What's New in HURREVAC

Updates for the 2023 Season

National Hurricane Conference
April 5, 2023

FEMA
NATIONAL HURRICANE PROGRAM

HURREVAC
HURRICANE DECISION SUPPORT TOOL

Today's Topics

1. National Hurricane Program Update
2. HURREVAC Overview
3. 2023 HURREVAC Updates
4. Panel Discussion
5. Audience Discussion

NATIONAL HURRICANE PROGRAM

Today's Presenters and Panelists

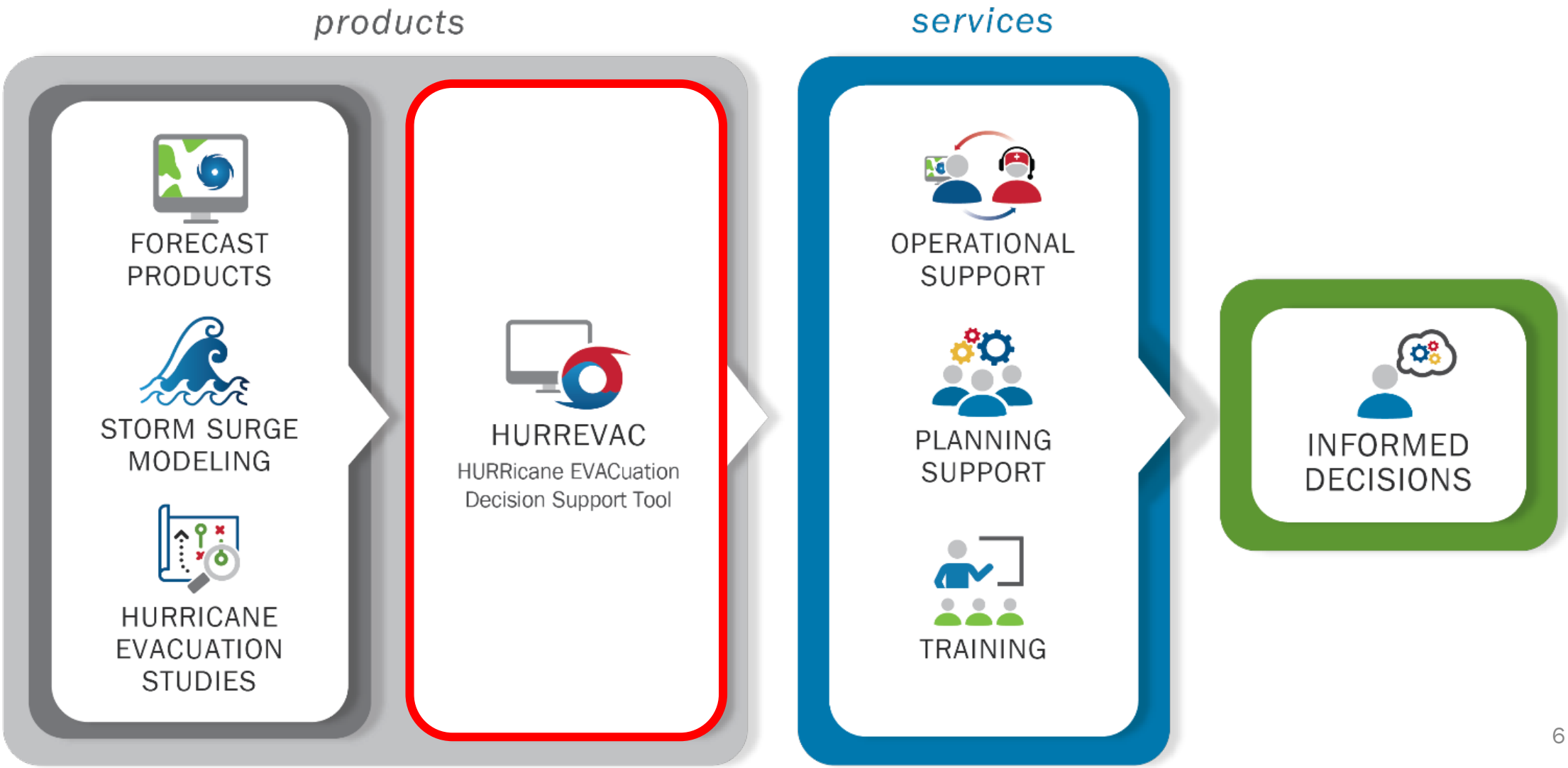
Zane Heather	NHP, FEMA HQ	**Michael Spagnolo**	HLT, FEMA
Marco Ciarla	NHP, USACE	**Dan Brown**	NHC
Tom Laczo	NHP, USACE	**John Boyer**	Sea Island Software
Leah Blackwood	SCEMD		

NATIONAL HURRICANE PROGRAM

National Hurricane Program Update

NHP Program Partners

National Hurricane Program



2022 SNAPSHOT – ANNUAL ACCOMPLISHMENTS

HURREVAC

HURREVAC TRAINING
451 Participants | **14** Sessions

24,800+ Registered Users

4,000+ New Users

4,900+ Concurrent Users during Hurricane Ian

890+ Simulated Storms

HURREVAC WEBINAR SERIES
5 Days | **2,090+** Participants

YOUTUBE ACTIVITY
9 New Videos | **84+** Subscribers

2,000+ Video Views

HURREVAC UPDATES & NEW FUNCTIONALITY
- Logo & Button Icon Replacements
- SLOSH Explorer Revised
- Track And Swath Options Updated
- Reports Enhancements
- Self-Guided Training Modules 390+ Completed
- In-App User Guide

TRAINING

HURRICANE READINESS COURSES
416 Participants

L0311: HURRICANE READINESS FOR COASTAL COMMUNITIES
158 Participants

L0310: HURRICANE READINESS FOR INLAND COMMUNITIES
PILOT DELIVERY
36 Participants

HURRICANE SEASON OPERATIONAL SUPPORT

ATLANTIC BASIN

72 days HLT AT LEVEL 3 OR HIGHER

26 weekly TAG-UPS

14 NAMED STORMS *Average 14*

8 HURRICANES *Average 7*

2 MAJOR HURRICANES *Average 3*

CENTRAL PACIFIC	**1** Named Storms	**0** Hurricanes	**0** Major Hurricanes	**0** HLT Activations
WEST PACIFIC	**25** Tropical Cyclones	**3** Tropical Storm Threats	**0** Typhoon Threats	**20 days** HLT Support
SOUTH PACIFIC	Ongoing	No Direct Tropical Storm Threats to American Samoa		

