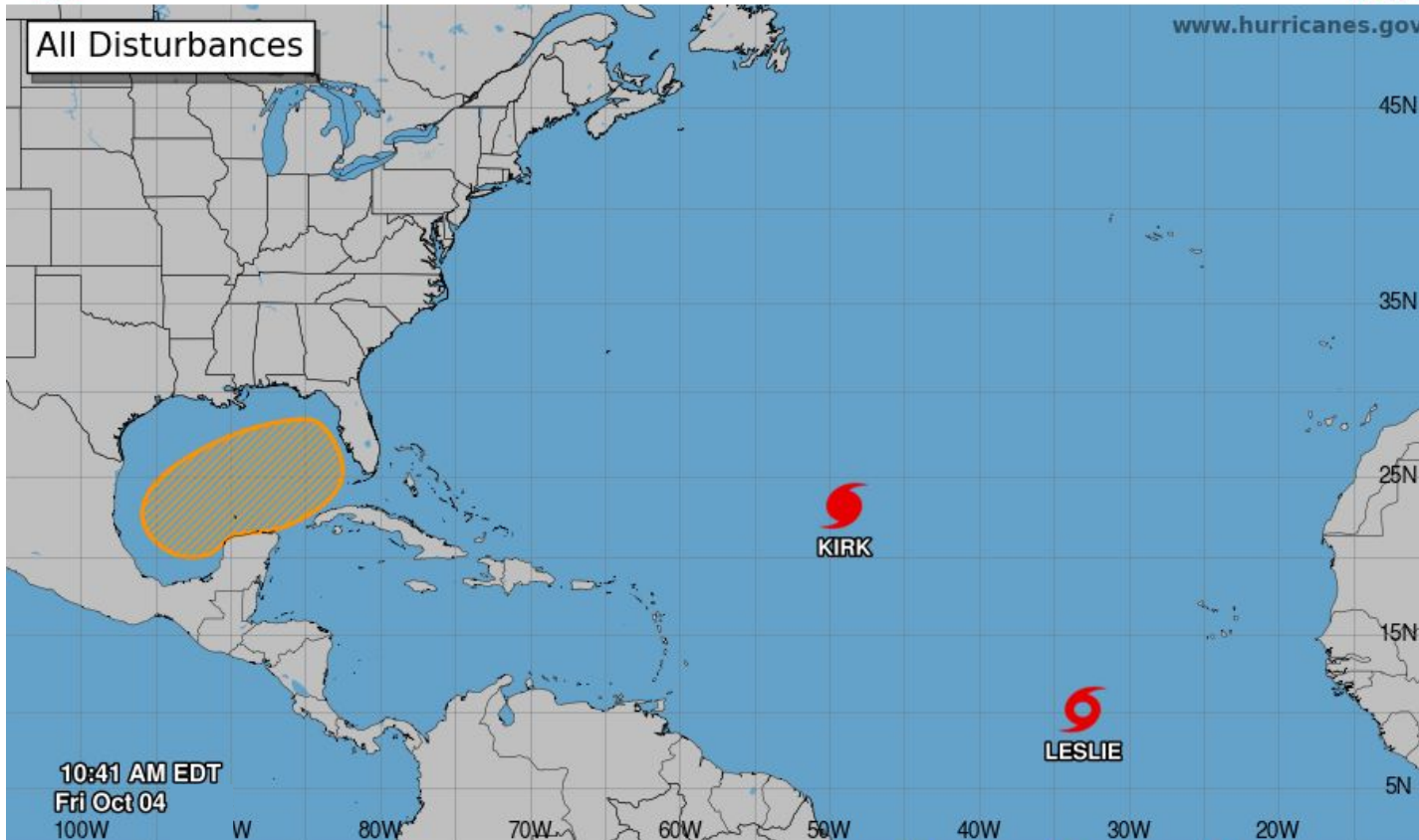
# Tropical Weather Outlook

EXERCISE



## Seven-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Seven-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Chance of development:

0% next 48 hrs

**40% next 7 days**

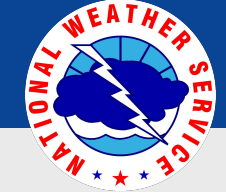
Regardless of tropical development, heavy rain event start to unfold from Sunday through Thursday next week



National Oceanic and Atmospheric Administration

U.S. Department of Commerce

NWS Tampa Bay

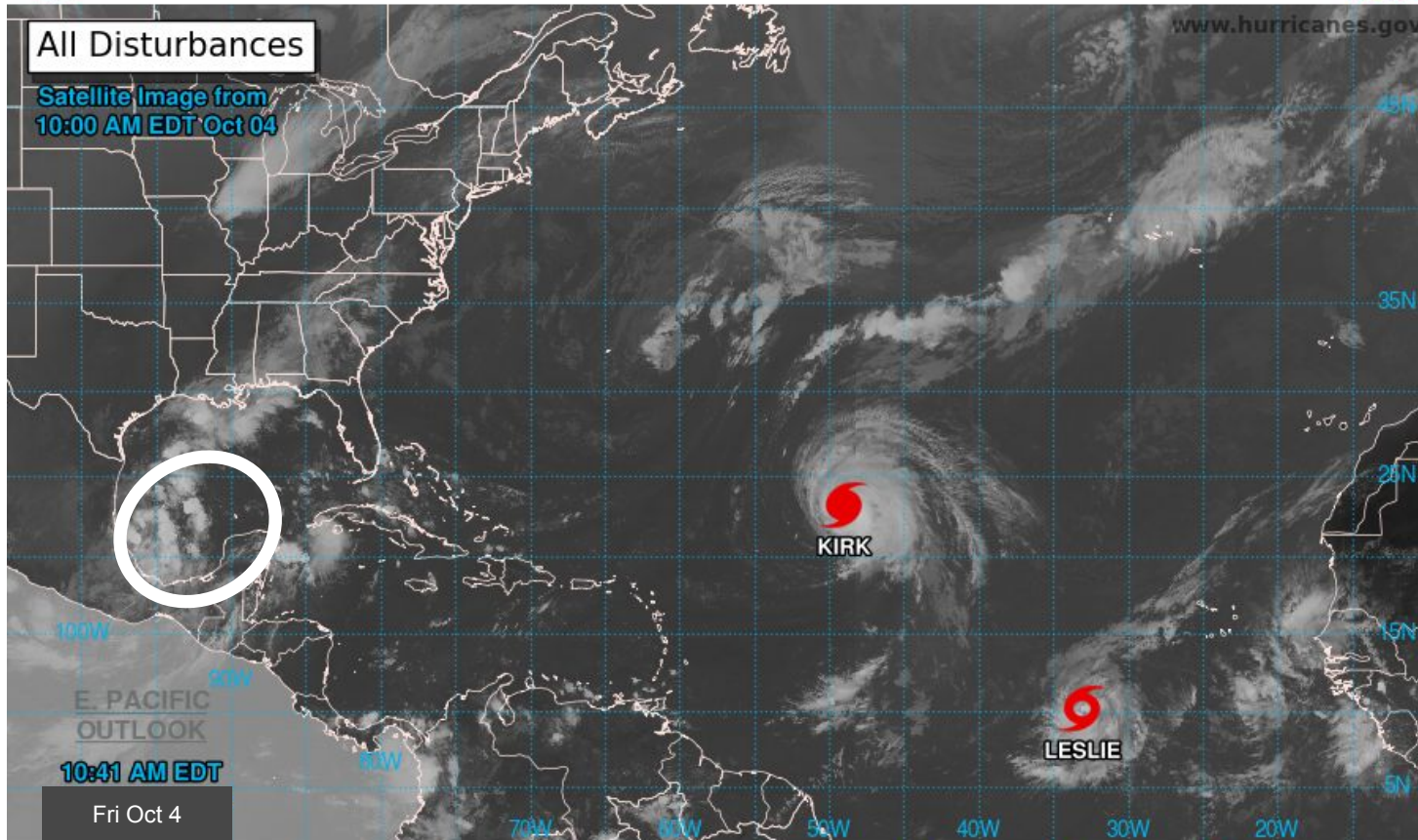


# Current Satellite View

EXERCISE



## Two-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida



Disorganized showers & thunderstorms over western Gulf

Broad low expected to form over the southern Gulf this weekend

Gradual tropical development possible as low drifts east or northeast in the 3-5 day timeframe.

Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

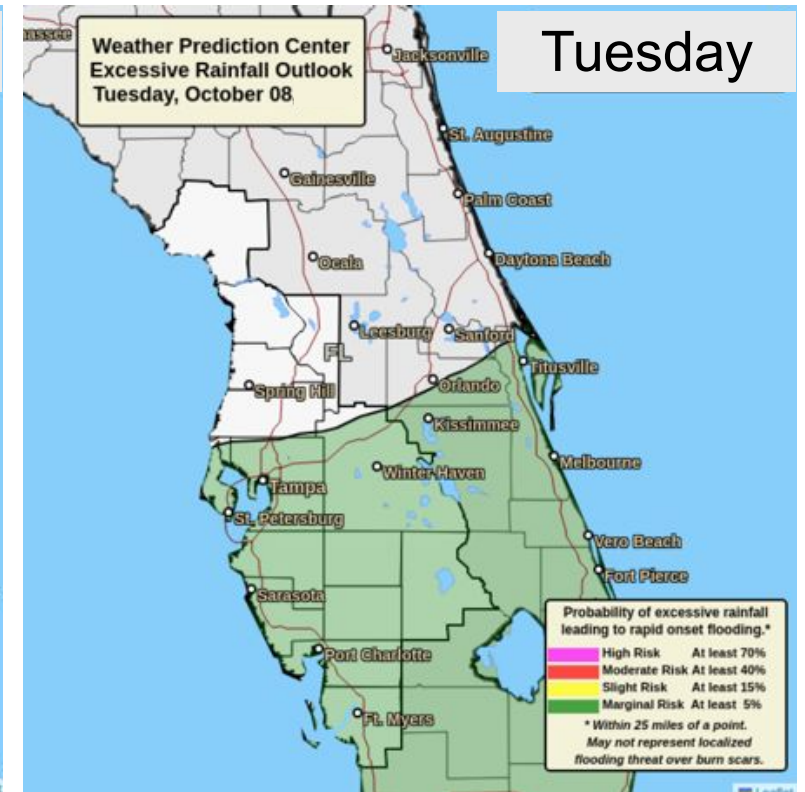
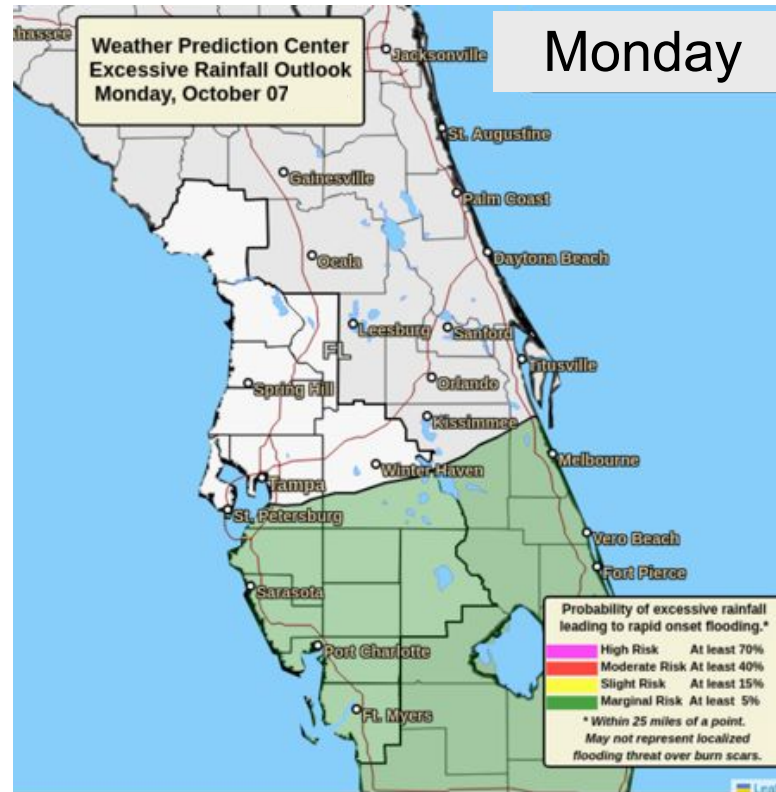
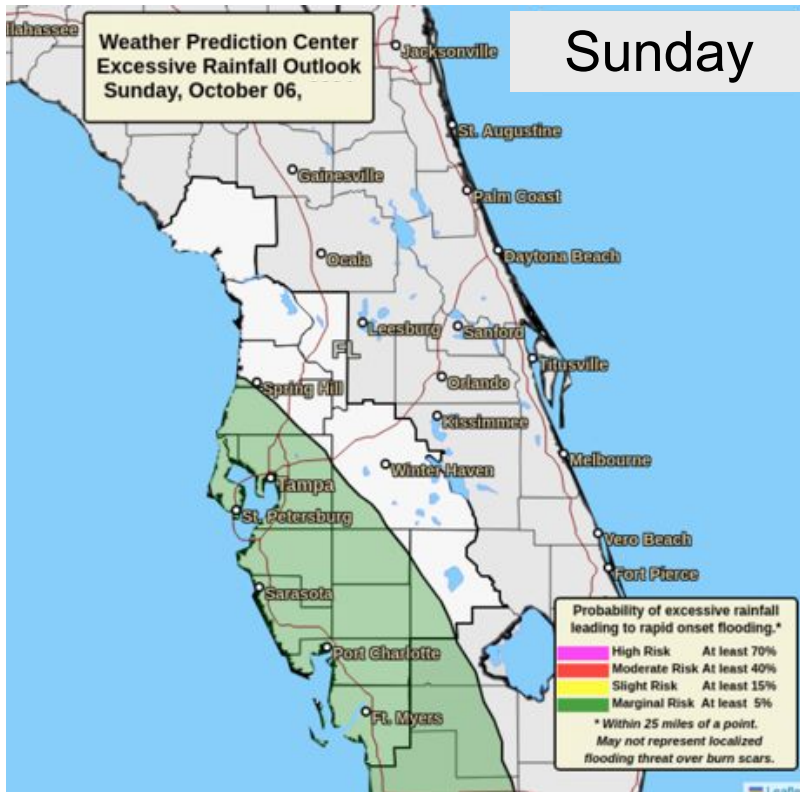


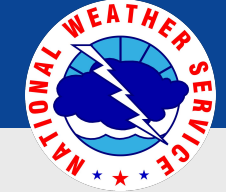


# Excessive Rainfall Outlooks

EXERCISE

- Areas outlined in green have the greatest potential for flash flooding Sunday – Tuesday
- Widespread flooding rainfall could lead to river flooding □ too early for specifics.

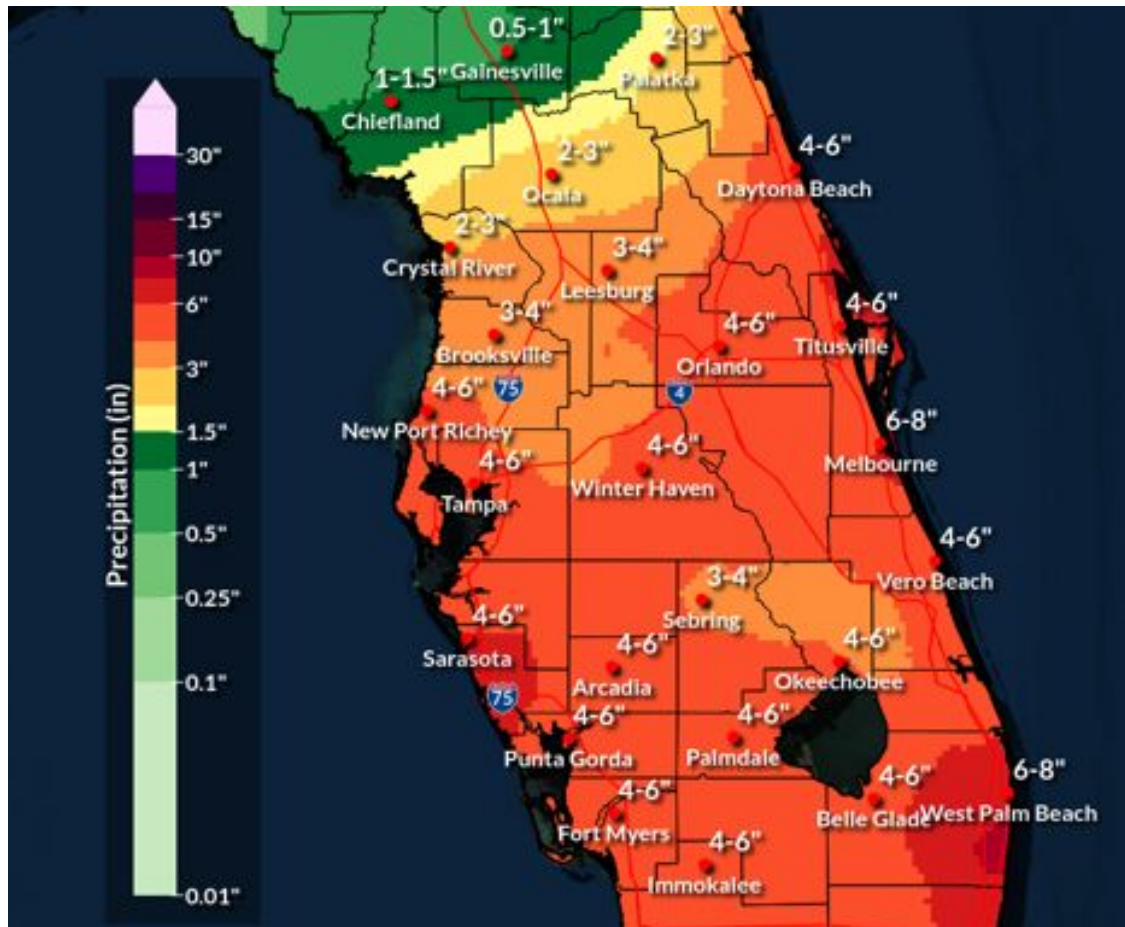




# Expected Storm Total Rainfall

EXERCISE

## 120 Hour Day 3-7 Forecast Rainfall Amounts



### Rainfall Forecast

Sunday Oct 6 through Thursday Oct 10

- Widespread 4-6 inches expected
- Higher end: 6-8 inches

This will change & likely increase if tropical cyclone formation occurs.



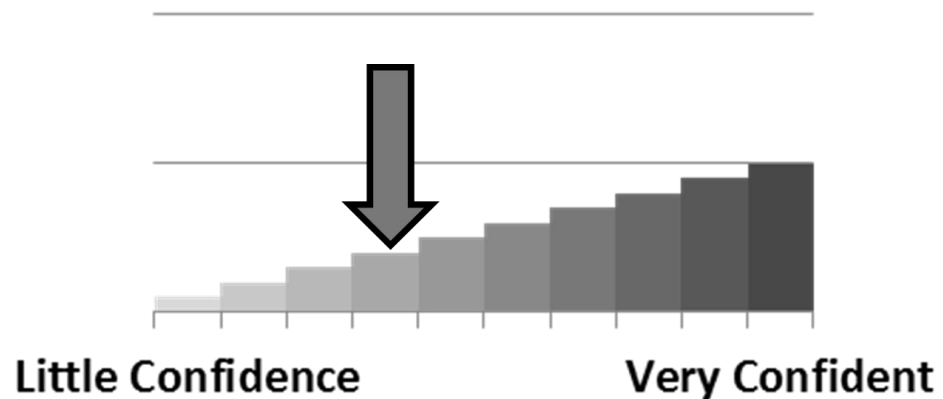


# Key Takeaways

EXERCISE

- Increasing confidence of localized flooding rain risk Sunday through Thursday.
- Consider early flood mitigation if in flood prone areas - move objects to higher ground.
- Too early to determine tropical specific impacts for West Central & Southwest Florida.
- Weekend Plans: Stock supply kits, review evacuation plan & zone & monitor forecasts.

## Forecast Confidence



Medium (40%) confidence of tropical cyclone development

Increased confidence of flooding rain risk Sun-Tue

Low confidence for local tropical cyclone impacts, if any





## Q & A

Is your location at risk of tropical cyclone impacts in the next 5 days?

1. Yes
2. No
3. Not enough information



## Q & A

Per the briefing, what weather hazard(s) could impact your county regardless of tropical cyclone development?

1. Hurricane Force Winds
2. Flooding Rain
3. Storm Surge
4. Tornadoes
5. River Flooding
6. Not enough information



## Q & A

What are some key messages to share with the public at this time frame?

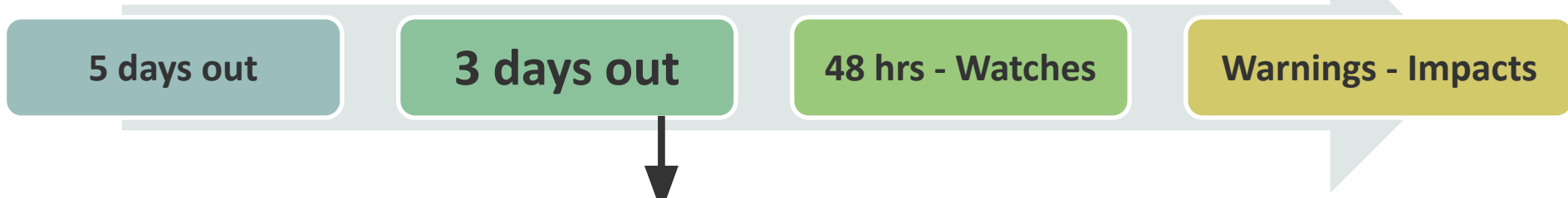
Ensure your kits are stocked & review evacuation plans.