HURRICANE EVACUATION STUDIES

NEW JERSEY
Transportation Analysis

ALABAMA MISSISSIPPI
Behavioral and Shelter Analyses

GEORGIA
Hazard Analysis

HAWAII
Hazard Analysis

HES MODERNIZATION
PILOT STUDY
Using Cell Phone Data To Understand Population Movement

STAKEHOLDER AUDIT
20 Participants

STORM SURGE RISK PRODUCTS

CHARLESTON
Superbasin

NATIONAL MAXIMUM OF MAXIMUMS
Version 3
New regions: S. California, Guam, American Samoa

STORM SURGE HINDCAST
Hurricane Ian: Florida and Southeast landfalls
Hurricane Nicole

STAKEHOLDER ENGAGEMENT

INTERAGENCY COORDINATING COMMITTEE ON HURRICANES (ICCOH) ANNUAL MEETING
MARCH
168 Virtual Participants
22 States and Territories Represented
VIRTUAL-360 MEETING ROOM **937** Views

FEDERAL PROGRAM PARTNER MEETINGS
IN-PERSON
PRE-SEASON MEETING **35** Participants
END OF YEAR MEETING **33** Participants

RESOURCES
4 FEMA Weekly Articles 1,219 Views
3 FEMA Bulletin Articles 1,833 Views

NEW **4** NHP Newsletters 1,150 Views

NEW **2** FEMA Before During and After Podcast Episodes

NATIONAL HURRICANE CONFERENCE
APRIL
- Provided 4 Trainings
- Hosted 2 Workshop Sessions
- Received Outstanding Achievement Award
- Displayed NHP Booth in Exhibit Hall

FLORIDA GOVERNOR'S HURRICANE CONFERENCE
MAY
- Provided 3 Trainings
- Hosted 1 Workshop Session

HURRICANE AWARENESS TOUR
MAY
- Displayed NHP Booth in Exhibit Hall
- At 2 Locations: Region 2 JFK Airport, Region 3 DCA Airport

6 NEW INTERNAL FEMA ENGAGEMENTS
- Planner's Workshop
- National Integration Center (NIC)
- MCVCS Annual meeting
- FEMA Exercise and Evaluation Program
- Planning Cadre Monthly Call
- International Affairs Advisor Cadre

2023 PROGRAM PRIORITIES

Hurricane Evacuation Study Modernization

The program will review and improve the current HES methodology and outputs and create a more useful range of products that support our stakeholders in making informed hurricane evacuation and response decisions.

Enhance Stakeholder Engagement

Beyond NHP-specific coordination and events, the NHP has created a strategic communications plan to proactively identify and create opportunities to better understand and support our partners and ensure a unified message and voice throughout program activities.

Training Curriculum Strategy

Through collaborative partner coordination and the development of a training curriculum strategy, the NHP is ensuring that we continue to meet the needs of our stakeholders and support the development of new and improved training capabilities in the emergency management workforce.

Strategic Program Planning

To chart the vision of the future of the NHP, the program will assess strengths, weaknesses, opportunities, and threats, establish baseline program governance, and develop a unified innovative vision of the future that aligns with agency goals.

NATIONAL HURRICANE PROGRAM

HURREVAC Overview

What is HURREVAC?

HURREVAC is the NHP's **hurricane evacuation decision support tool** that is free to use for emergency managers.

Real-time forecasts + info from Hurricane Evacuation Studies

= informed evacuation timing decisions

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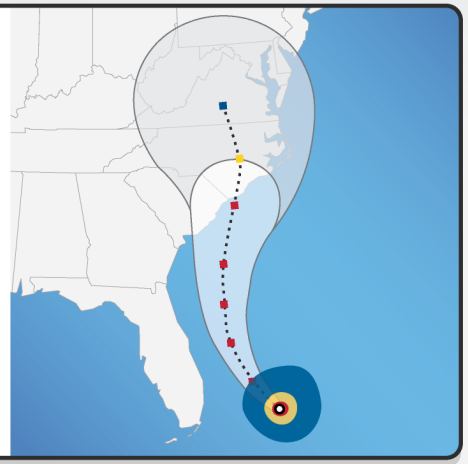
How is Evacuation Start Time Calculated?

HAZARDS

Storm Forecast



Arrival Time of
Tropical-Storm-Force Winds

PLANNING SCENARIOS

HES Data
(Hurricane Evacuation Study)
Pre-Determined
Evacuation Zones
and Scenarios

Clearance Time
Scenario

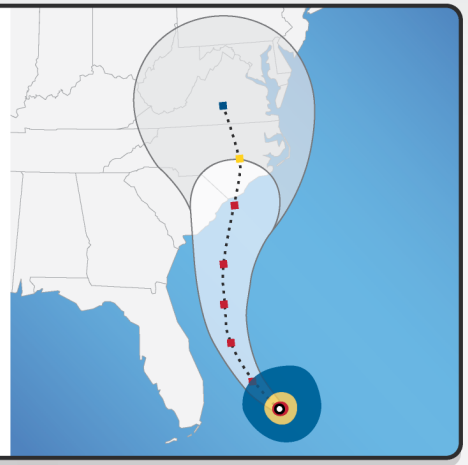
EVACUATION

Evacuation
Start Time

How is Evacuation Start Time Calculated?

HAZARDS

Storm Forecast



Arrival Time of
Tropical-Storm-Force Winds

8pm Saturday

–

PLANNING SCENARIOS

HES Data
(Hurricane Evacuation Study)
Pre-Determined
Evacuation Zones
and Scenarios

CATEGORY 3

Clearance Time
Scenario

36 Hours

=

EVACUATION

Evacuation
Start Time

8am Friday

Record User Engagement in ’22 and ’23

- **25,000** registered users…and counting!
  ~4,000 added in 2022
- **~5,000** record simultaneous users during Hurricane Ian
  compared to ~1,500 peak usage during Ida in 2021
- **6,180** 5-day attendance for 2022’s live webinar series
  participation grew by 25% from 2021
- **813** hours of watch time on YouTube channel in 2022
  usage grew by 10% from 2021
- **1,000** simulated storms created…and counting!