Identify your evacuation zone. Re-educate flood zone vs evacuation zone.

Pet plan? Enough Medicine? Medical supplies?

Continue to monitor forecasts.

Reinforce credible forecast & emergency alert resources including NWS, NHC & county emergency management.



Just Beyond Watches  
Potential Impacts  
NWS Emails & Webinars  
SLACK



# Tropical Storm Milton

7 AM EDT Briefing  
Sunday, Oct 6, 2024






*Milton is forecast to strengthen into a Major Hurricane before landfall  
Flood Watch in effect area-wide through Thursday*



- Milton is expected to strengthen into a MAJOR HURRICANE as it moves east-northeast across the Gulf
- Hurricane and Storm Surge Watches will likely be issued later today
- Flood Watch is now in effect area-wide through Thursday
  - Storm Total Rainfall: 5-8 inches with locally up to 12 inches
- Impact Timing: Late Tuesday into Thursday morning
- Uncertainty regarding the exact landfall location
  - 4 day track error is about 150 miles

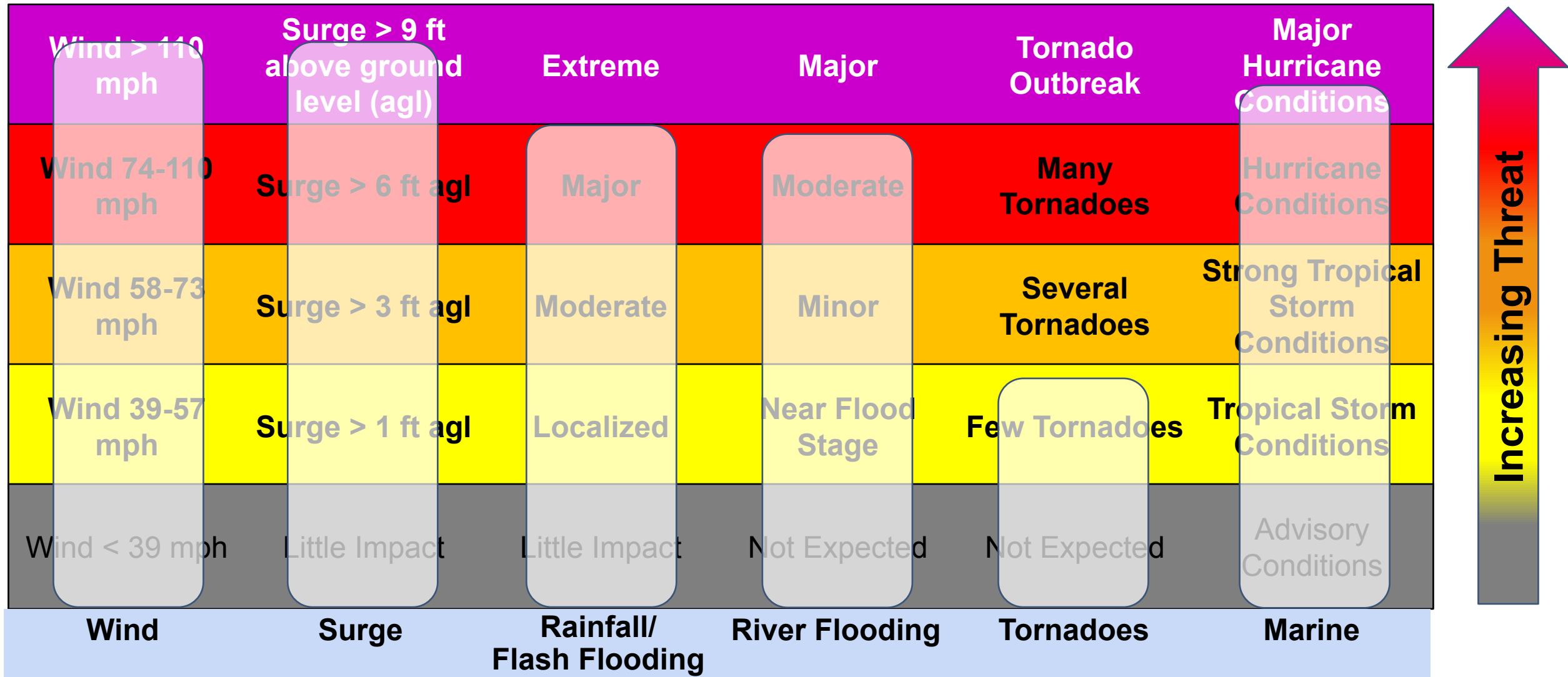


# Situation Overview

Hazard	Impacts	Location	Timing
 <p><b>Wind</b></p>	Hurricane force winds across the entire coast	Entire Coast	Late Tuesday into early Thursday.
 <p><b>Storm Surge &amp; Inundation</b></p>	Life-threatening storm surge	Entire Coast	Late Tuesday into Wednesday
 <p><b>Flooding Rain</b></p>	Many rivers already in or forecast to go into Flood Stage	Areawide	Through Thursday
 <p><b>Tornado</b></p>	Potential for a few tornadoes	Areawide	Late Tuesday into Wednesday
 <p><b>Marine</b></p>	Hazardous Marine Conditions	Coastal Marine Waters	Tuesday through Thursday.



# Threat Levels

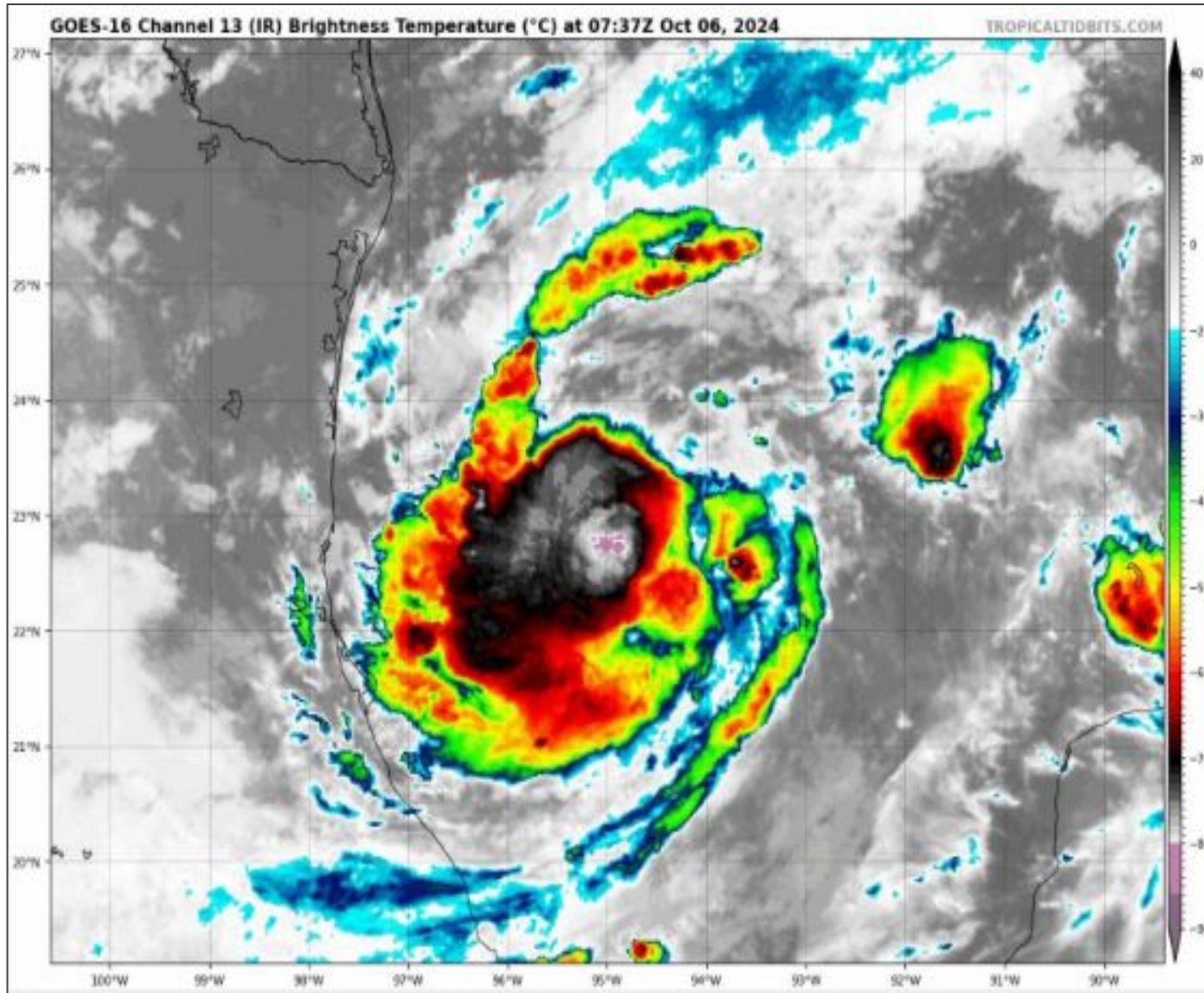




# Situation Overview



- Tropical Storm Milton is forecast to rapidly strengthen into a Category 3 Major Hurricane as it moves across the Gulf this week
- Landfall is possible somewhere along the west coast of Florida by mid-week
- Confidence is low in exact landfall location
  - The spread in the forecast track remains high with model inconsistency



- As of 4 am, the center of Tropical Storm Milton was about 845 miles west-southwest of Tampa, FL
- Maximum sustained winds: 50 mph
- Movement: East at 5 mph



# Tropical Storm Wind Speed Probabilities

Tampa Bay Area **EXERCISE**

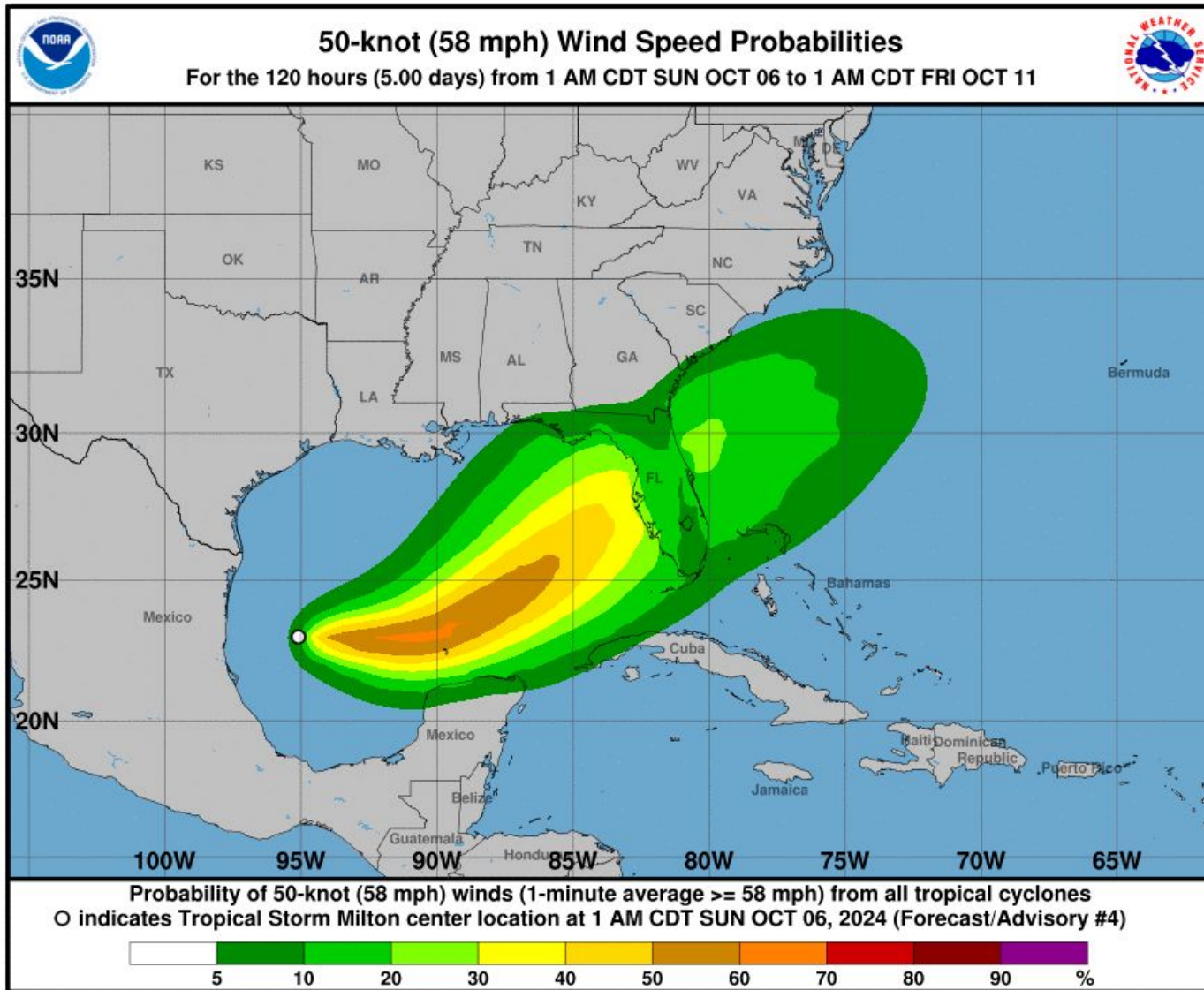


- Tropical Storm Force Wind Speed Probabilities:
  - Coastal locations as high as 60-70%
  - Inland locations as high as 40-50%
  
- Probability Trends: **Increasing**



# Strong Tropical Storm Wind Speed Probabilities

Tampa Bay Area **EXERCISE**

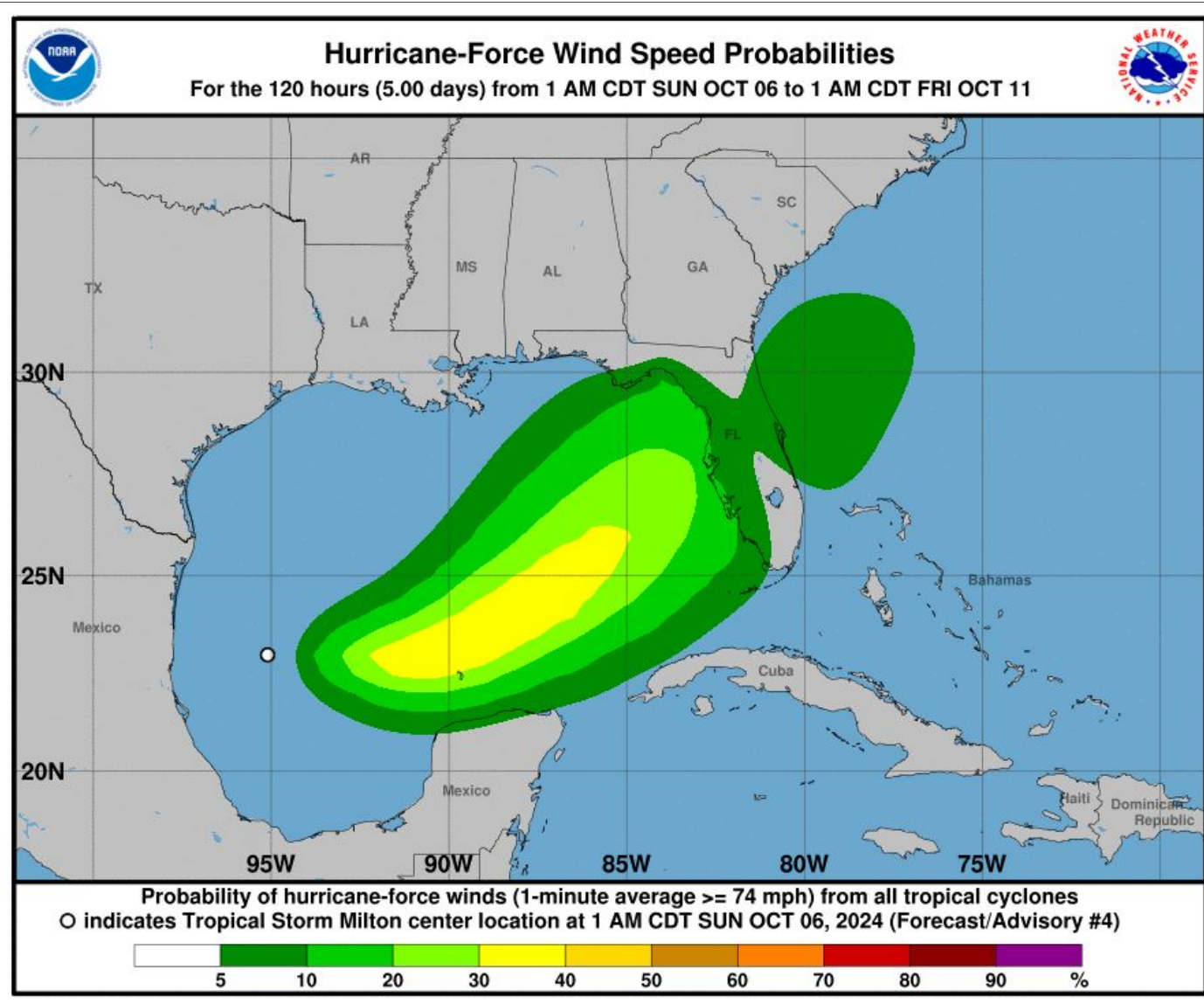


- Strong Tropical Storm Force Wind Speed Probabilities:
  - Coastal locations as high as 30%
  - Inland locations as high as 10-20%
- Probability Trends: **Increasing**



# Hurricane Wind Speed Probabilities

Tampa Bay Area **EXERCISE**

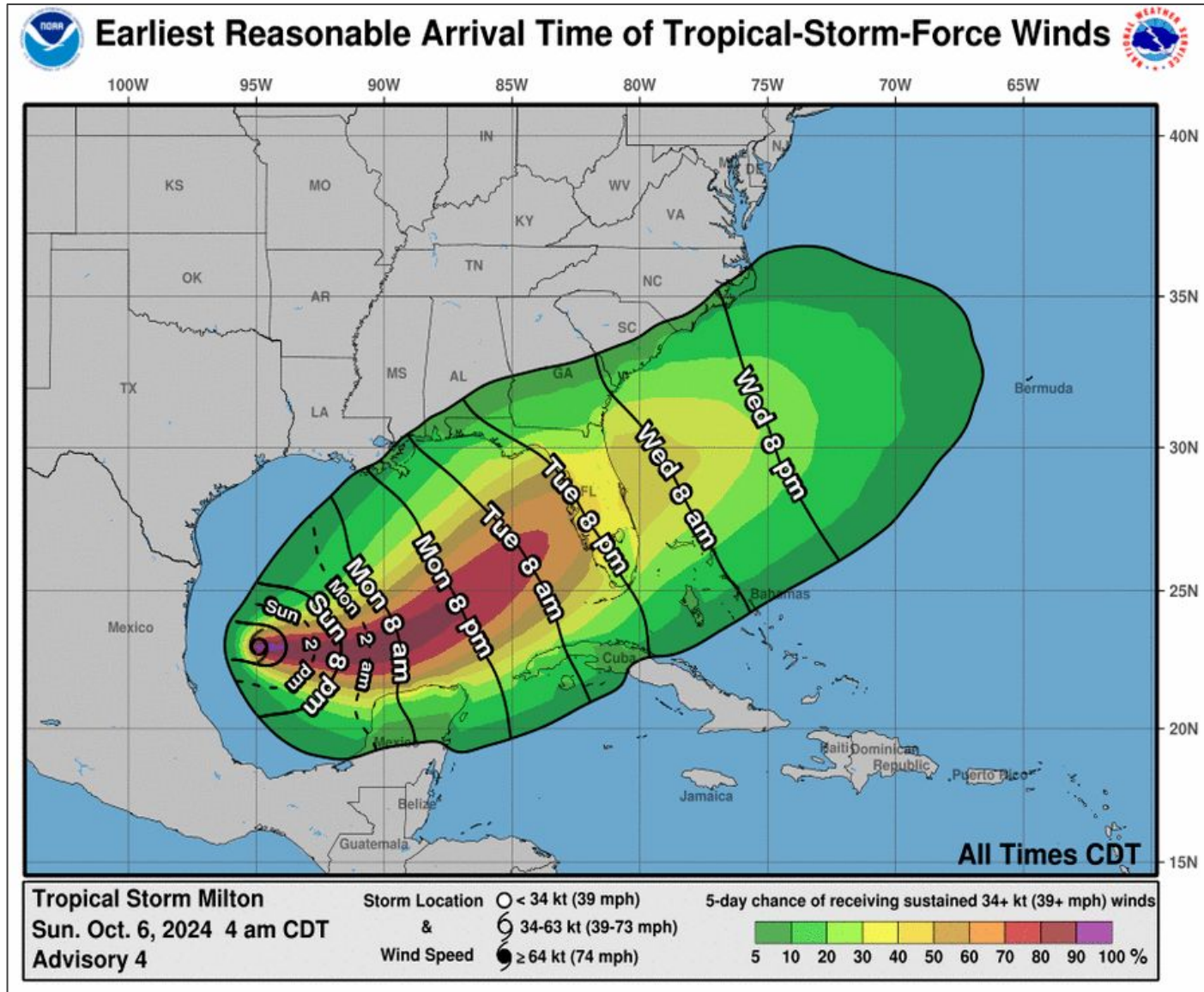


- Hurricane Force Wind Speed Probabilities:
  - Coastal locations as high as 10%
- Probability Trends: **Increasing**
- *NOTE: small numbers can be significant when looking at the potential for hurricane force winds*