NATIONAL HURRICANE PROGRAM

https://www.hurrevac.com

HURREVAC

HOME

ANNOUNCEMENTS

APPLICATION INFORMATION

SUPPORT SERVICES

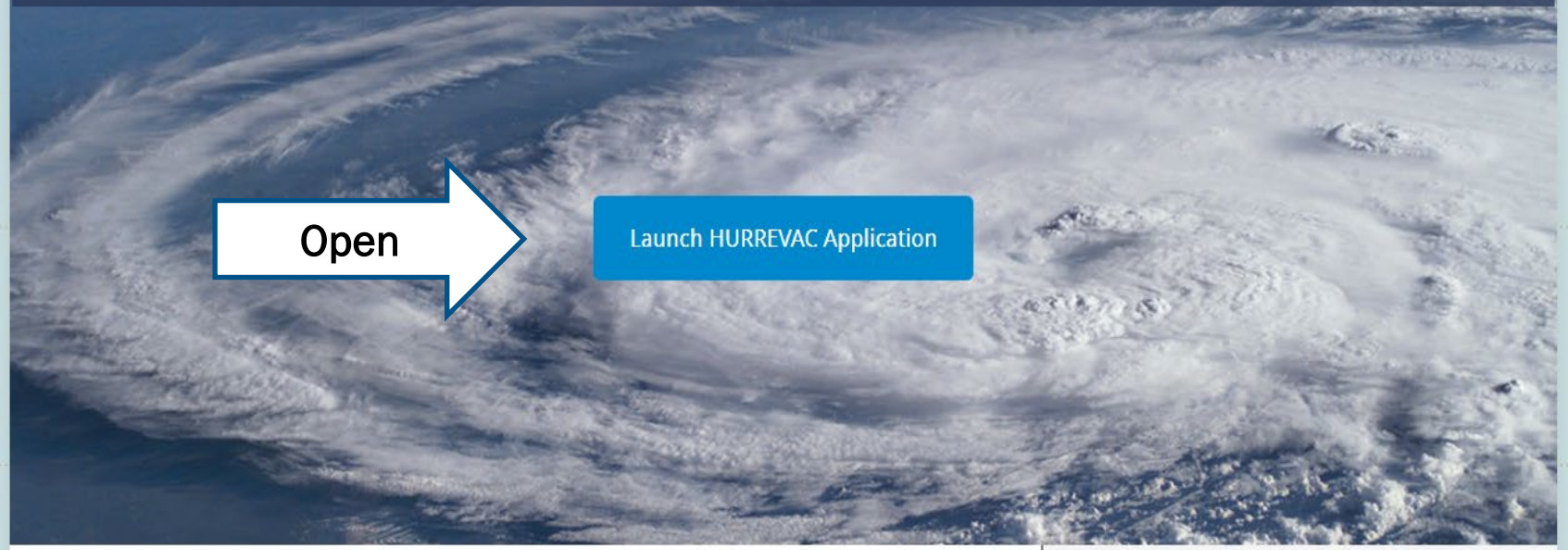
LEARNING RESOURCES

OUTSIDE LINKS

Training

Official HURREVAC program support site maintained by Sea Island Software, Inc., with funding from FEMA, the US Army Corps of Engineers, and NOAA

A HURRICANE DECISION SUPPORT TOOL FOR GOVERNMENT EMERGENCY MANAGERS.


Open
Launch HURREVAC Application

ABOUT HURREVAC

RREVAC is the decision support tool of the National Hurricane Program, administered by FEMA, the USACE, the NOAA National Hurricane Center.

This web site provides program access and technical support for eligible users in government emergency management. It is maintained by Sea Island Software, the contractor tasked with development, operation, and maintenance of the HURREVAC program.

GETTING STARTED WITH HURREVAC

Need more information or training on HURREVAC? Start with a program overview or training v... ps. If you don't yet have the software, please visit the registration page to apply for program access.