# Earliest Reasonable Time of Arrival

Tampa Bay Area **EXERCISE**



- The earliest reasonable time of arrival of Tropical Storm Force Winds is Tuesday Evening
- *However*, the most likely time the area could begin to experience tropical storm force winds will be Wednesday morning



# Storm Surge Risk

National Weather Service

Tampa Bay Area **EXERCISE**



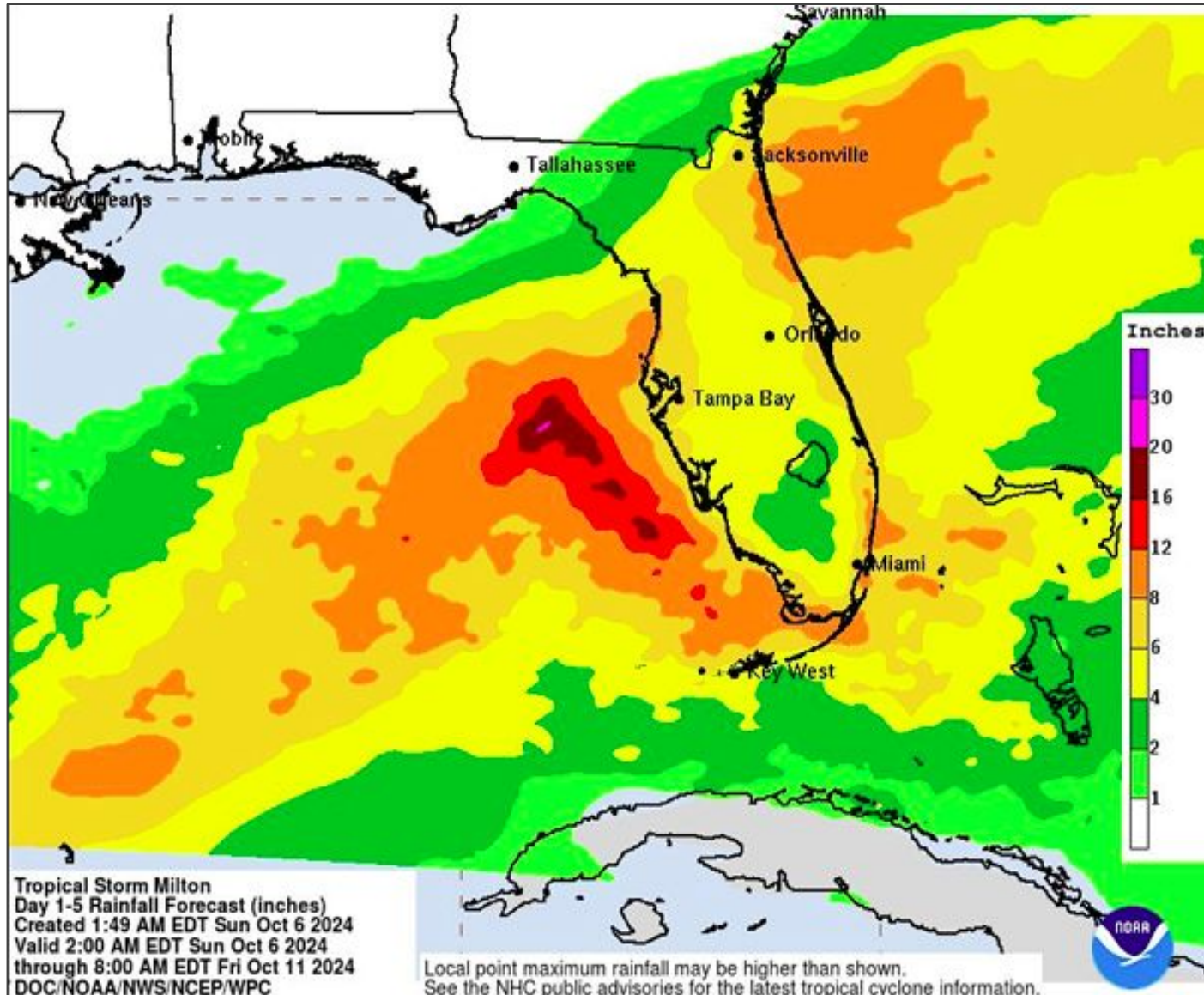
- Coastal inundation risk of **greater than 10 feet AGL** - this will be life-threatening
- Vulnerable Areas
  - Caloosahatchee River Basin
  - Peace River
  - Tampa Bay
- *NOTE: Storm-specific storm surge information from the NHC will be provided later today or tomorrow*



# Rainfall Forecast

# National Weather Service

Tampa Bay Area **EXERCISE**



- **Flood Watch** in effect area-wide
- Storm Total Rainfall Forecast: 5-8 inches
- Localized totals up to 12 inches possible
- *NOTE: The higher rainfall axis will continue to shift as the forecast track is adjusted in the coming days*



# Rainfall Outlook

# National Weather Service

Tampa Bay Area **EXERCISE**



- Heavy rain is forecast now through Tuesday ahead of Milton’s outer rainbands due to a lingering front
- Highest rainfall totals will be along and north of Milton’s eventual landfall location
- Southwest Florida Excessive Rainfall Risk:
  - Slight Risk: Today, Monday, Tuesday (level 2 of 4)
  - Moderate Risk: Wednesday (level 3 of 4)
- *NOTE: Flash flood threat extends further inland from the coast*

<b>High Risk</b> ≥ 70% of flooding rainfall	<b>Moderate Risk</b> At least 40% of flooding rainfall	<b>Slight Risk</b> At least 15% of flooding rainfall	<b>Marginal Risk</b> At least 5% of flooding rainfall
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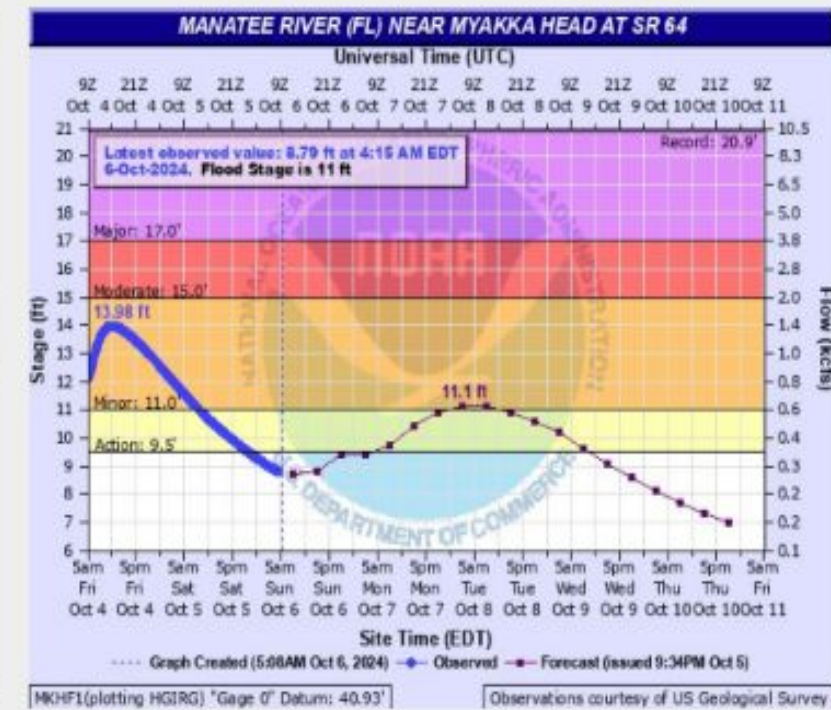


# River Forecasts

# National Weather Service

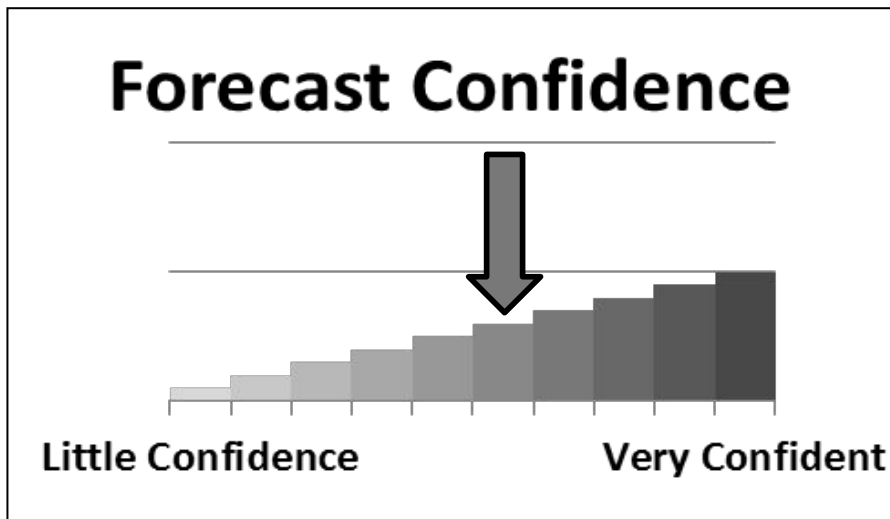
Tampa Bay Area **EXERCISE**

- NOTE: Expect to see significant changes in the river forecasts by early this week as the current river models only have 48 hours of rainfall data
  - The current forecasts do NOT yet account for the rainfall associated with Milton





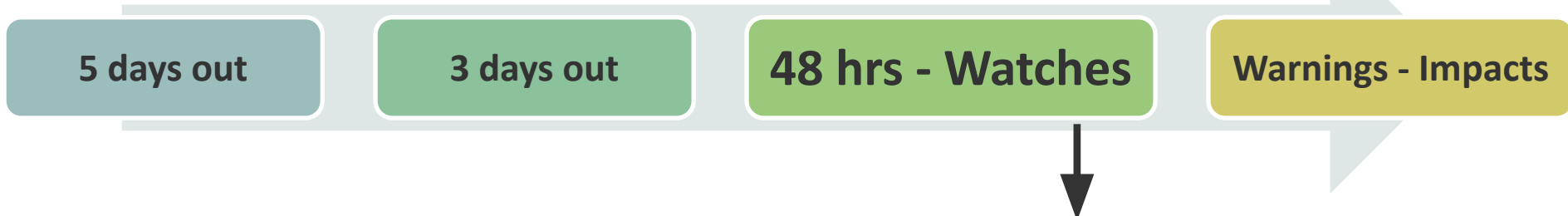
- Milton is expected to rapidly strengthen as it moves east-northeast across the Gulf
- Life-threatening storm surge is forecast
- Heavy rainfall will lead to a flash flood threat that extends inland
- **Continue to complete hurricane preparations and monitor official forecasts**



Increasing confidence of Major Hurricane at landfall somewhere along the Florida Peninsula West Coast

Confidence is low in exact landfall location

***Watches will likely be issued later today***



Refined Timing of Impacts

More Specific Impacts

NWS Emails & Webinars

SLACK



# Hurricane Milton

7 AM EDT Briefing  
Monday, Oct 7, 2024

Hurricane and Storm Surge Watches now in effect.  
Milton will be a historic storm for the west coast of Florida.








- Hurricane Watch in effect for the entire area
- Storm Surge Watch in effect: Life-threatening storm surge forecast
  - ◆ 8-12 ft for Pinellas, Hillsborough, Manatee, and Sarasota counties
  - ◆ 5-10 ft for Charlotte, Lee, Pasco, Hernando, Citrus
  - ◆ 5-7 ft MSL for Levy
- Flood Watch out for the entire area: Rainfall amounts of 5 to 10 inches, with localized totals up to 15 inches
- Timing of impacts to the area looks to be as early as early Wednesday morning and continuing into early Thursday morning



# Situation Overview

# National Weather Service

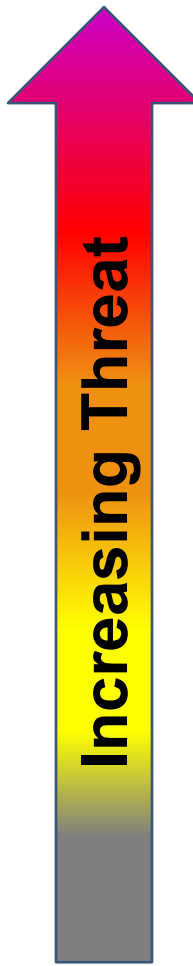
Tampa Bay Area **EXERCISE**

Hazard	Impacts	Location	Timing
 A black and white icon showing a tree with its branches being blown by a strong wind.	<b>Wind</b> Hurricane force winds across the entire coast	Entire Coast	Early Wednesday morning into early Thursday.
 A black and white icon showing a car partially submerged in water waves.	<b>Storm Surge &amp; Inundation</b> Life-threatening storm surge	Entire Coast	Early Wednesday into midday Thursday
 A black and white icon showing a car on a road with a large exclamation mark and water waves, indicating a flood warning.	<b>Flooding Rain</b> Many rivers already in or forecast to go into Flood Stage	Areawide	Through Thursday
 A black and white icon showing a funnel cloud (tornado) between two hills.	<b>Tornado</b> Potential for a few tornadoes	Areawide	Late Tuesday into Wednesday Night
 A black and white icon showing a large, curling wave crashing.	<b>Marine</b> Hazardous Marine Conditions	Coastal Marine Waters	Tuesday through at least Thursday.



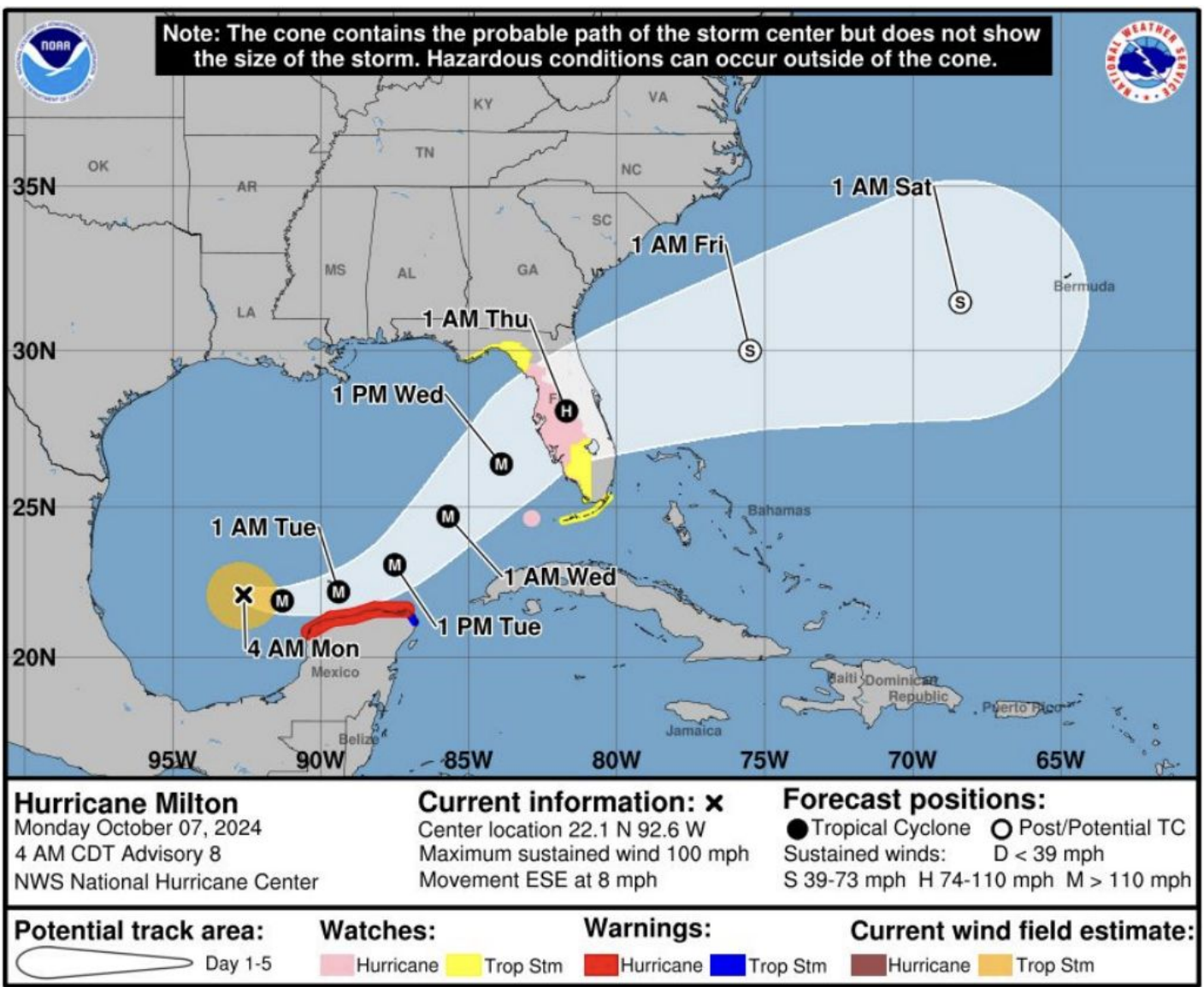
# Threat Levels

Wind > 110 mph	Surge > 9 ft above ground level (agl)	Extreme	Major	Tornado Outbreak	Major Hurricane Conditions
Wind 74-110 mph	Surge > 6 ft agl	Major	Moderate	Many Tornadoes	Hurricane Conditions
Wind 58-73 mph	Surge > 3 ft agl	Moderate	Minor	Several Tornadoes	Strong Tropical Storm Conditions
Wind 39-57 mph	Surge > 1 ft agl	Localized	Near Flood Stage	Few Tornadoes	Tropical Storm Conditions
Wind < 39 mph	Little Impact	Little Impact	Not Expected	Not Expected	Advisory Conditions
Wind	Surge	Rainfall/ Flash Flooding	River Flooding	Tornadoes	Marine

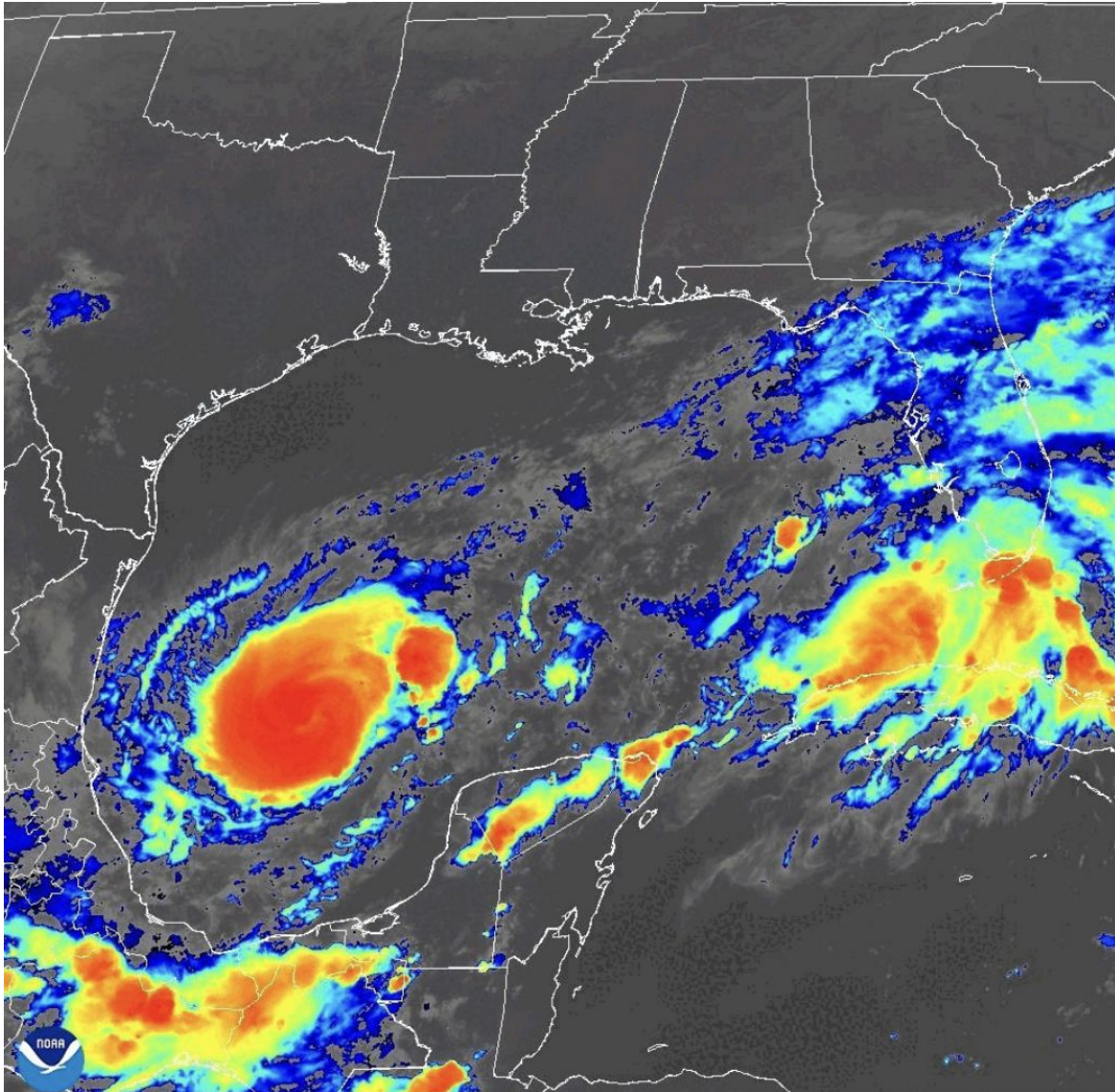




# Situation Overview



- Hurricane Milton is forecast to become a Major Hurricane (up to a Cat 4, 145 mph), with some expansion possible before landfall
- Model spread in the forecast track remains high, with the entire area within the cone



07 Oct 2024 03:11Z - NOAA/NESDIS/STAR - GOES-East - Sandwich Composite - GM

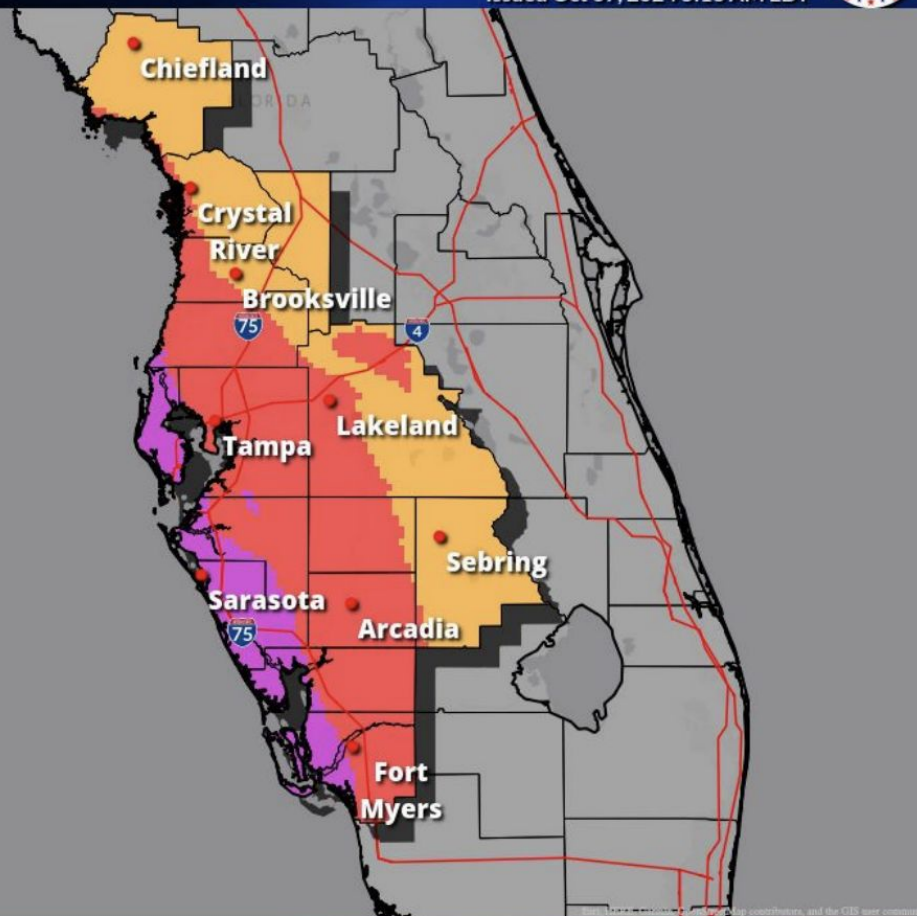
## Tropical Storm Milton

- Located 750 miles WSW of Tampa, FL
- Maximum Sustained Winds: 100 mph Cat 2
- Movement: ESE at 8 mph



## Wind Threat

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 5:13 AM EDT



Potential for wind greater than 110 mph
Potential for wind 74 to 110 mph
Potential for wind 58 to 73 mph
Potential for wind 39 to 57 mph

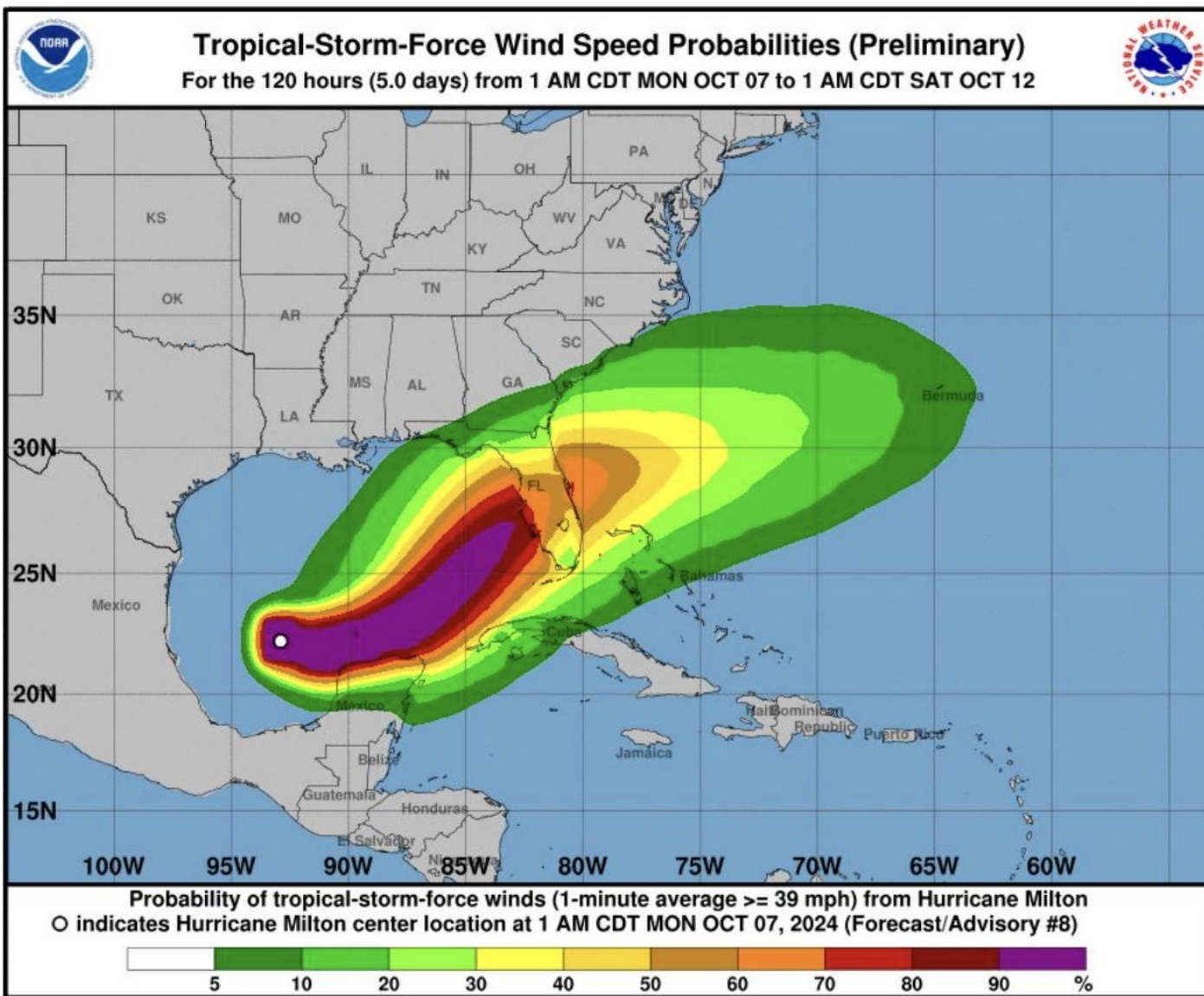
There is a potential for:

- Higher than Cat 3 winds along the coast from Pasco southward
- Hurricane force winds will extend well inland with a Hurricane Watch for the entire area



# Tropical Storm Wind Speed Probabilities

NWS Tampa Bay Area **EXERCISE**

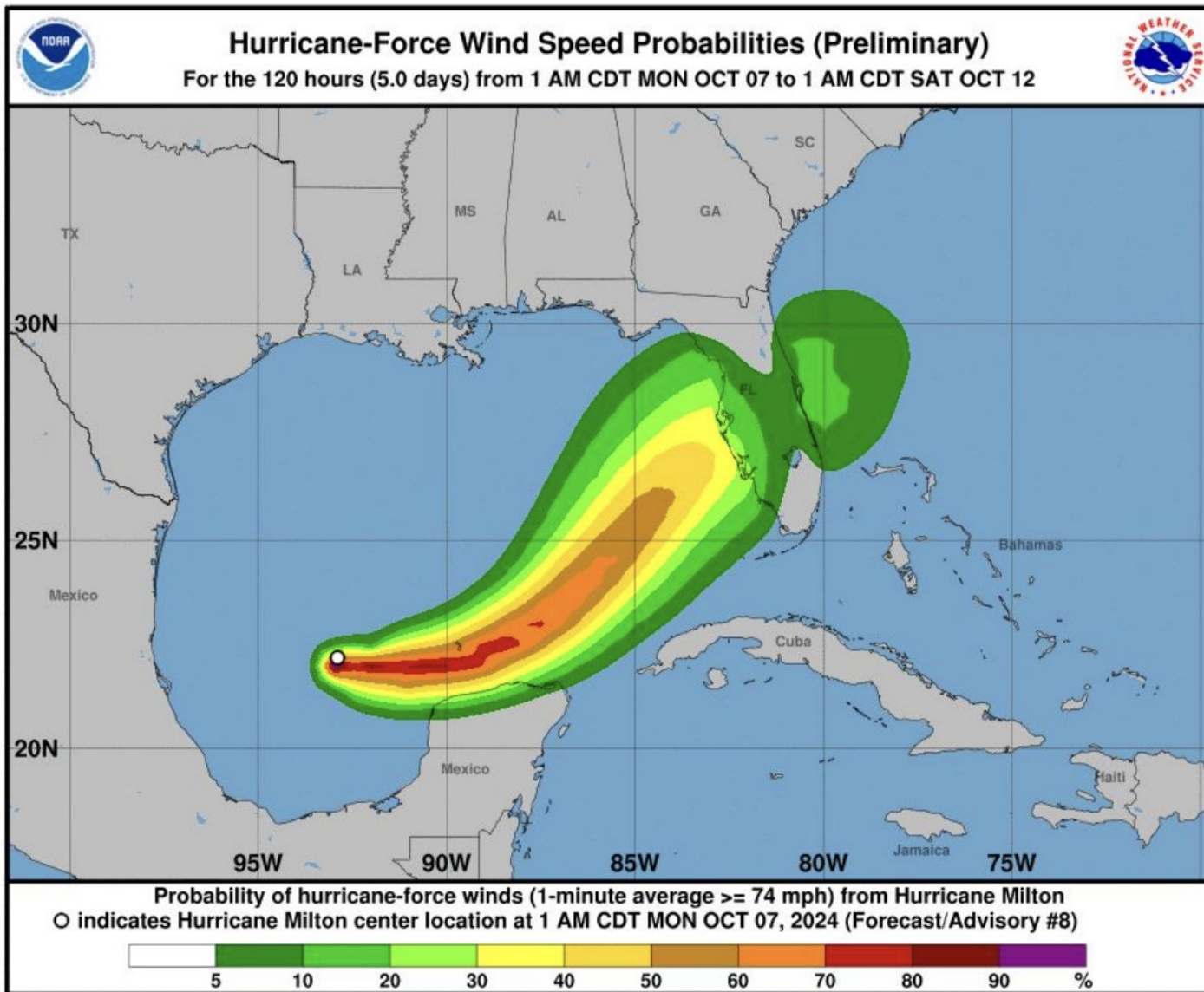


→ Tropical Storm Force wind probabilities around 80-90% along the coast and as high as 60-70% inland.



# Hurricane Wind Speed Probabilities

NWS Tampa Bay Area **EXERCISE**



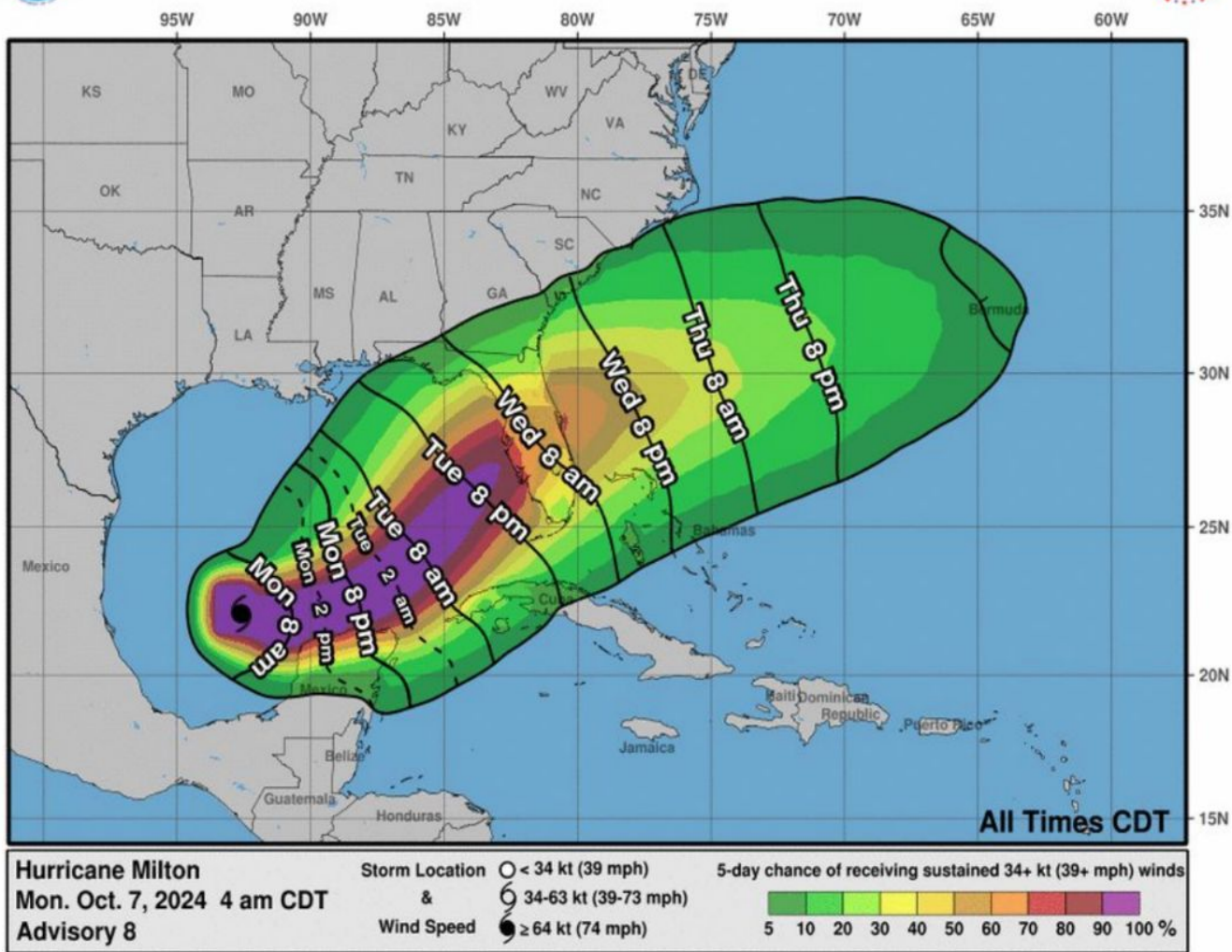
→ Probabilities as high as 30% along the coast



# Earliest Reasonable Time of Arrival

Hurricane Milton

## Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



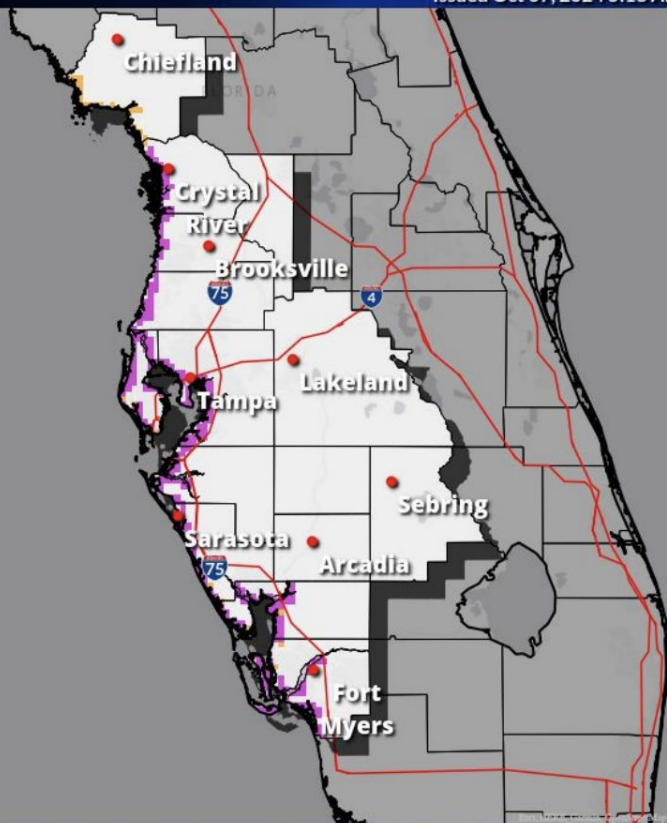
County	Chance	Earliest Arrival Time	Most Likely Arrival Time
Lee	86%	1 am Wed	8 am Wed
Charlotte	88%	1 am Wed	8 am Wed
Sarasota	88%	2 am Wed	10 am Wed
DeSoto	69%	7 am Wed	2 pm Wed
Hardee	69%	7 am Wed	2 pm Wed
Highlands	61%	8 am Wed	4 pm Wed
Manatee	80%	2 am Wed	10 am Wed
Pinellas	81%	2 am Wed	10 am Wed
Pasco	81%	4 am Wed	12 pm Wed
Hillsborough	68%	7 am Wed	2 pm Wed
Polk	66%	8 am Wed	3 pm Wed
Sumter	59%	8 am Wed	4 pm Wed
Hernando	71%	4 am Wed	12 pm Wed
Citrus	59%	6 am Wed	1 pm Wed
Levy	59%	7 am Wed	2 pm Wed



# Storm Surge Risk

## Storm Surge Threat

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 5:13 AM EDT



- Life-threatening storm surge forecast:
  - ◆ 8-12 ft for Pinellas, Hillsborough, Manatee, and Sarasota counties.
  - ◆ 5-10 ft for Charlotte, Lee, Pasco, Hernando, Citrus
  - ◆ 5-7 ft MSL for Levy
- Surge increasing throughout the day Wednesday and peak early Thursday