Register

RECENT UPDATES

REGISTER FOR THE 2023 HURREVAC WEBINAR SERIES

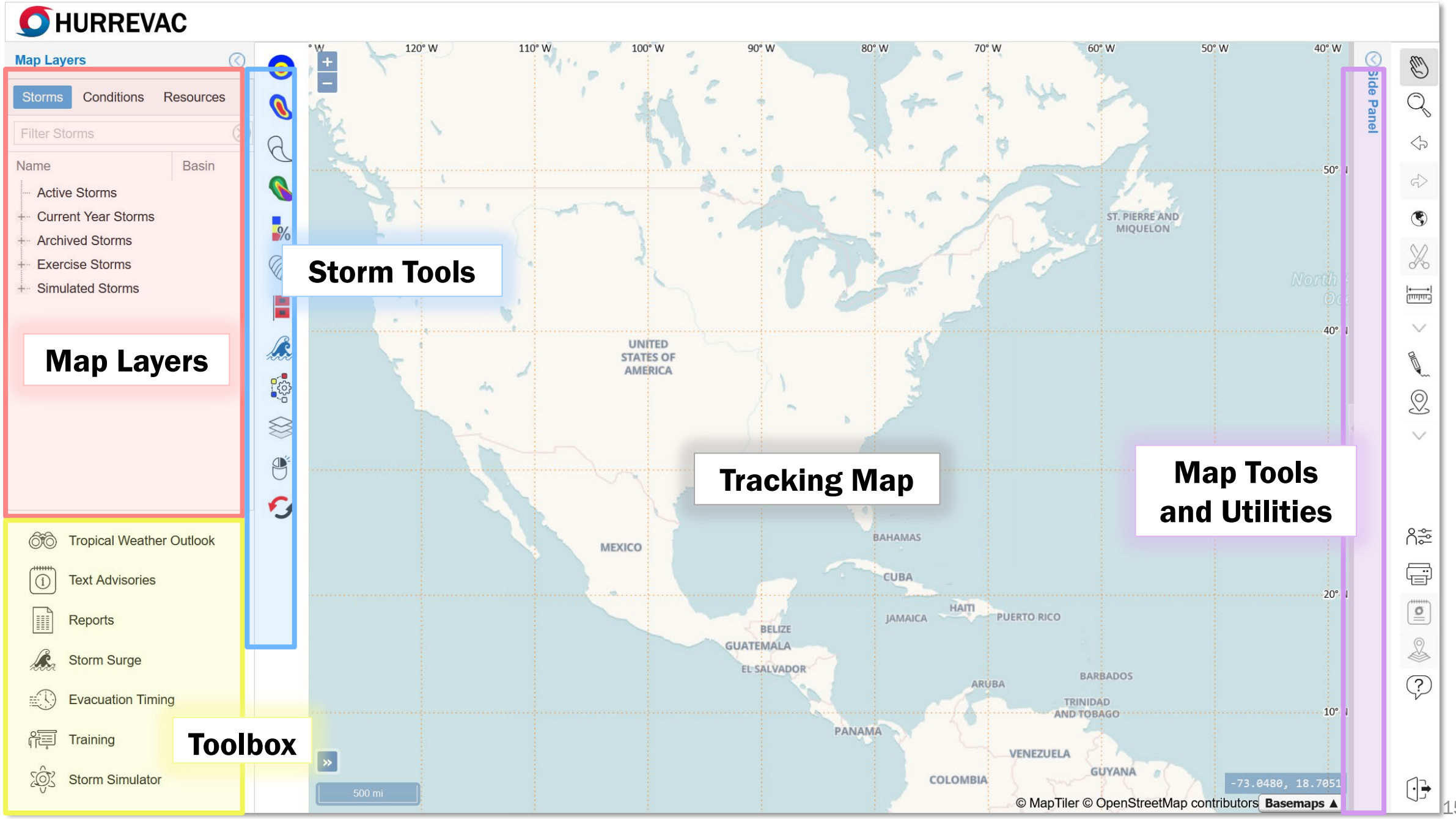
Posted by John Boyer On March 23, 2023

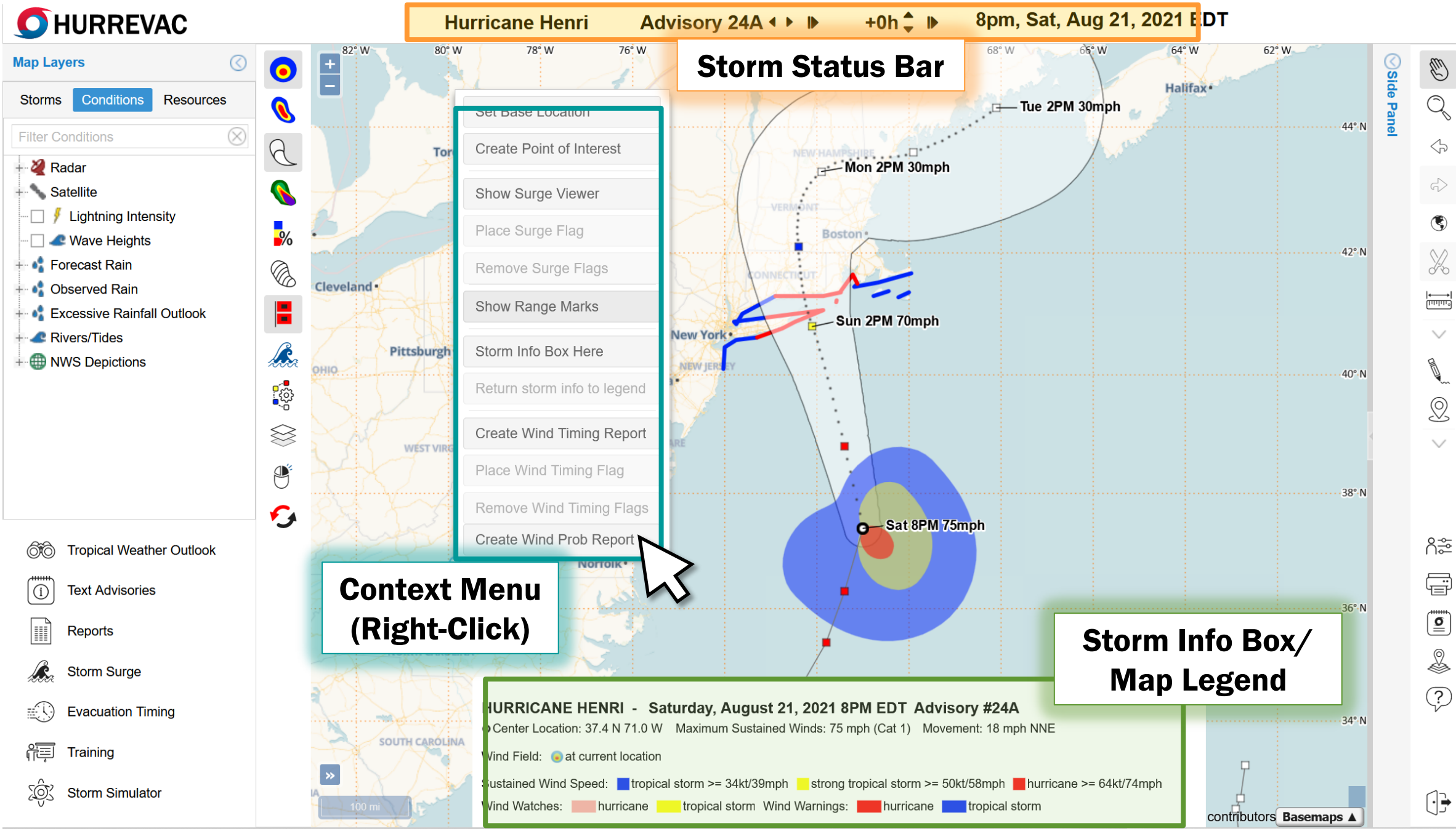
UPDATES TO REPORTS IN HURREVAC

Posted by John Boyer On March 3, 2023

NEW HURREVAC DISPLAY SETTINGS FOR 2023

Posted by John Boyer On January 18, 2023


HURREVAC
Map Layers
Storms
Conditions
Resources
Filter Storms
Name
Basin
Active Storms
Current Year Storms
Archived Storms
Exercise Storms
Simulated Storms
Map Layers
Storm Tools
Tracking Map
Map Tools and Utilities
Side Panel
Tropical Weather Outlook
Text Advisories
Reports
Storm Surge
Evacuation Timing
Training
Storm Simulator
Toolbox
120° W
110° W
100° W
90° W
80° W
70° W
60° W
50° W
40° W
50°
40°
20°
10°
UNITED STATES OF AMERICA
MEXICO
BAHAMAS
CUBA
HAITI
JAMAICA
PUERTO RICO
BELIZE
GUATEMALA
EL SALVADOR
ARUBA
BARBADOS
TRINIDAD AND TOBAGO
PANAMA
VENEZUELA
GUYANA
COLOMBIA
ST. PIERRE AND MIQUELON
500 mi
-73.0480, 18.7051
© MapTiler © OpenStreetMap contributors
Basemaps