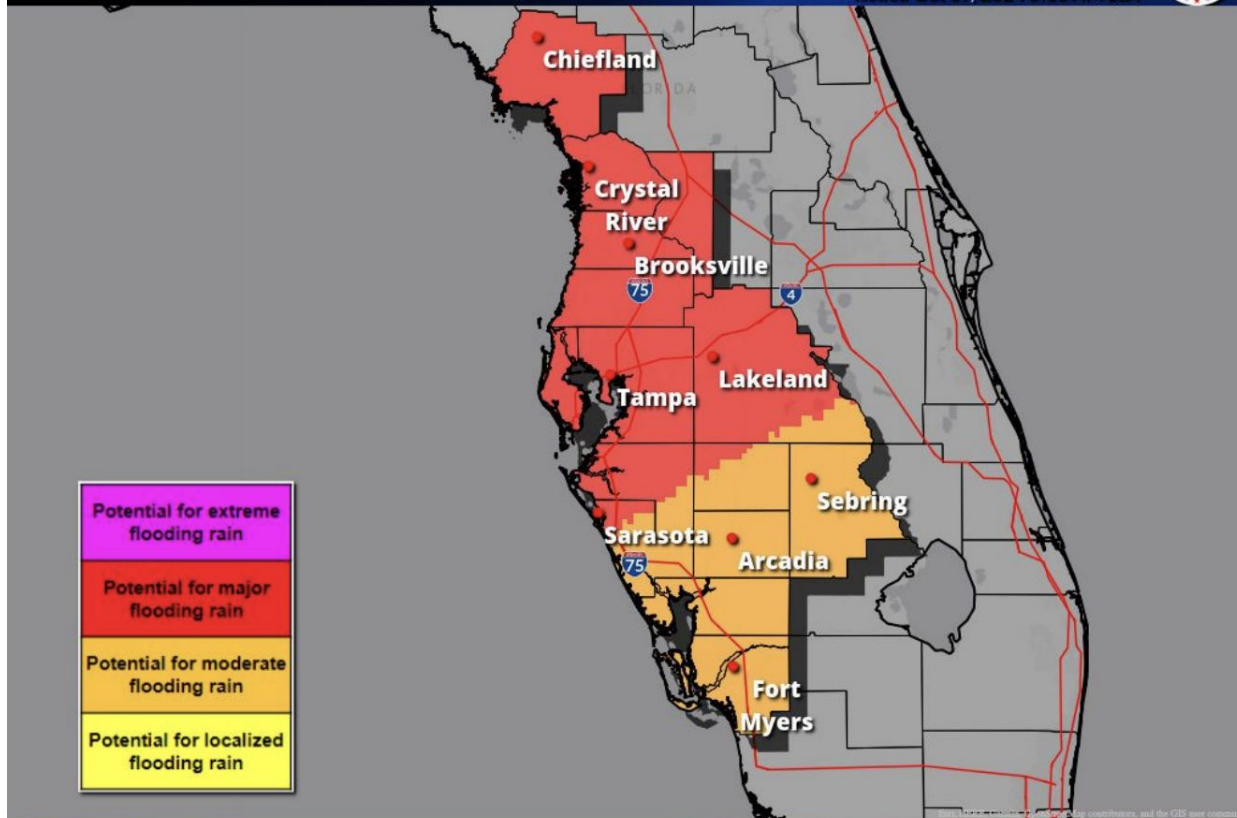
# Flooding Rain Threat

National Weather Service

Tampa Bay Area **EXERCISE**

## Flooding Rain Threat

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 5:13 AM EDT



@NWSTampaBay

weather.gov/tampabay

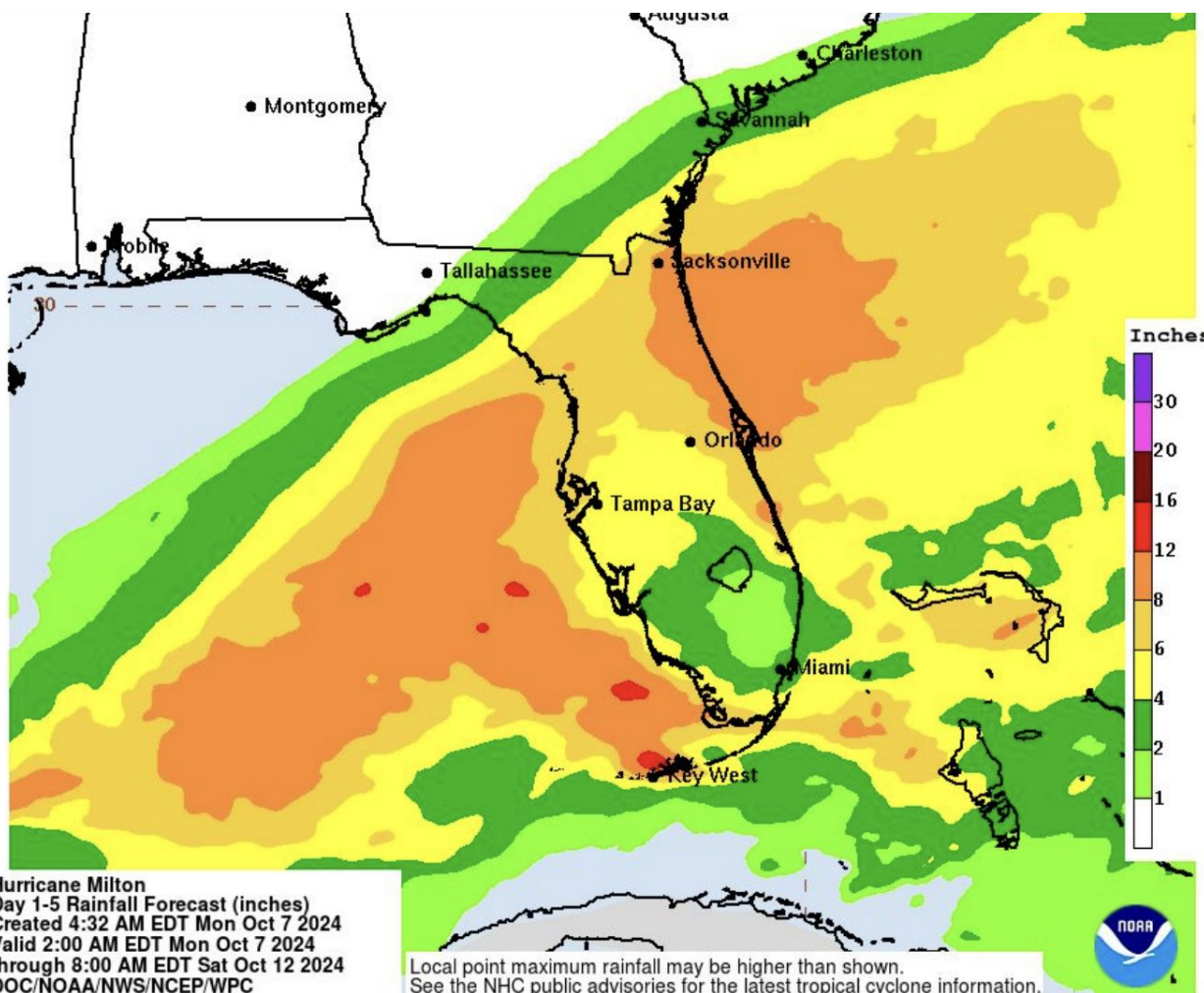
- Flood Watch out for the entire area through Thursday morning. Rainfall amounts of 5 to 10 inches, with localized totals up to 15 inches
- Many rivers already in or forecast to go into flood stage



# Rainfall Forecast

# National Weather Service

Tampa Bay Area **EXERCISE**



- ➔ Flood Watch out for the entire area through Thursday morning
- ➔ Rainfall amounts of 5 to 10 inches, with localized totals up to 15 inches

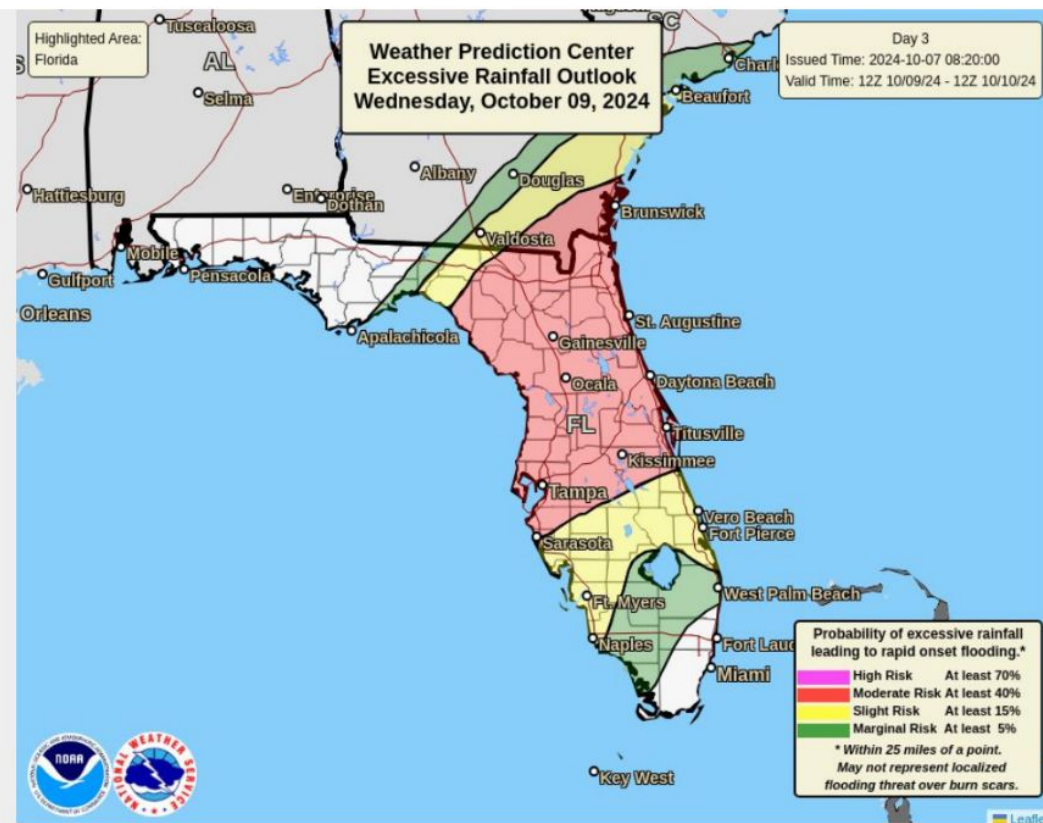
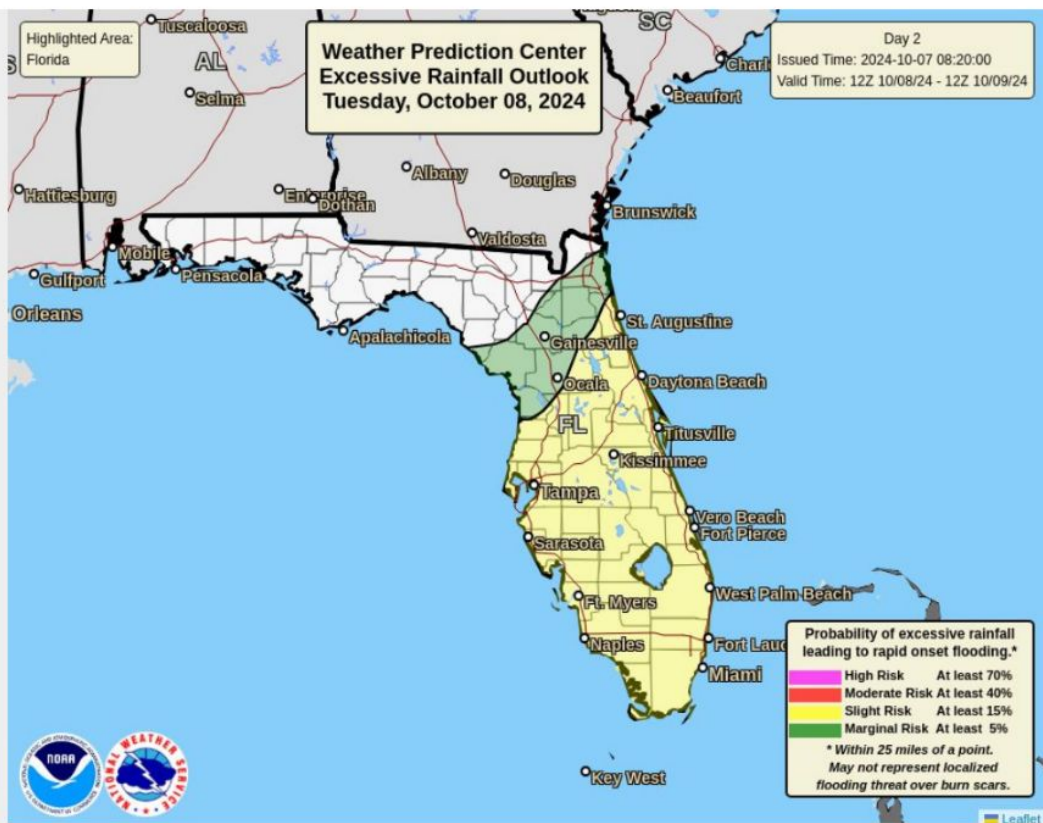


# Rainfall Outlook

# National Weather Service

Tampa Bay Area **EXERCISE**

- Heavy rainfall forecast Tuesday and Wednesday. Highest risk for Flash Flooding will be along and north of the track.



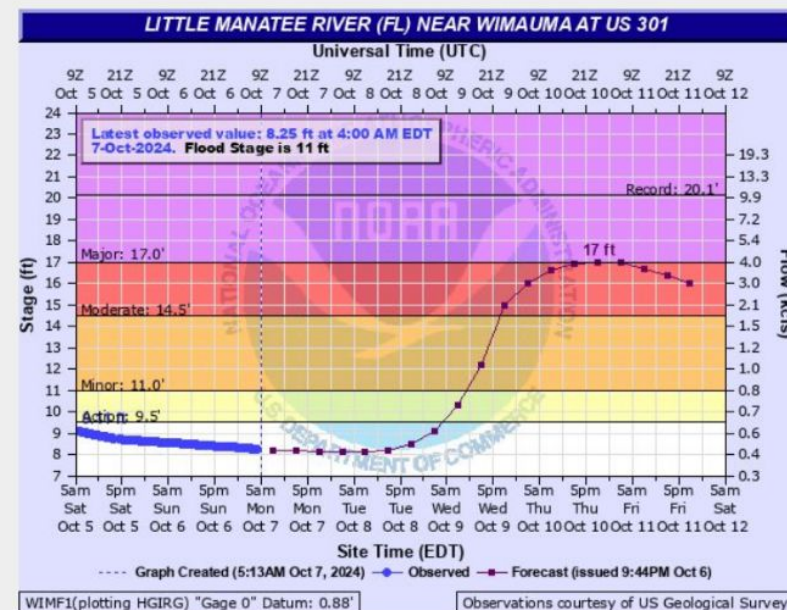
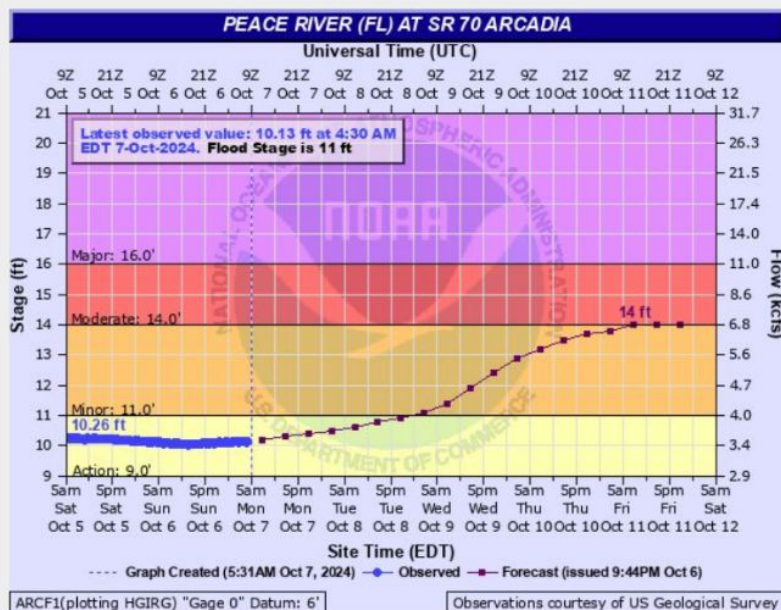
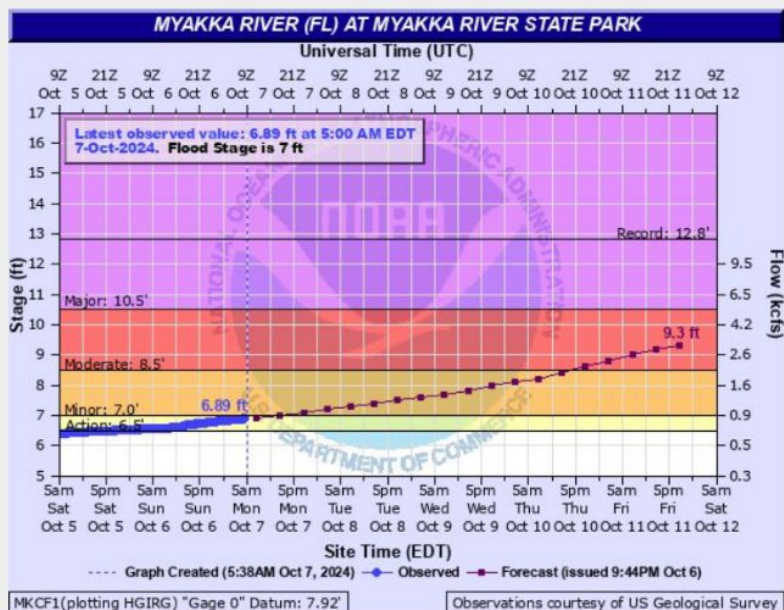


# River Forecasts

# National Weather Service

Tampa Bay Area **EXERCISE**

Many rivers forecast to go into minor to moderate flood stage with the potential for a few to go into major flood stage. The forecast is now in range to include the forecast rainfall from Milton.



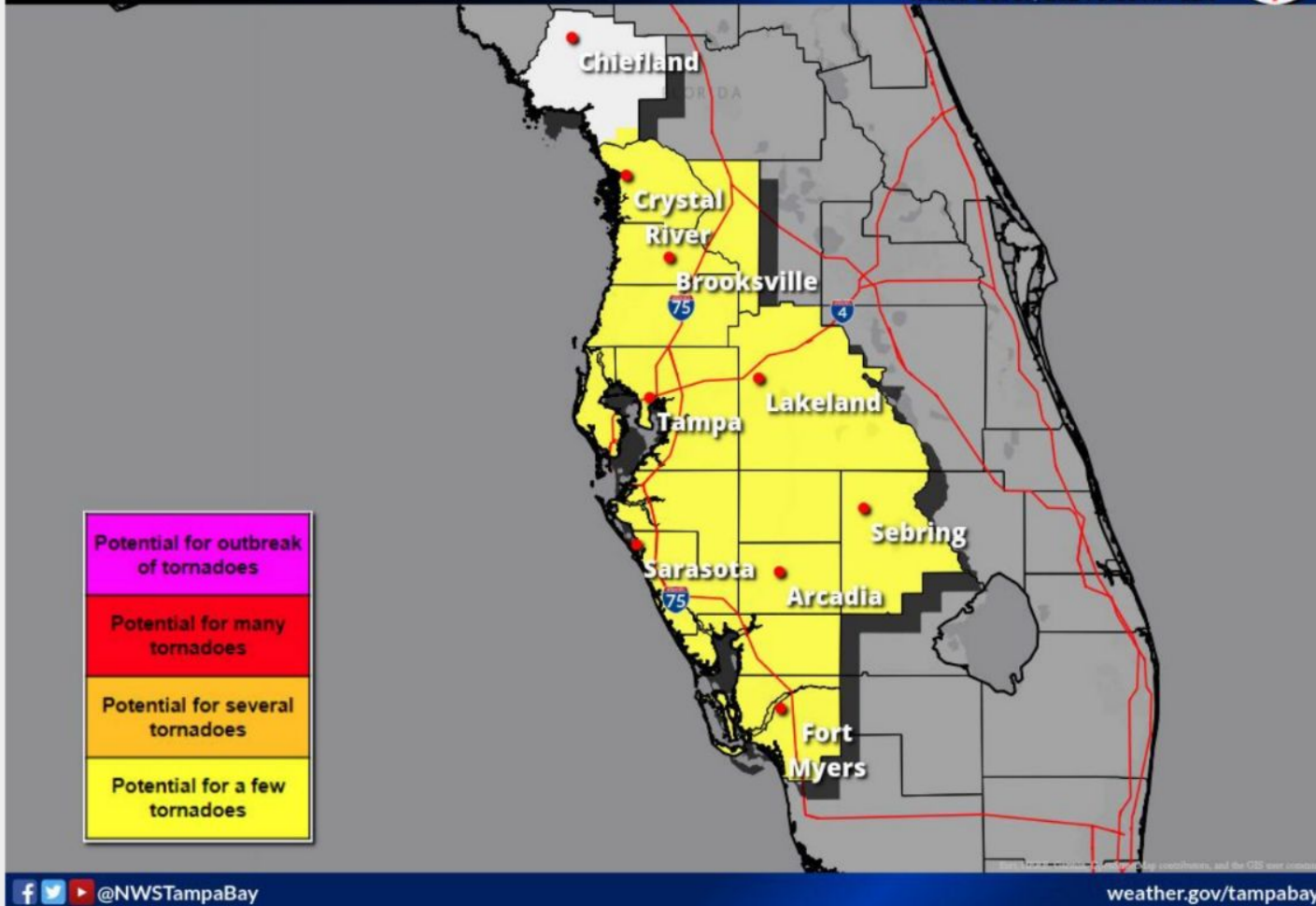


# Potential Tornado Impacts

Hurricane Milton

## Tornado Threat

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 5:13 AM EDT



- The threat for a few tornadoes mainly late Tuesday into Wednesday night.