HURREVAC
Hurricane Henri
Advisory 24A
+0h
8pm, Sat, Aug 21, 2021 EDT
Storm Status Bar
Map Layers
Storms
Conditions
Resources
Filter Conditions
Radar
Satellite
Lightning Intensity
Wave Heights
Forecast Rain
Observed Rain
Excessive Rainfall Outlook
Rivers/Tides
NWS Depictions
Tropical Weather Outlook
Text Advisories
Reports
Storm Surge
Evacuation Timing
Training
Storm Simulator
Set Base Location
Create Point of Interest
Show Surge Viewer
Place Surge Flag
Remove Surge Flags
Show Range Marks
Storm Info Box Here
Return storm info to legend
Create Wind Timing Report
Place Wind Timing Flag
Remove Wind Timing Flags
Create Wind Prob Report
Context Menu (Right-Click)
Tue 2PM 30mph
Mon 2PM 30mph
Sun 2PM 70mph
Sat 8PM 75mph
Halifax
Boston
New York
Cleveland
Pittsburgh
Norfolk
82° W
80° W
78° W
76° W
68° W
66° W
64° W
62° W
44° N
42° N
40° N
38° N
36° N
34° N
Side Panel
HURRICANE HENRI - Saturday, August 21, 2021 8PM EDT Advisory #24A
Center Location: 37.4 N 71.0 W Maximum Sustained Winds: 75 mph (Cat 1) Movement: 18 mph NNE
Wind Field: at current location
Sustained Wind Speed: tropical storm >= 34kt/39mph strong tropical storm >= 50kt/58mph hurricane >= 64kt/74mph
Wind Watches: hurricane tropical storm Wind Warnings: hurricane tropical storm
Storm Info Box/ Map Legend
100 mi
contributors
Basemaps

Poll Everywhere: What is Your Favorite Tool in HURREVAC?

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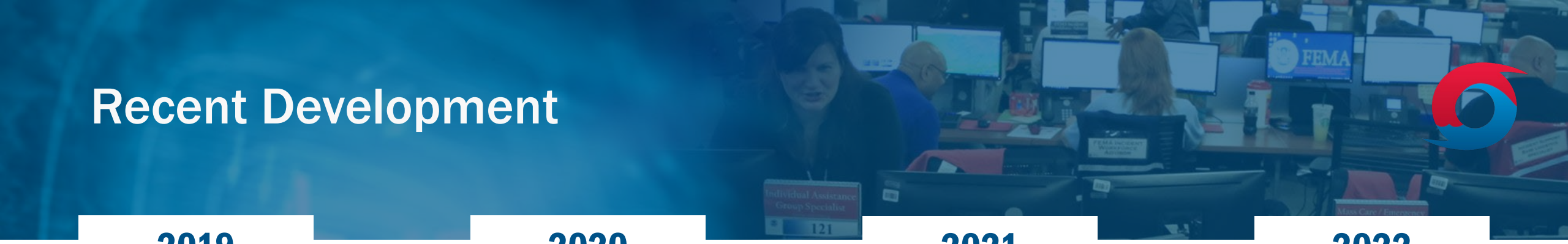
HURREVAC Developments



Recent Development

2019

- ✓ Transition to web-based HURREVAC
- ✓ High-resolution storm surge mapping
- ✓ Operational storm surge data
- ✓ Wind time of arrival graphics

2020

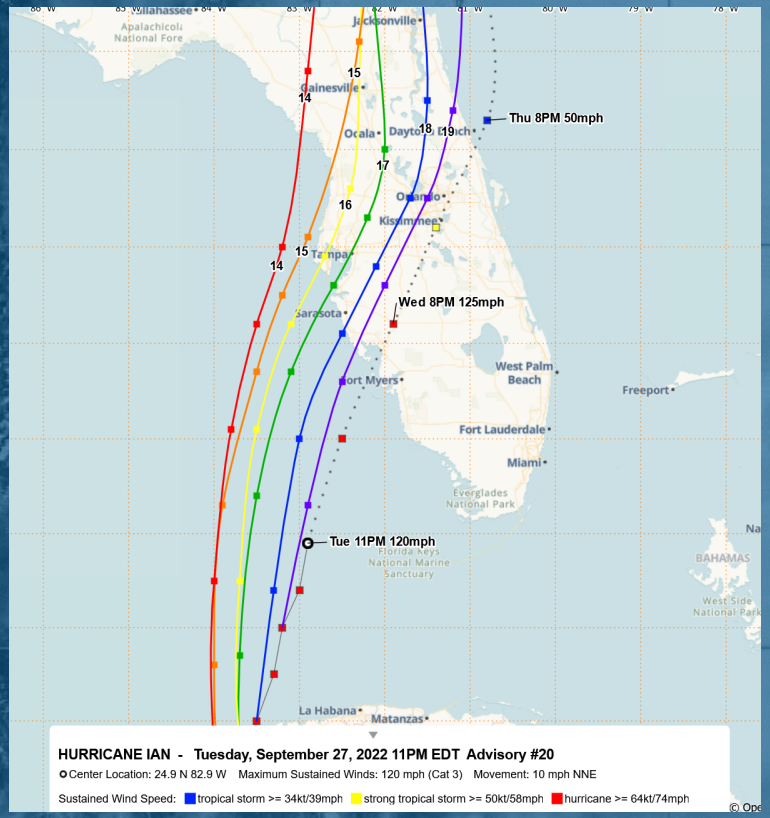
- ✓ Probabilistic timing data upgrade
- ✓ Improved HES integration
- ✓ Added timeline actions and timing arcs
- ✓ Updated support site
- ✓ YouTube channel launched

2021

- ✓ Storm Simulator launched
- ✓ New GIS and Excel export capabilities
- ✓ SLOSH Hindcasts added

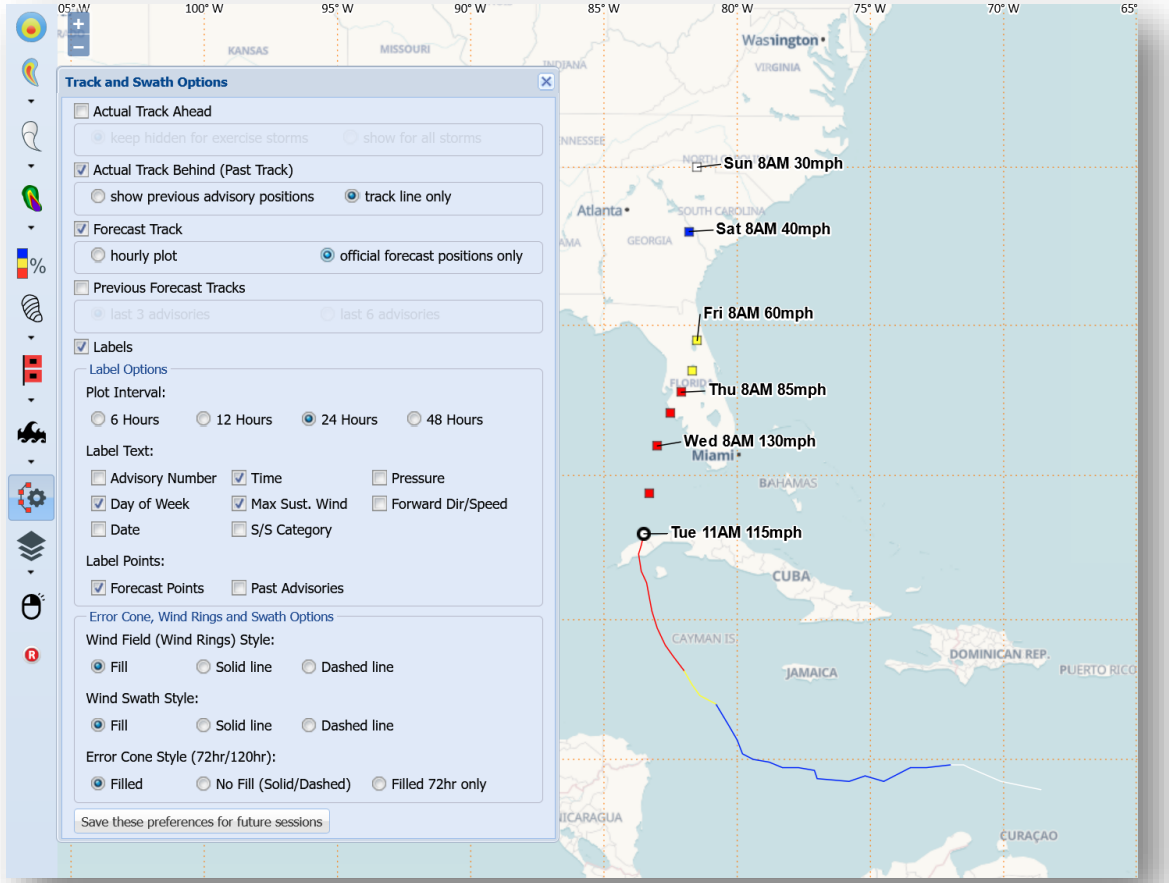
2022

- ✓ User Guide created
- ✓ Training modules reintroduced
- ✓ Updated SLOSH Explorer
- ✓ Report improvements
- ✓ New track display options



Track and Swath Options

- Deployed in August 2022
- Easier to see track trends, more display options



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What's New for 2023

2023 Developments

January

- ✓ Display modes
- ✓ New icons
- ✓ Latitude and longitude settings

February

- ✓ Report enhancements

Preseason (by June 1)

- ❑ Notifications
- ❑ Points of interest updates
- ❑ New NOAA products

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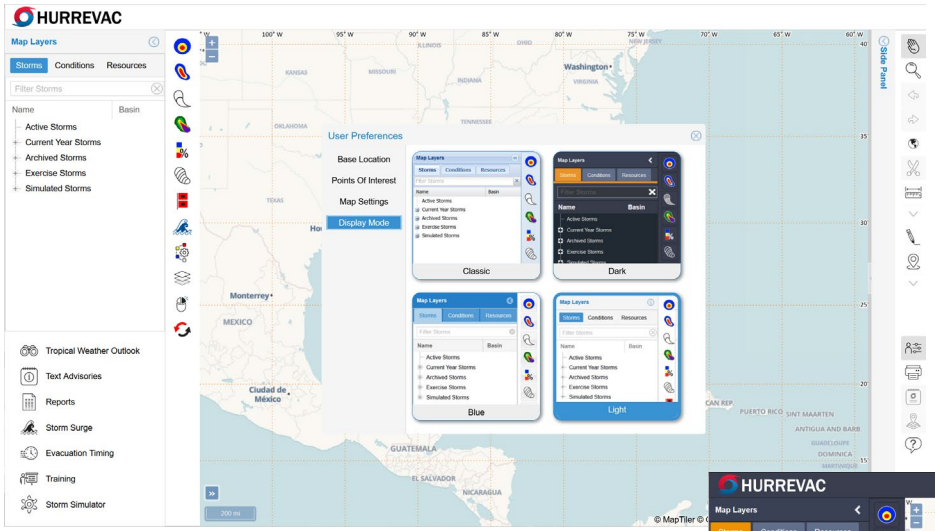
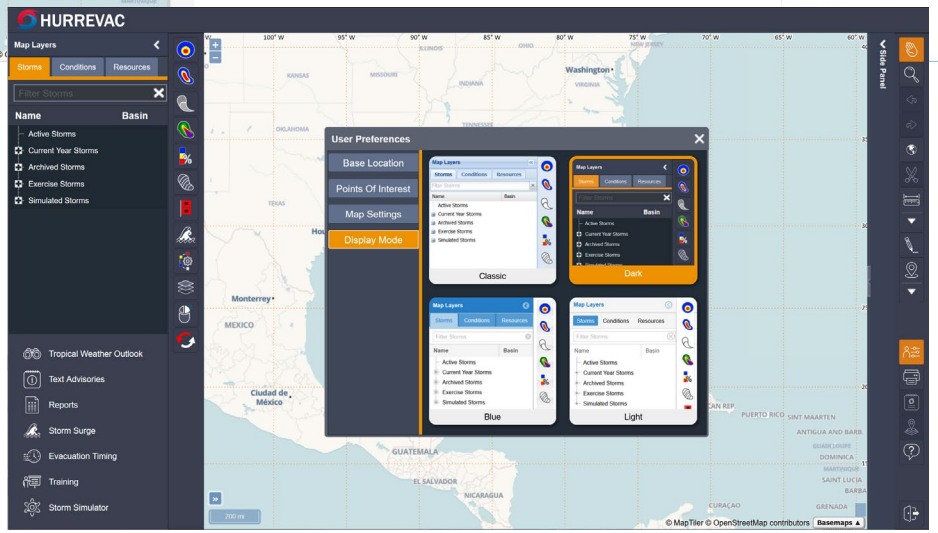
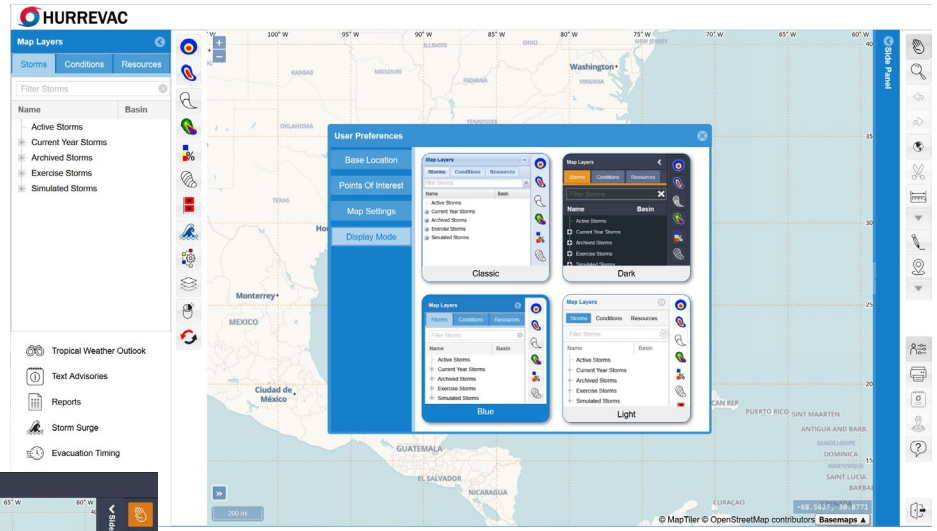
Display Mode