# Today's Forecast

## Hurricane Milton

### Today

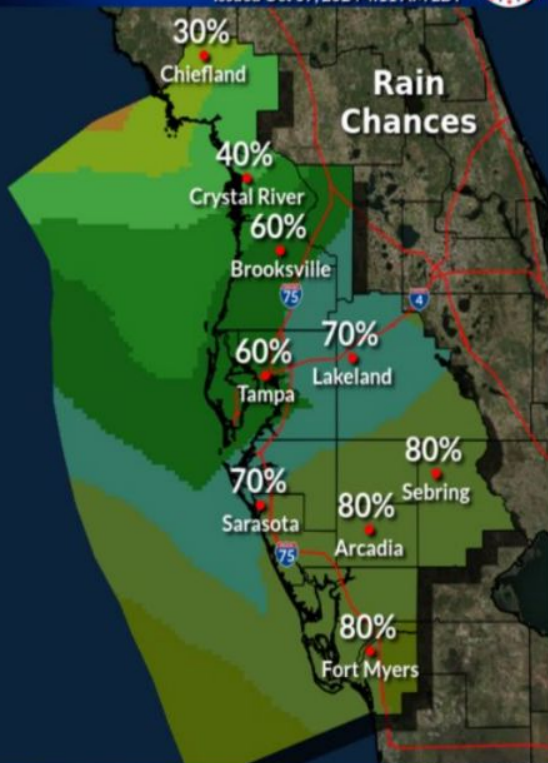
Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 4:11 AM EDT



### High Temperatures



### Rain Chances

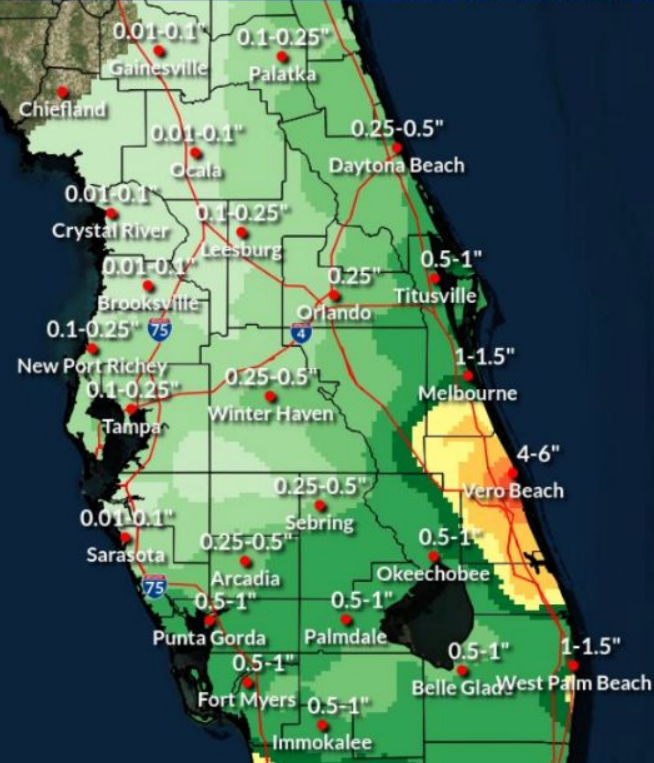
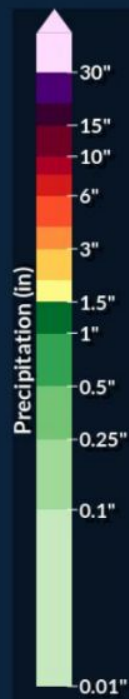


weather.gov/tampabay

### 24-Hour Forecast Rainfall Amounts

Valid 8:00 AM Mon Oct 07 2024 - 8:00 AM Tue Oct 08 2024

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 4:09 AM EDT



@NWSTampaBay

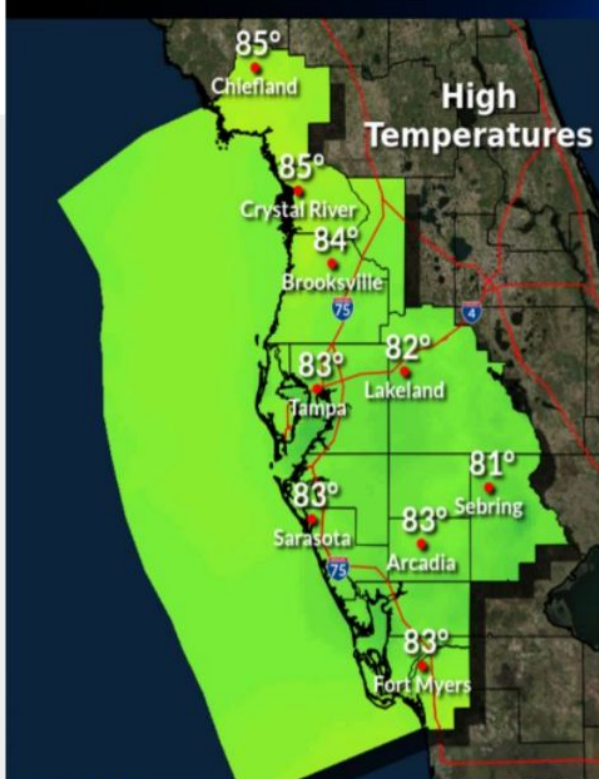
weather.gov/tampabay



# Tomorrow's Forecast

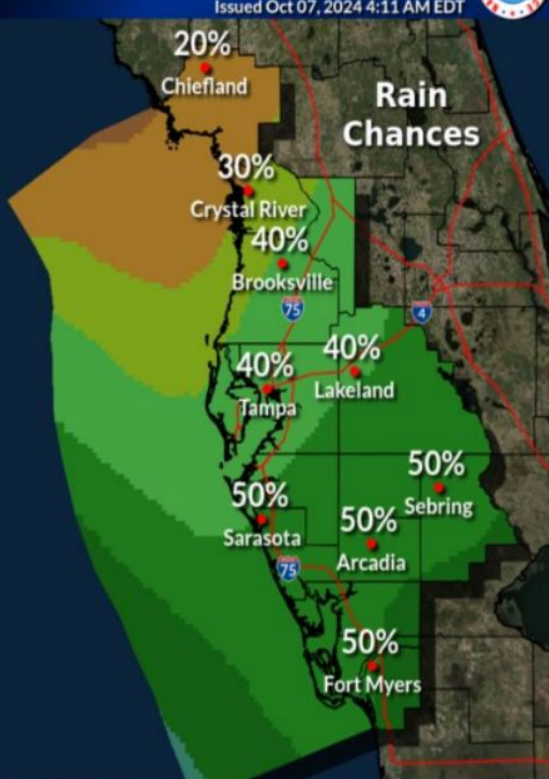
## Hurricane Milton

### Tuesday



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Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 4:11 AM EDT

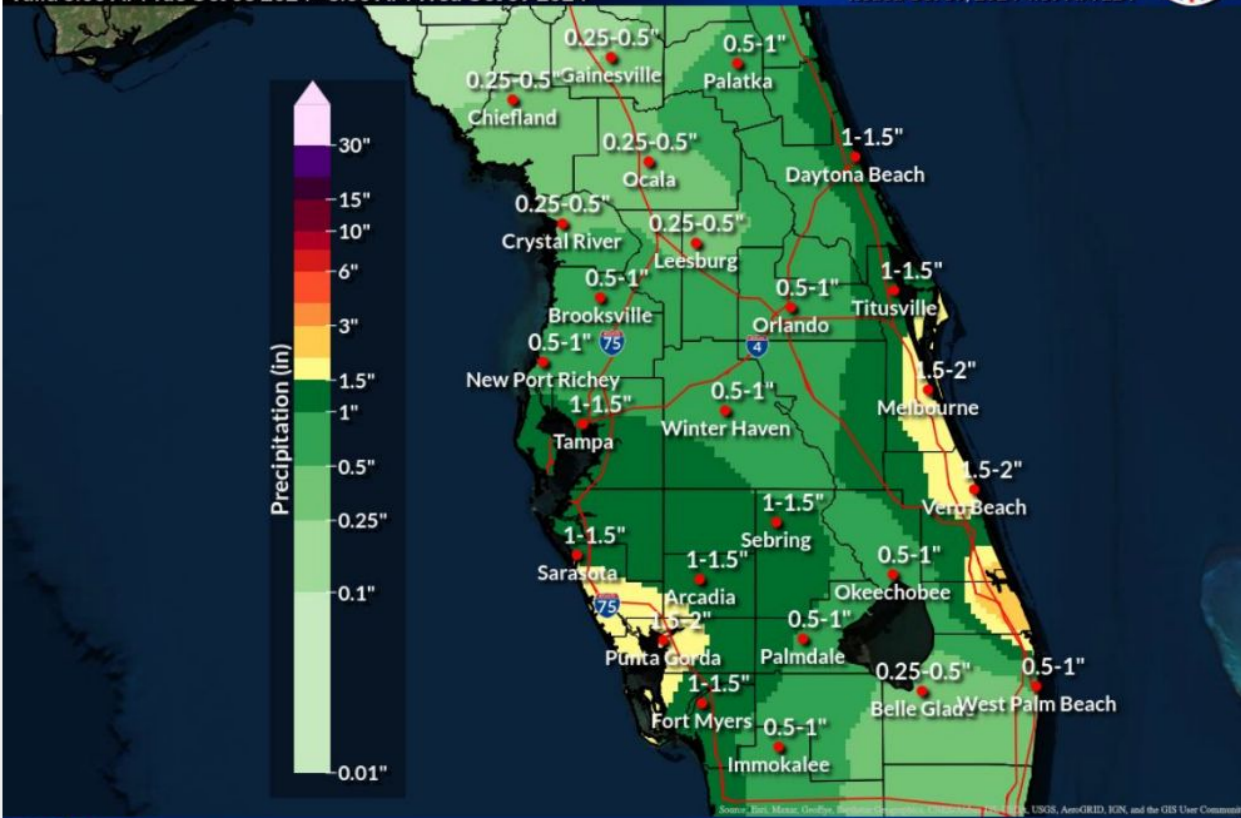


weather.gov/tampabay

## 24-Hour Forecast Rainfall Amounts

Valid 8:00 AM Tue Oct 08 2024 - 8:00 AM Wed Oct 09 2024

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 4:09 AM EDT



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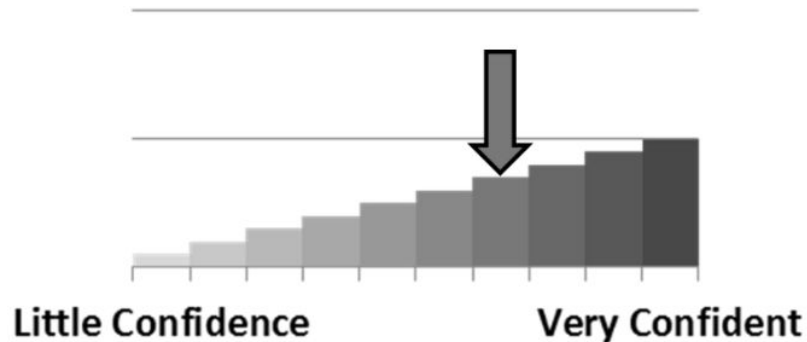


# Key Takeaways

**EXERCISE**

- Hurricane Milton is forecast to undergo rapid intensification as it moves to the east to northeast early this week.
- Hurricane, Storm Surge, and Flood watches are currently in effect. Life threatening storm surge is forecast with the system.
- The confidence is low on the exact track of the system, with the entire area currently within the cone. It should be noted that the 72 hour average track error is 100 miles

## Forecast Confidence



**Confidence continues to increase that Milton will make landfall as a major hurricane. Confidence is low on the exact location of landfall.**

5 days out

3 days out

48 hrs - Watches

Warnings - Impacts



Hunker Down

Tornado, Flash Flood, Extreme Wind Warning

POD Virtual Deployment Briefing



# Hurricane Milton Briefing

1 PM

Wednesday, Oct 9, 2024

Hurricane Milton forecast to make landfall late tonight through early Thursday morning as a Cat 3 storm.

Milton will bring historic impacts to the region.



# Situation Overview

Hurricane Milton

**EXERCISE**

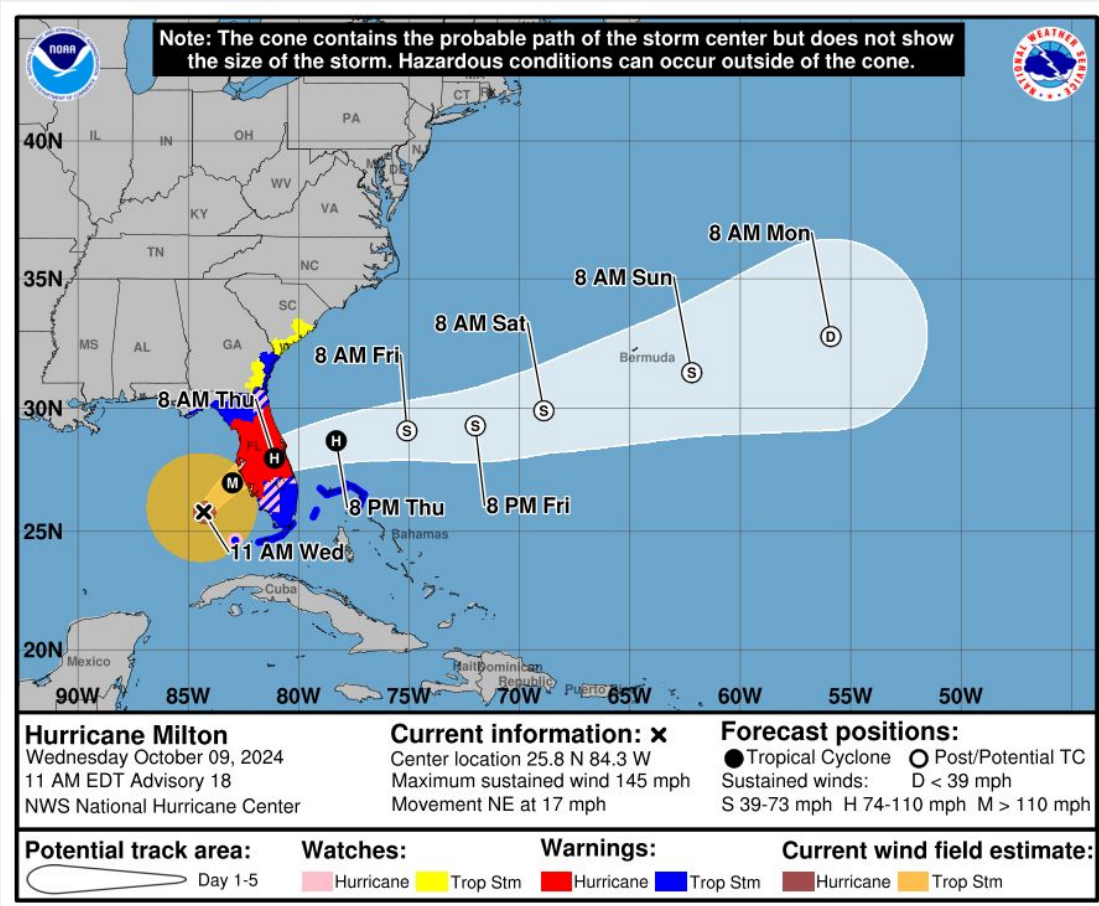
- Hurricane Warning continues for the entire area. Cat 3 (125 mph) forecast at landfall, with the expanding wind field still expected.
- Storm Surge Warning continues for Pinellas and Hillsborough County:
  - 8-12 ft AGL
  - Negative Surge can occur north of the landfall location, but the average forecast error at this time is 25 miles.
- Flood Watch out for the entire area through Thursday evening. Rainfall amounts of 6 to 12 inches, with localized totals up to 18 inches. Many rivers forecast to go into moderate to major flood stage with a few possibly reaching record levels.
- Impacts are already beginning across the area. Several tornado warnings have already been issued with a few confirmed across south Florida. A tornado watch is now in effect for the Tampa area southward through 9 pm.



# Situation Overview

## Hurricane Milton

EXERCISE



- Hurricane Milton is a Cat 4 with max winds of 145 MPH. Forecast to be a Cat 3 (125 mph) at landfall with an expanding wind field.
- Fairly steady track from previous forecast cycle. Average error is 25 miles at this time range.

**NOTE:** Do not focus on the exact track.  
Impacts can occur well outside the area enclosed by the cone.



# Current Watches and Warnings

EXERCISE

## Hurricane Milton

### Hurricane Warning

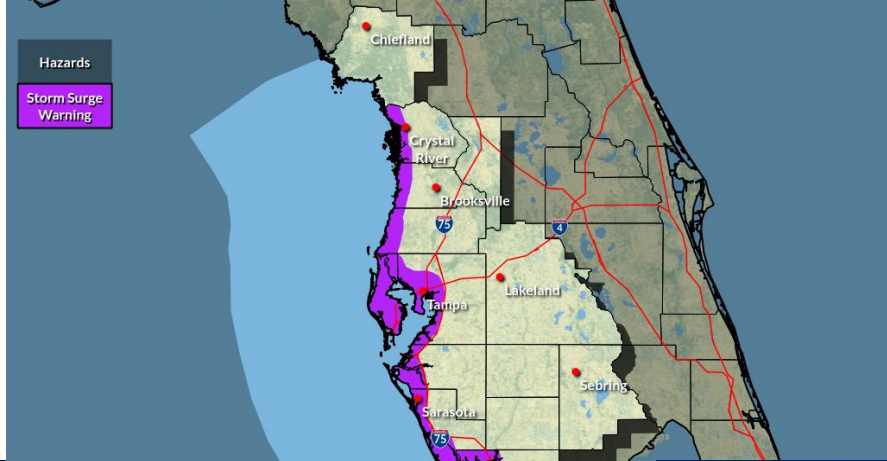
Hurricane Milton

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 07, 2024 6:16 PM EDT



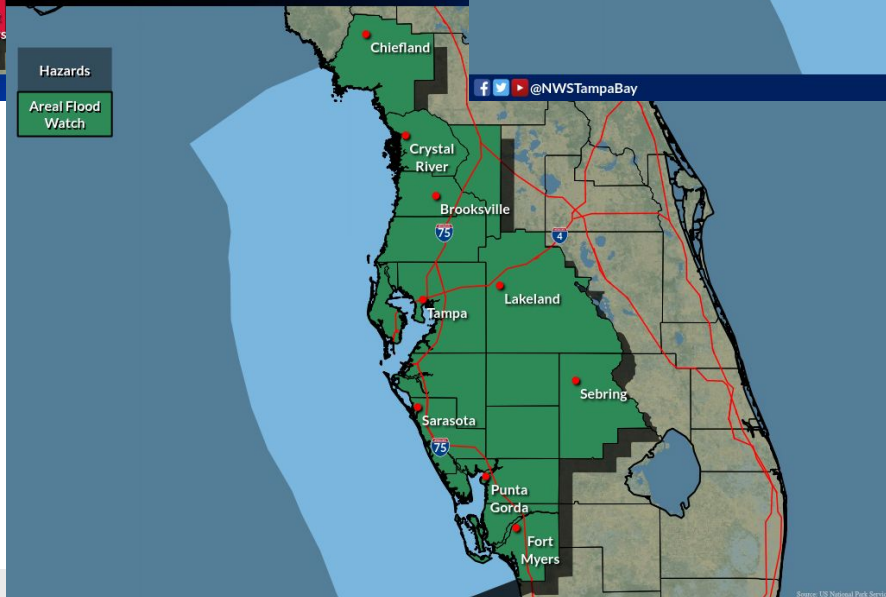
### Storm Surge Warning

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 09, 2024 5:12 AM EDT



### Flood Watch

Hazards  
Areal Flood Watch



### Tornado Watch

Through 9 PM Wednesday

Hazards  
Tornado Watch



Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 09, 2024 12:13 PM EDT



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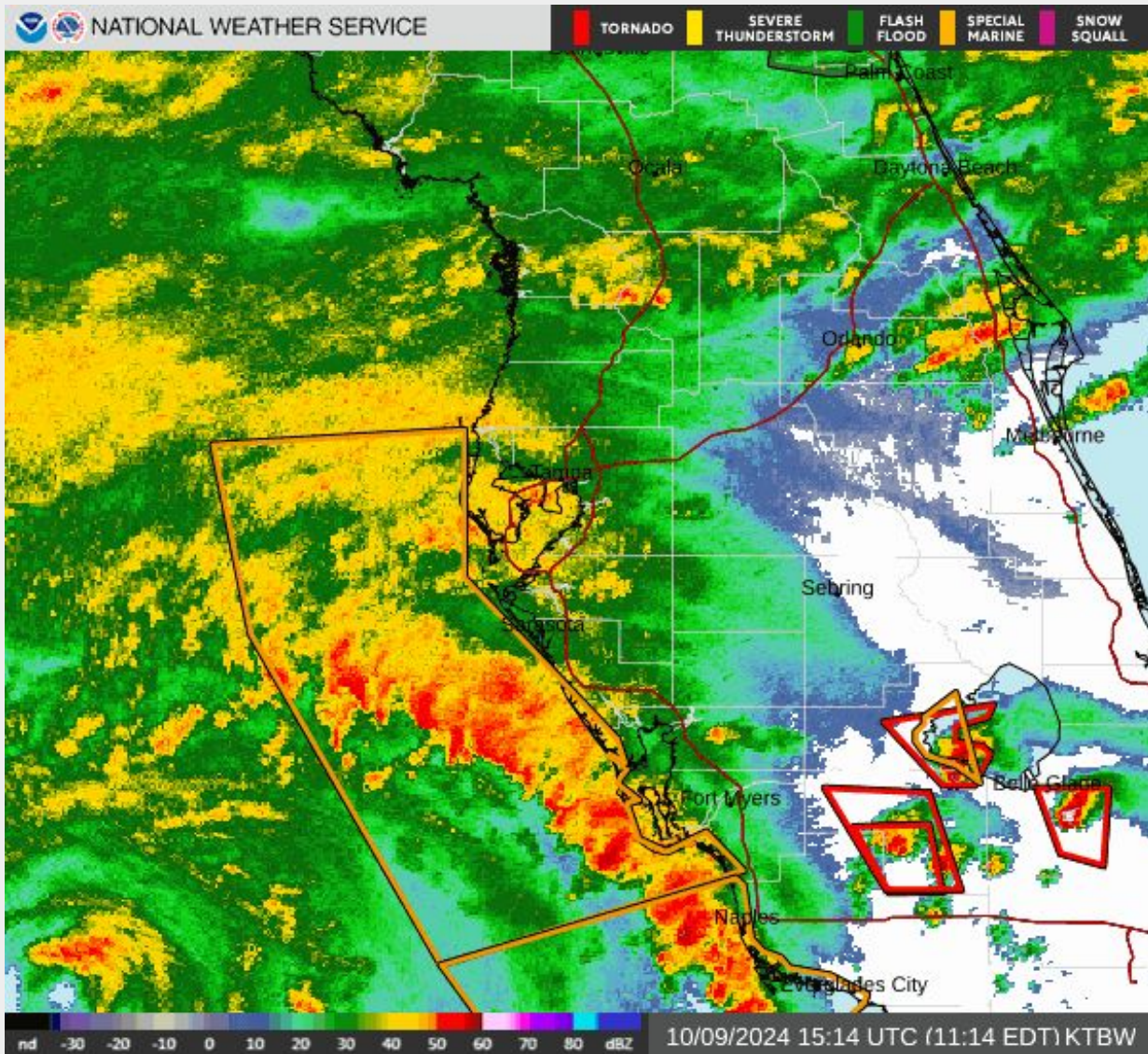
weather.gov/tampabay



# Current Radar View

Hurricane Milton

EXERCISE



- The eye is now visible on the TBW radar.
- Several rotating cells with the outer rainband along the coast have prompted numerous warnings.
- Polk County is the main threat area with this band.



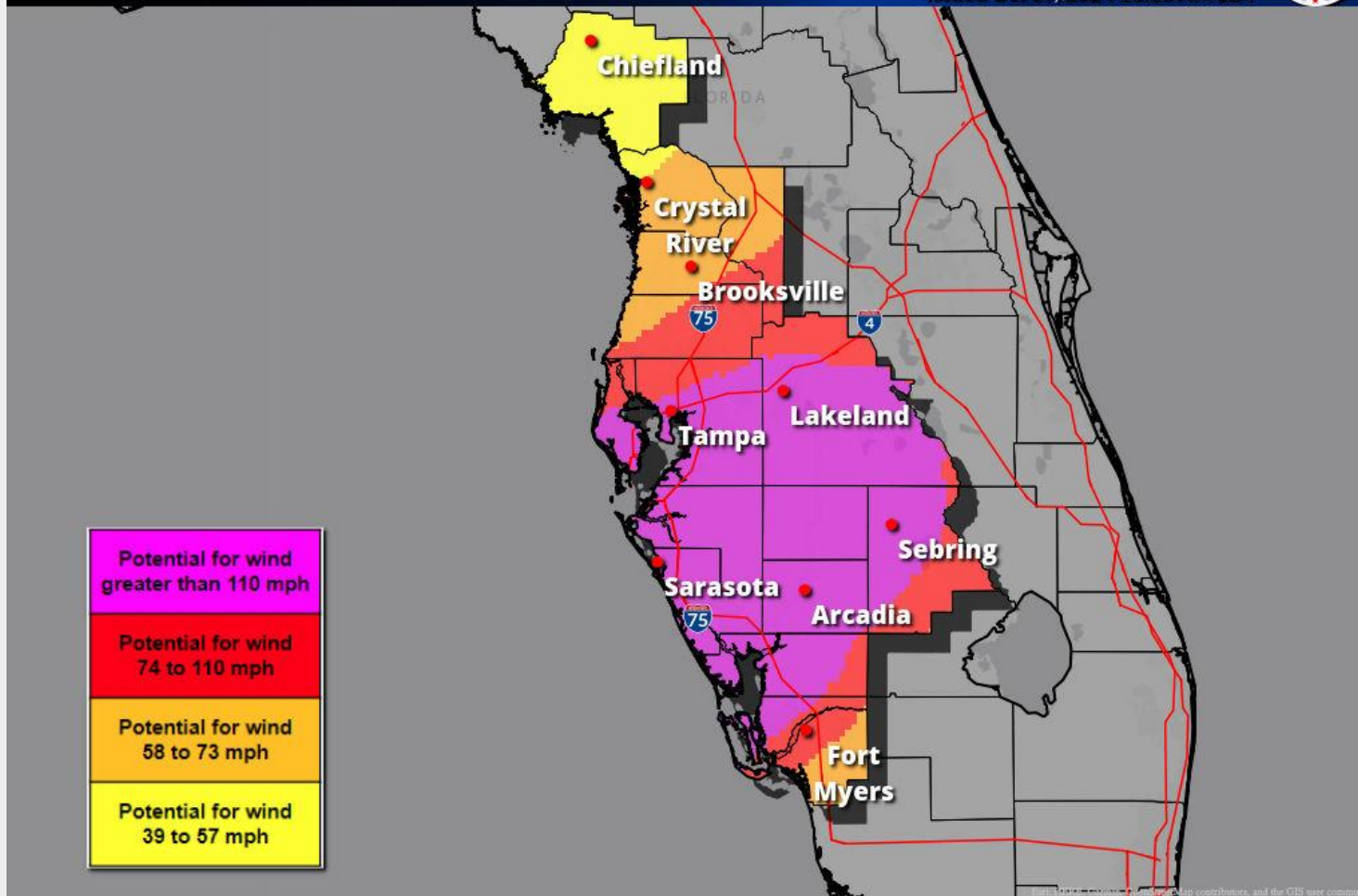
# Wind Threat / Potential Impact

Hurricane Milton

EXERCISE

## Wind Threat

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 09, 2024 11:13 AM EDT



@NWS Tampa Bay

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There is a potential for:

- Cat 3 or higher winds along the coast around Tampa Bay and south.
- Hurricane force winds will extend well inland where the center of the storm tracks. Higher chances have shifted south with the track.
- Potential for EWW issuance later this evening as eyewall moves onshore.



# Extreme Wind Warning Reminder

Hurricane Milton

EXERCISE

## EXAMPLE

### Extreme Wind Warning

Valid Until  
2:00 PM EDT Wednesday  
September 28, 2022

**Threat Information**

**Hazard**  
Extremely dangerous hurricane winds

**Action To Take**  
Move to an interior room NOW!

**Potential Exposure**

Population: 46,825  
Schools: 5  
Hospitals: 1

### Criteria:

- Extreme hurricane winds are imminent or happening now.
- Sustained winds of 115mph (Cat 3) or greater are expected.
- In effect for up to 3 hours and will not be reissued for the same areas.

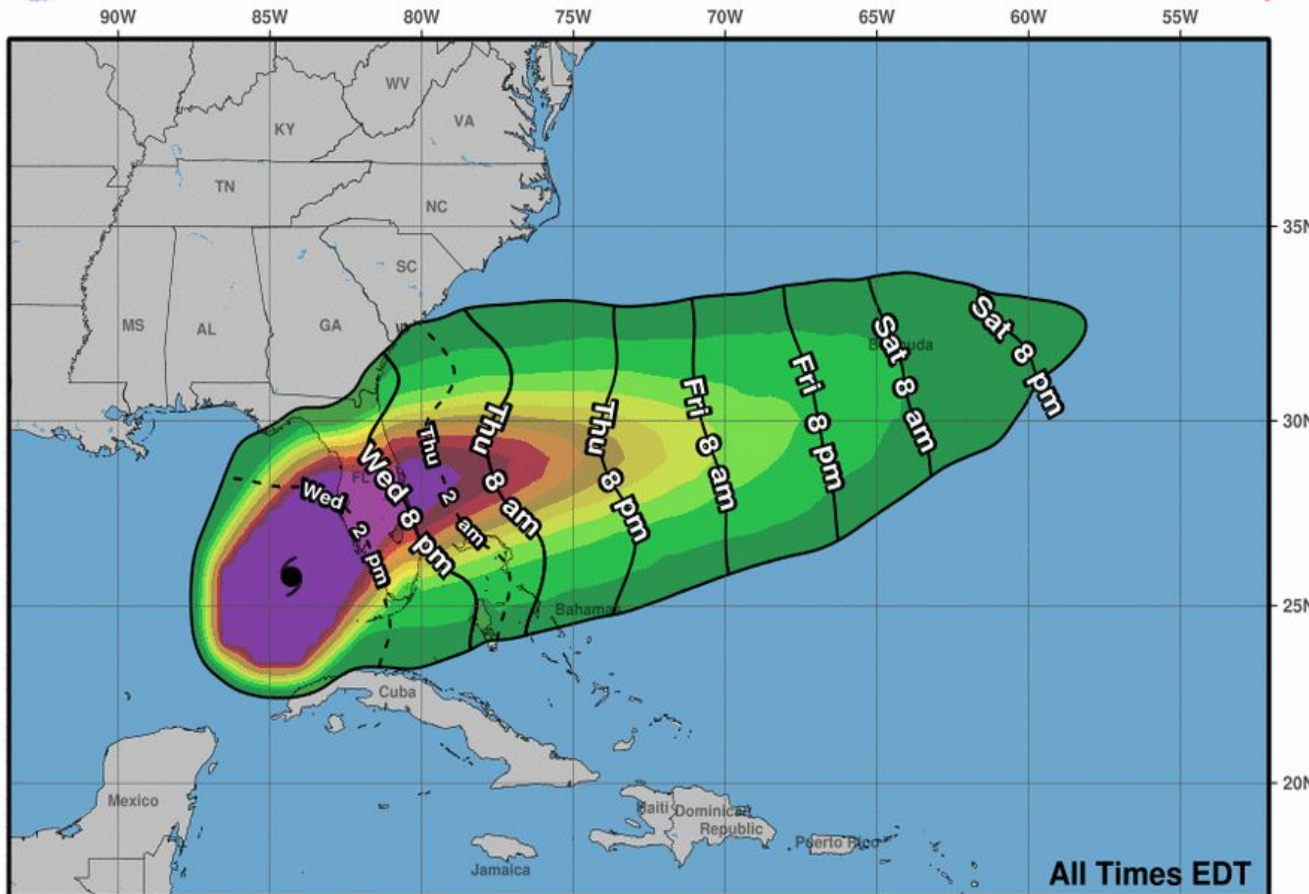


# Time of Arrival and Departure of TS Winds

Hurricane Milton

**EXERCISE**

**Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds**



**Hurricane Milton**  
 Wed. Oct. 9, 2024 11 am EDT  
 Advisory 18

Storm Location ○ < 34 kt (39 mph)  
 & ○ 34-63 kt (39-73 mph)  
 Wind Speed ● ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds  
 5 10 20 30 40 50 60 70 80 90 100 %

All Times EDT

## Arrival Timing

County	Chance	Earliest Arrival Time	Most Likely Arrival Time
Pinellas	100%	Past	Now
Hillsborough	100%	2 pm Wed	3 pm Wed
Polk	100%	3 pm Wed	4 pm Wed

## Departure Timing

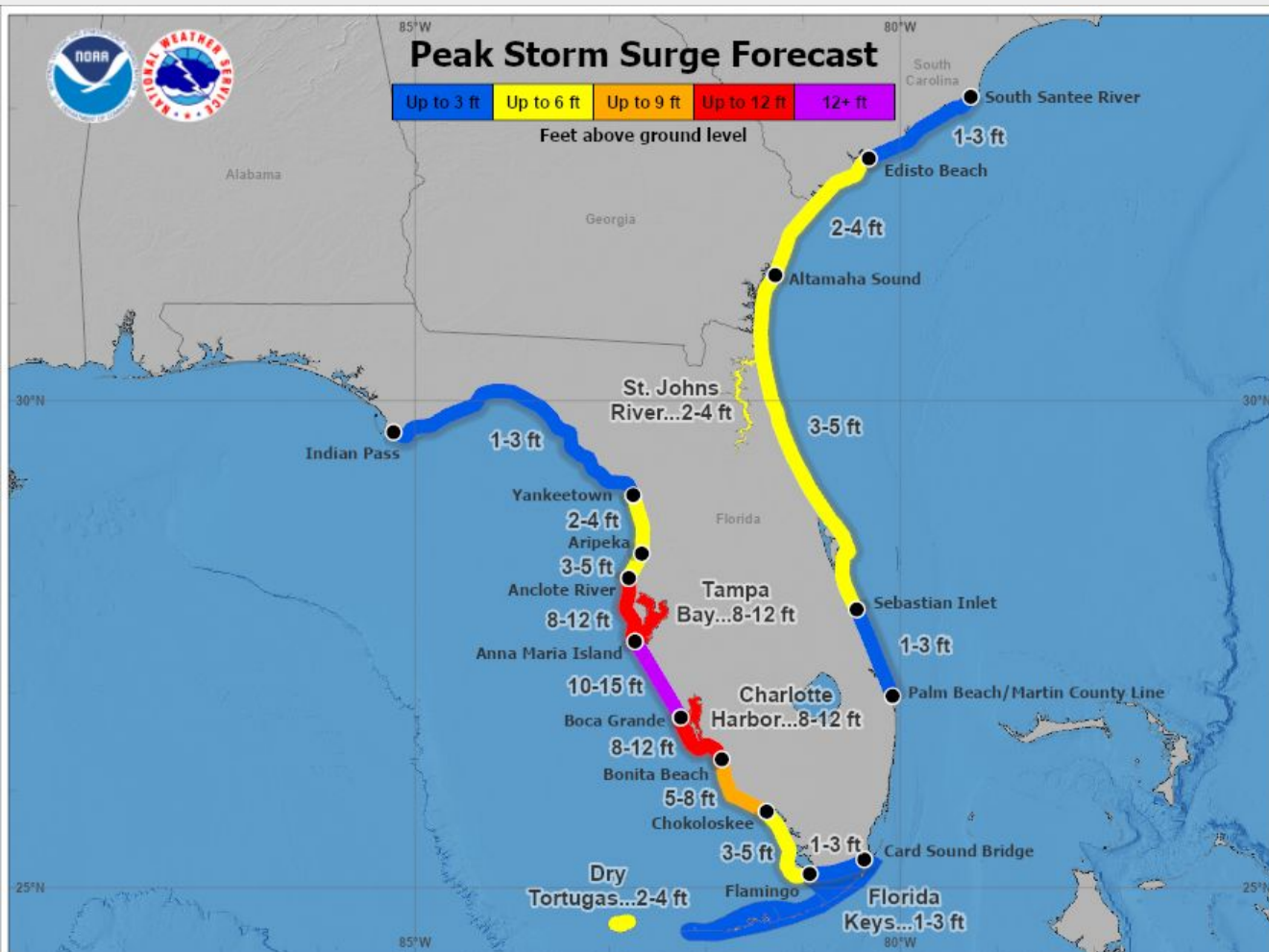
County	Most Likely Departure Time	Latest Departure Time
Pinellas	4 am Thu	7 am Thu
Hillsborough	5 am Thu	8 am Thu
Polk	6 am Thu	9 am Thu



# Peak Storm Surge

Hurricane Milton

EXERCISE



Life-threatening storm surge forecast:

- 8-12 ft AGL for Hillsborough, Pinellas

Negative Surge can occur north of the landfall location, but the average forecast error at this time is 25 miles and is why values have not lowered as much around Tampa Bay.

**Hurricane Milton**  
 Wednesday October 09, 2024  
 11 AM EDT Advisory 18  
 NWS National Hurricane Center

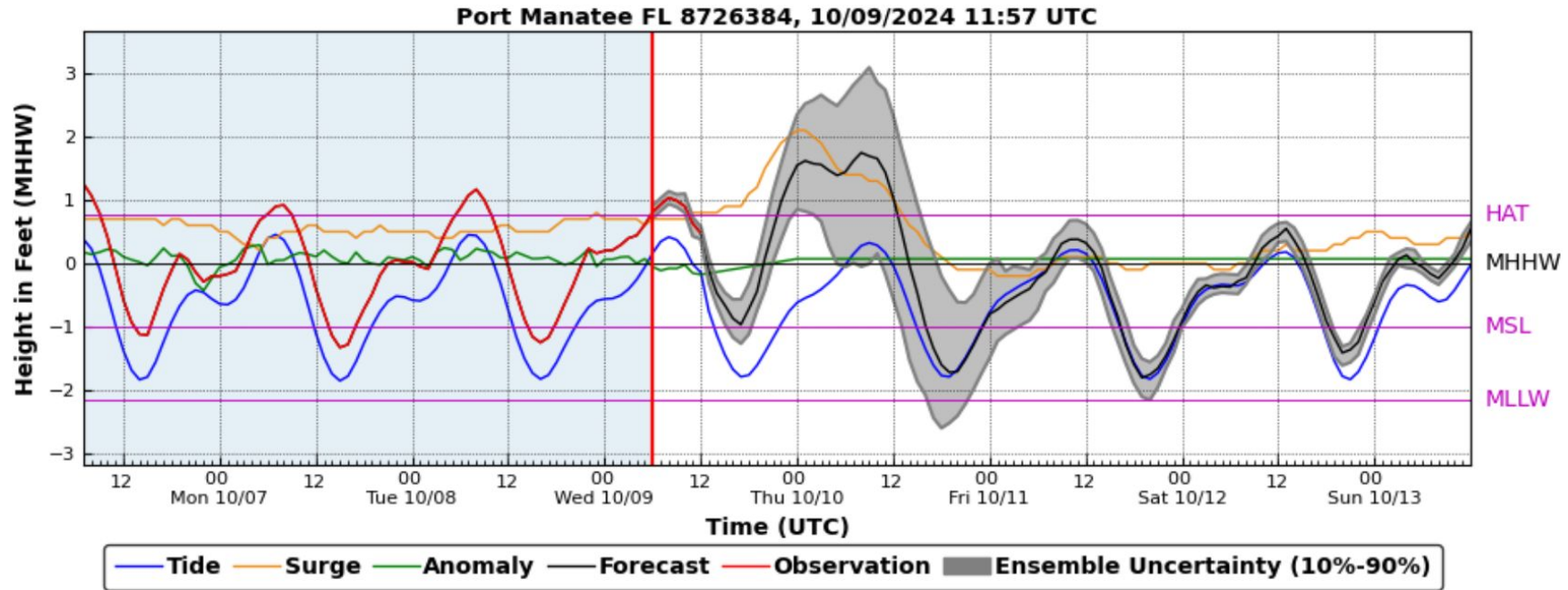
**User Notes:** Water levels along the immediate coast could reach the following heights above ground level within the indicated areas. Elevated water levels will likely be accompanied by large and destructive waves. Colors are determined by the highest values in the associated forecast peak surge range. Values shown on this graphic are inclusive of tide.



# Peak Storm Surge Timing

Hurricane Milton

EXERCISE



Water levels starting to increase now, peaks late this evening into overnight, with residual increased water levels through midday Thursday.