Light (new default)



Dark



Blue

*Classic still available

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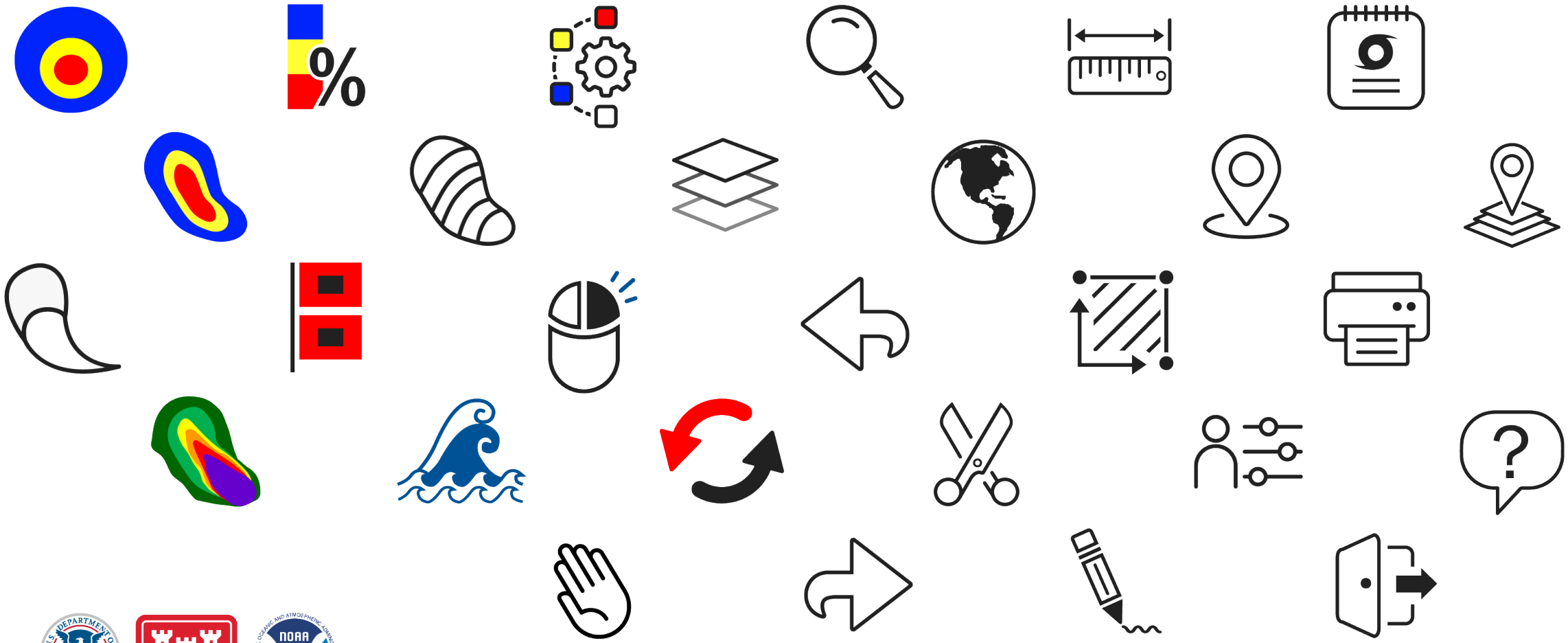
New Icons