NOTE: P-ETSS Model Guidance only used for timing of surge - NOT levels. 12 UTC = 8 am, 00 UTC = 8 pm



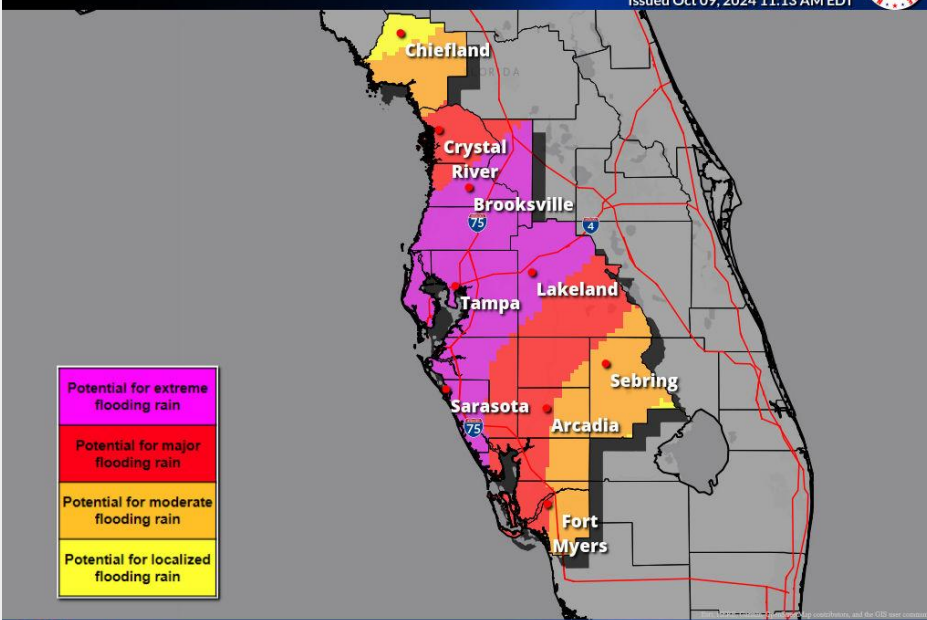
# Inland Flooding Impacts

Hurricane Milton

EXERCISE

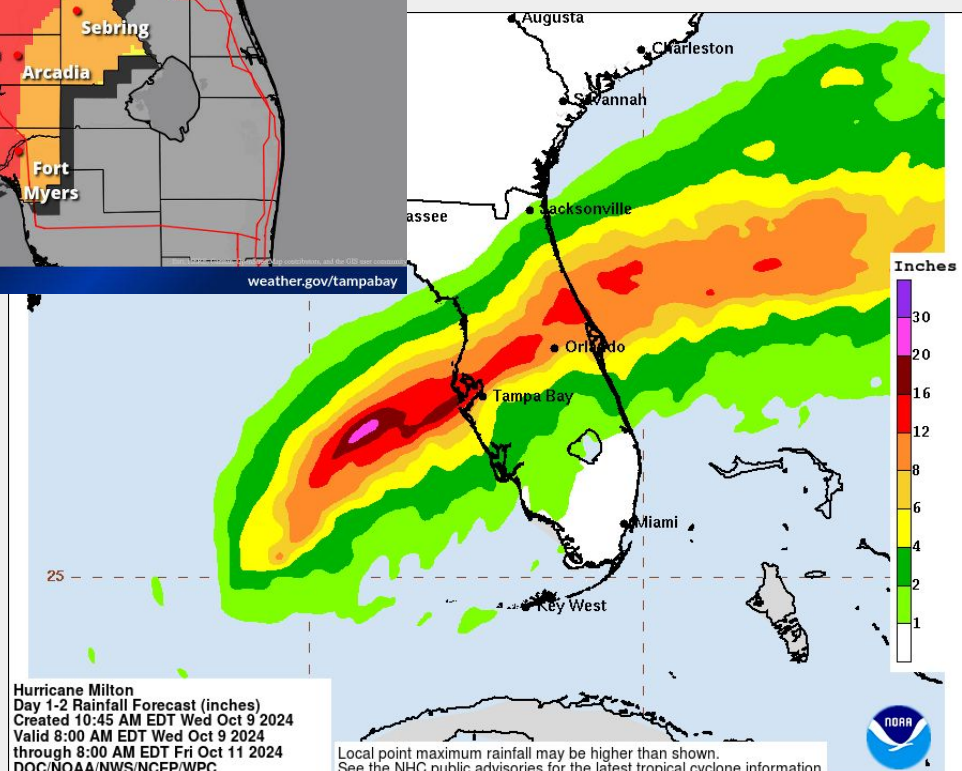
## Flooding Rain Threat

Weather Forecast Office  
Tampa Bay/Ruskin, FL  
Issued Oct 09, 2024 11:13 AM EDT



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Hurricane Milton  
Day 1-2 Rainfall Forecast (inches)  
Created 10:45 AM EDT Wed Oct 9 2024  
Valid 8:00 AM EDT Wed Oct 9 2024  
through 8:00 AM EDT Fri Oct 11 2024  
DOC/NOAA/NWS/NCEP/WPC



- Flood Watch out for the entire area through Thursday evening. Rainfall amounts of 6 to 12 inches, with localized totals up to 18 inches.
- Many rivers forecast to go into moderate to major flood stage, with some historic crests possible.

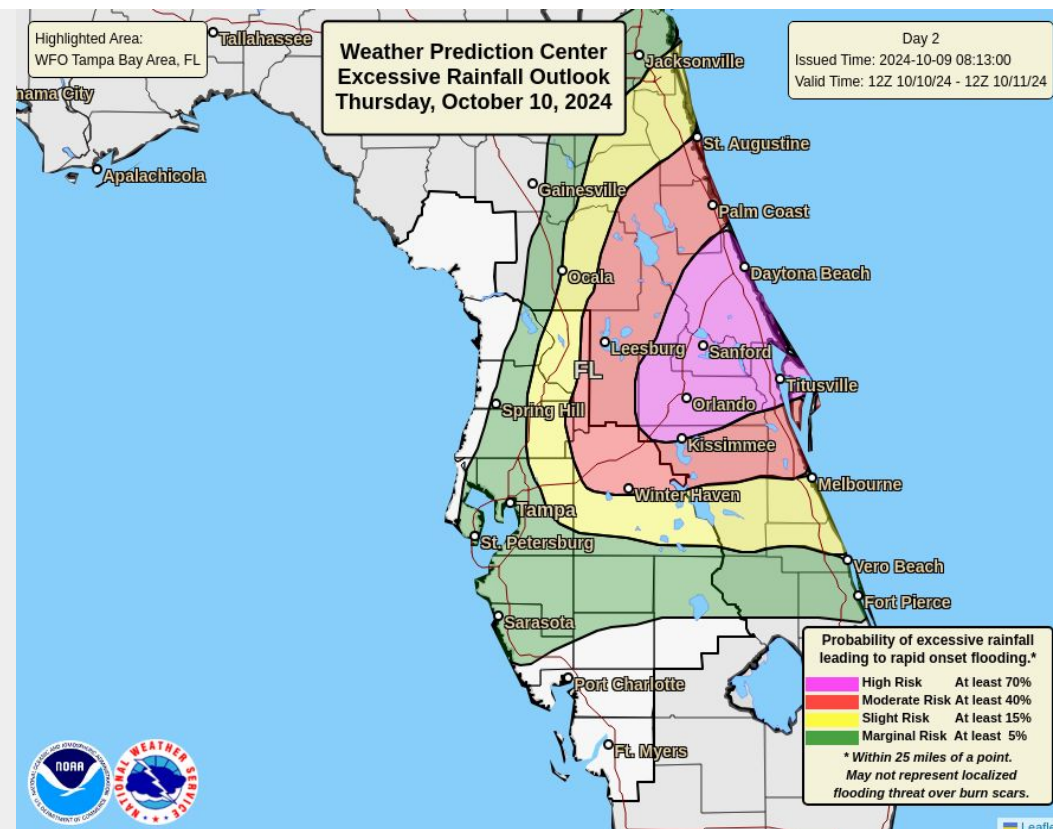
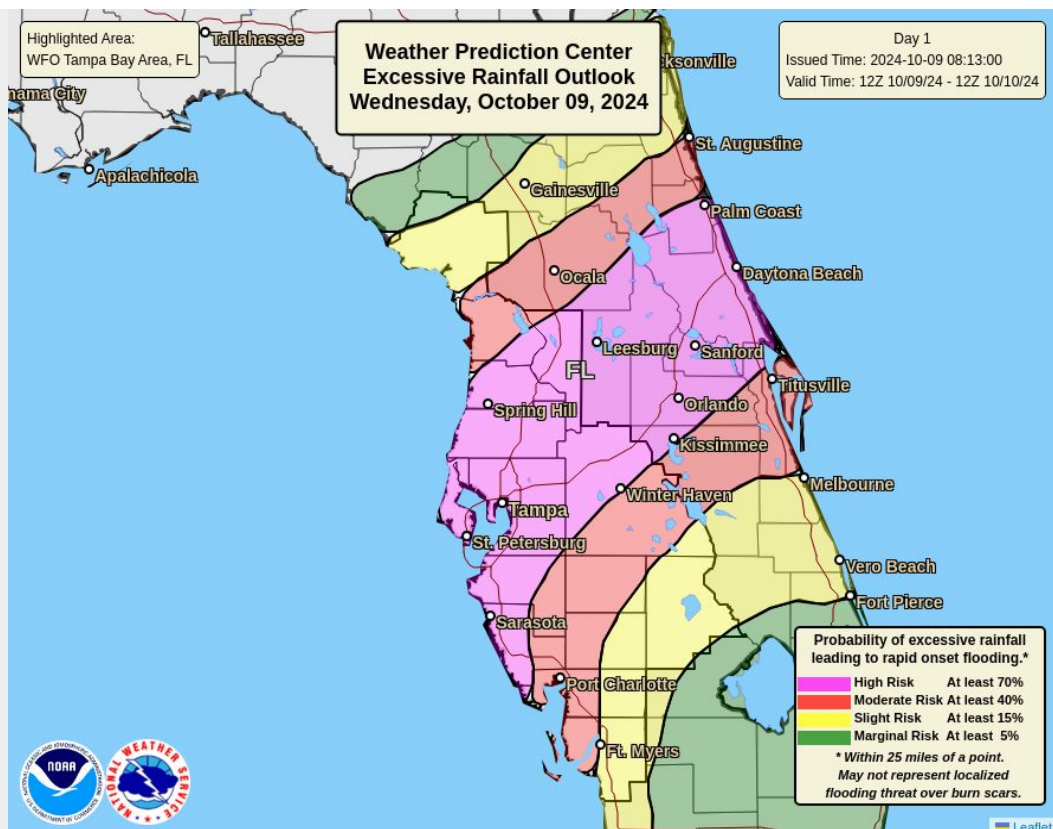


# Excessive Rainfall Outlook

Hurricane Milton

EXERCISE

- Heavy rainfall forecast tonight through Thursday. Highest risk for Flash Flooding will be along and north of the track.



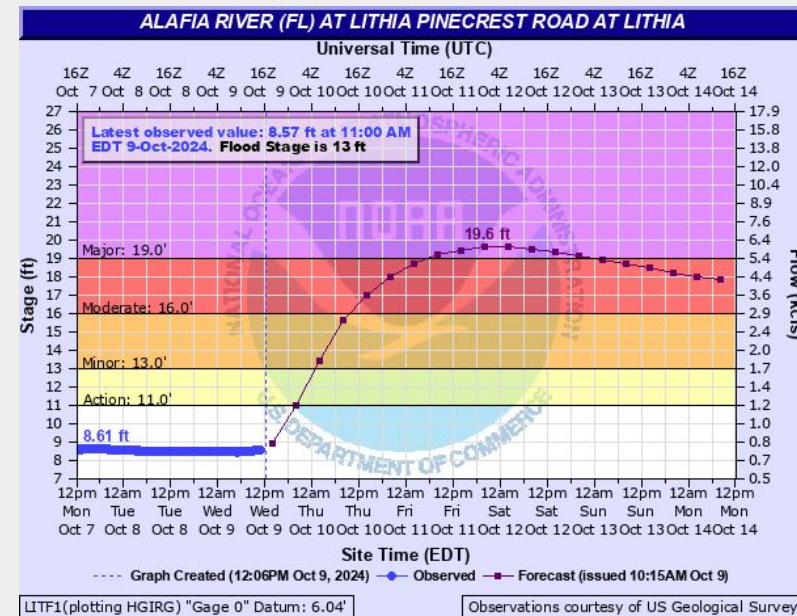
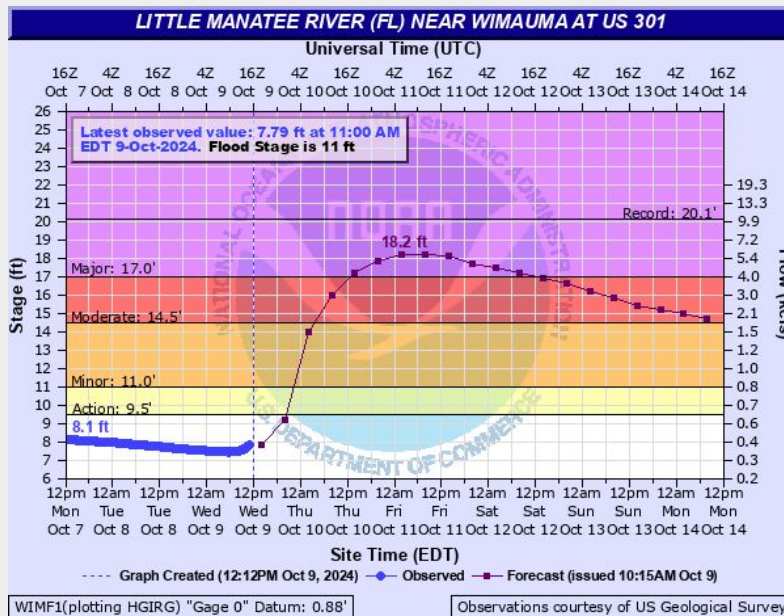
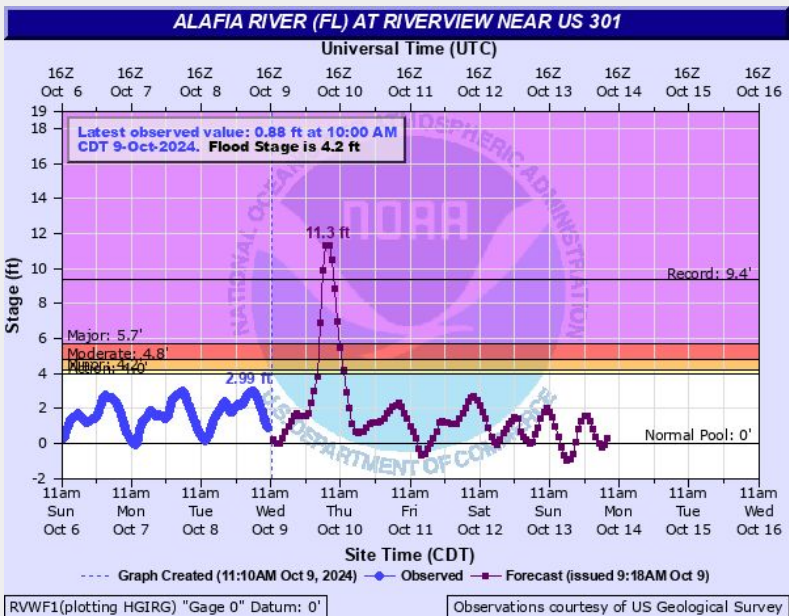


# Expected River Flooding

Hurricane Milton

EXERCISE

- Many rivers forecast to go into moderate to major flood stage. Some rivers may see historic crests. These forecasts include the forecast rainfall from Milton.

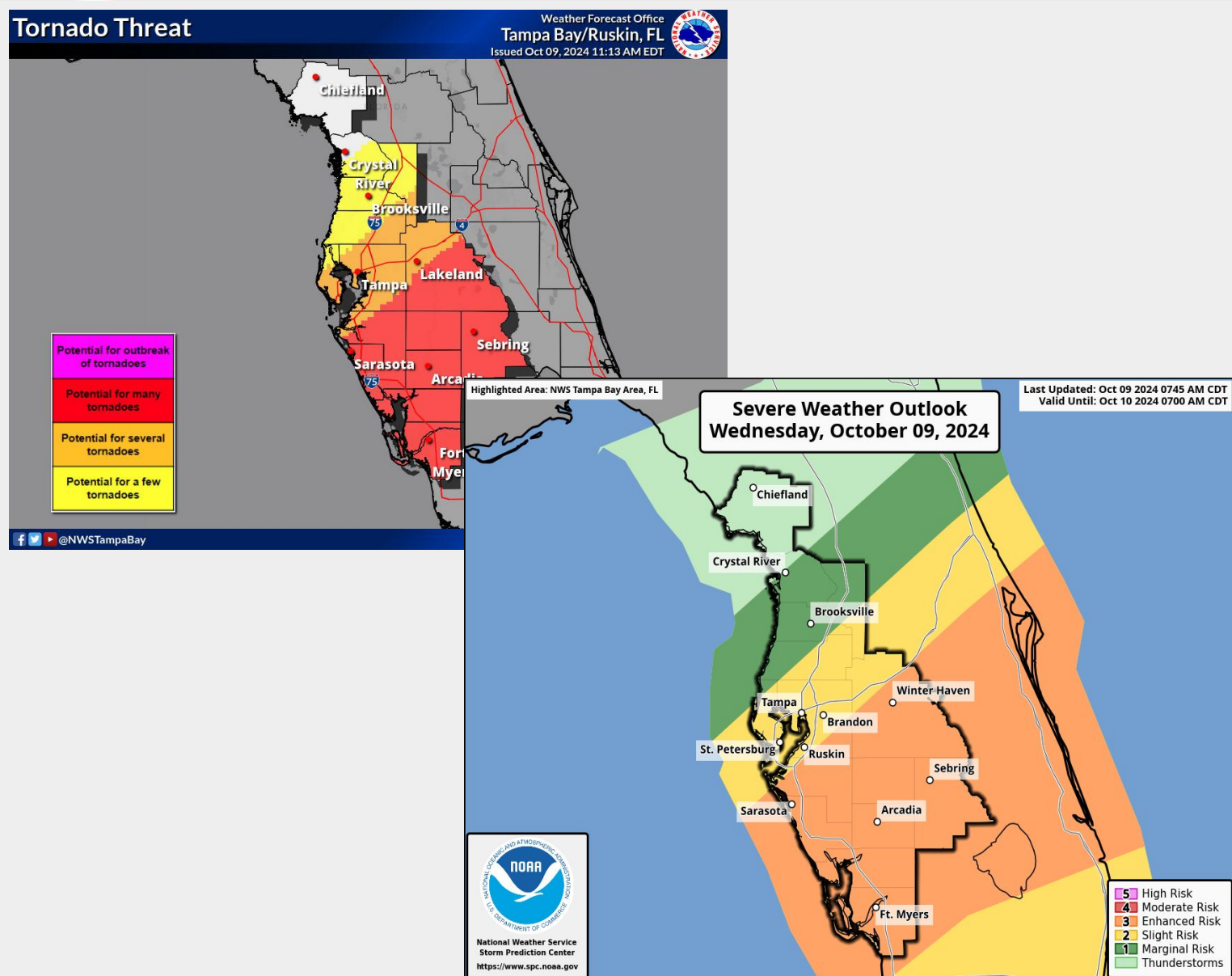




# Potential Tornado Impacts

Hurricane Milton

EXERCISE



- The threat for many tornadoes exist through Thursday morning. Best chances mainly for Polk County.
- Already seeing numerous rotating storms.



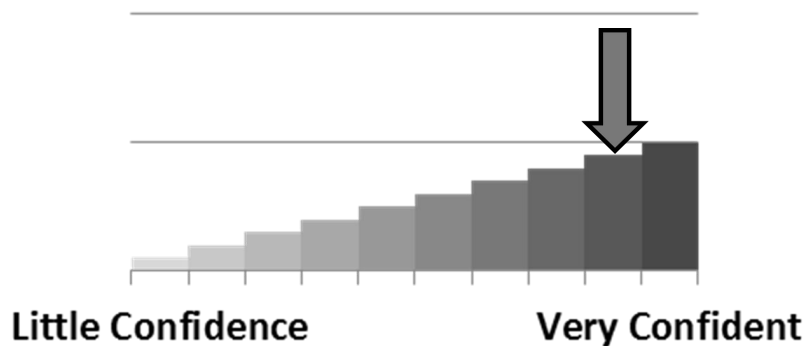
# Key Take-Aways

Hurricane Milton

**EXERCISE**

- Hurricane and Storm Surge Warnings, and a Tornado and Flood Watch are in effect. Life threatening storm surge is forecast with the system, with the highest values near and just to the south of the right eyewall.
- Negative Surge can occur north of the landfall location, but the average forecast error at this time is 25 miles and this is why values have not lowered as much around Tampa Bay.
- The confidence is increasing on the track of the system, but there will still be shifts with wobbles.

## Forecast Confidence



**Confidence is increasing that landfall will take place somewhere in the Tampa Bay region south to Sarasota as a Category 3 storm.**



## Q & A

Why is the average forecast error being emphasized at this stage?

- A. Low forecast confidence.
- B. So “all-clear” messaging can begin earlier as the track shifts south.
- C. Small track shifts can cause dramatic changes in realized impacts for areas.
- D. Because the Indian Burial Mounds will protect the area.

# Q & A



With the tornado threat to Polk County, how can the POD virtual deployment be of benefit?

- A. Can remain on the line real time during storms to relay information on both ends.
- B. With video sharing capability, can better pinpoint potential areas of concern.
- C. Faster response to potentially impacted areas.
- D. All of the above.**

# Hotwash

What went well?

What could have been done better?

What was missing from the briefings?

Share one takeaway -





# Decision Support Services

Join us after lunch!

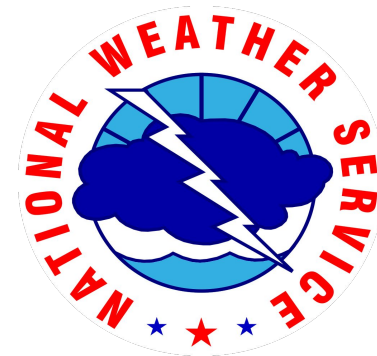
Interactive exercise with  
National Hurricane Center &  
NWS Florida meteorologists!

Angie Enyedi – NWS Jacksonville [angela.enyedi@noaa.gov](mailto:angela.enyedi@noaa.gov)

Morgan Barry – NWS Mobile [morgan.barry@noaa.gov](mailto:morgan.barry@noaa.gov)

Robert Garcia – NWS Miami [robert.garcia@noaa.gov](mailto:robert.garcia@noaa.gov)

Jennifer Hubbard – NWS Tampa Bay [jennifer.hubbard@noaa.gov](mailto:jennifer.hubbard@noaa.gov)



Training Session 17