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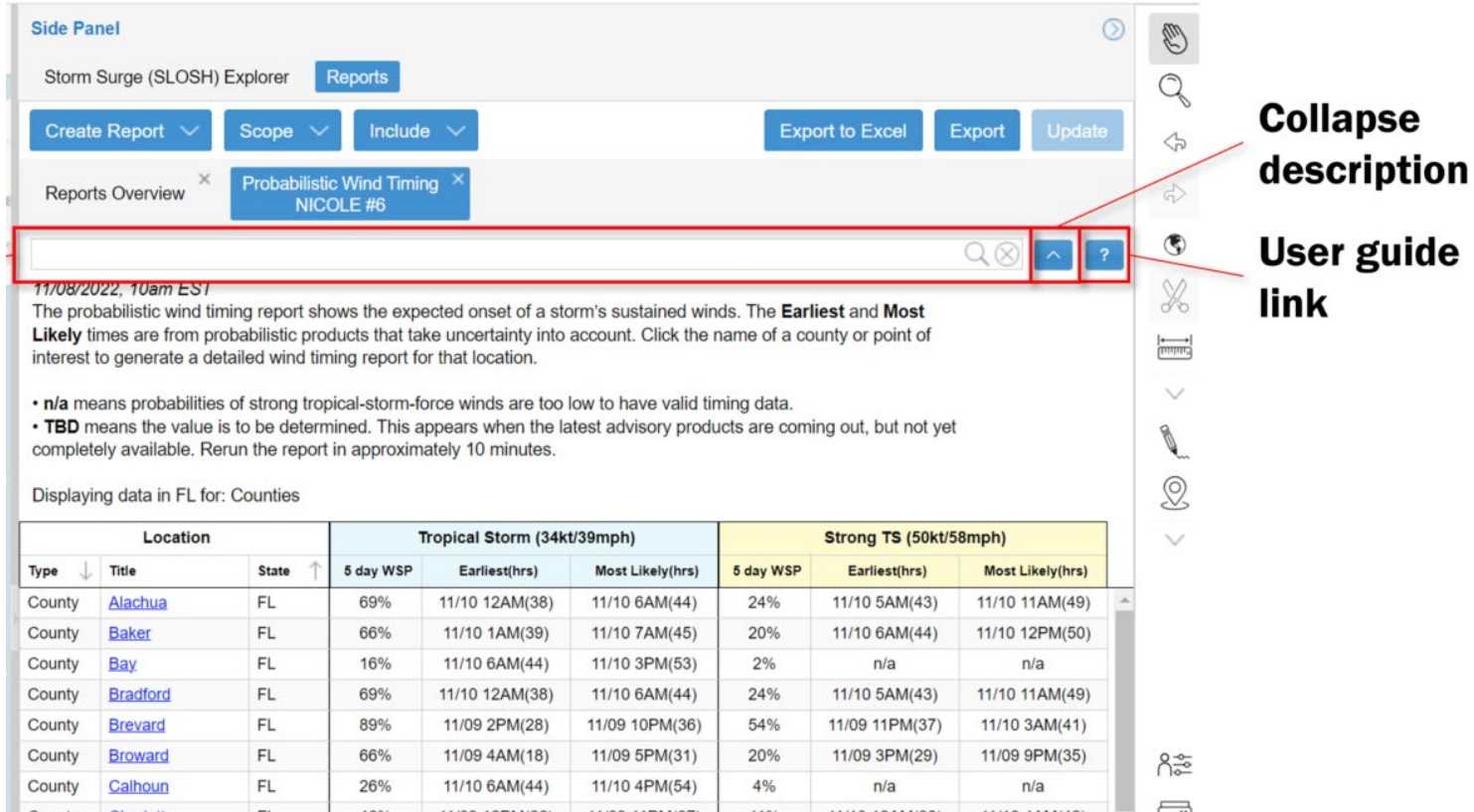
Improved Reports

- Header reformatted; new options added
- Improved logic for times near advisory issuance (“TBD”)
- Bug fixes and performance enhancements



Location			Tropical Storm (34kt/39mph)			Strong TS (50kt/58mph)		
Type	Title	State	5 day WSP	Earliest(hrs)	Most Likely(hrs)	5 day WSP	Earliest(hrs)	Most Likely(hrs)
County	Alachua	FL	69%	11/10 12AM(38)	11/10 6AM(44)	24%	11/10 5AM(43)	11/10 11AM(49)
County	Baker	FL	66%	11/10 1AM(39)	11/10 7AM(45)	20%	11/10 6AM(44)	11/10 12PM(50)
County	Bay	FL	16%	11/10 6AM(44)	11/10 3PM(53)	2%	n/a	n/a
County	Bradford	FL	69%	11/10 12AM(38)	11/10 6AM(44)	24%	11/10 5AM(43)	11/10 11AM(49)
County	Brevard	FL	89%	11/09 2PM(28)	11/09 10PM(36)	54%	11/09 11PM(37)	11/10 3AM(41)
County	Broward	FL	66%	11/09 4AM(18)	11/09 5PM(31)	20%	11/09 3PM(29)	11/09 9PM(35)
County	Calhoun	FL	26%	11/10 6AM(44)	11/10 4PM(54)	4%	n/a	n/a

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What's Next in 2023?

Points of Interest Updates

- Improve management and display capabilities for user-defined locations
- Expanded application in reports and flags for wind and surge

Incorporation of new NOAA Products

- Peak Storm Surge graphic
- Wind timing information for more areas of the Pacific
- Several refinements to Conditions tab layers

In-app Notifications

- Keeps users better informed of changes to HURREVAC functionality, new forecast product availability, time-sensitive storm updates, and more.

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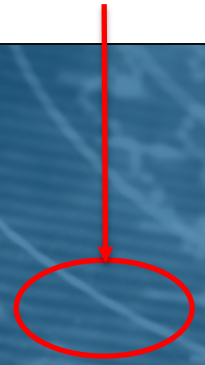
Points of Interest (POI) Enhancements

1. Better control of POI display on map with styles and zoom level

Style definitions of
- Zoom level for display
- Marker size and color
- Label font, size, and color

*associated with each POI type



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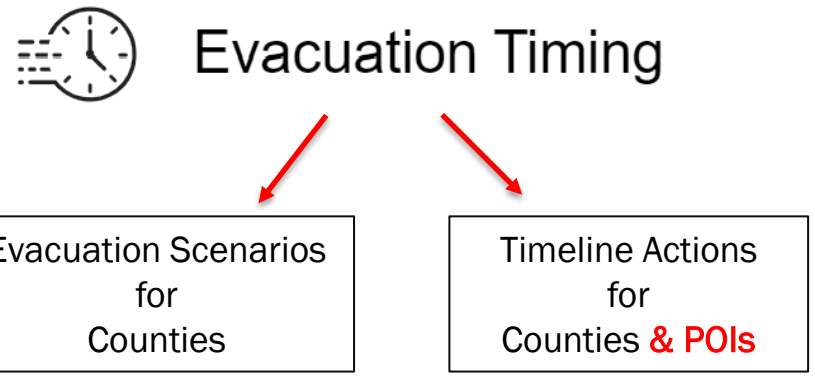
27

Points of Interest (POI) Enhancements

1. Better control of POI display on map with styles and zoom level
2. POI integration into timing tools like arcs and evacuation reports



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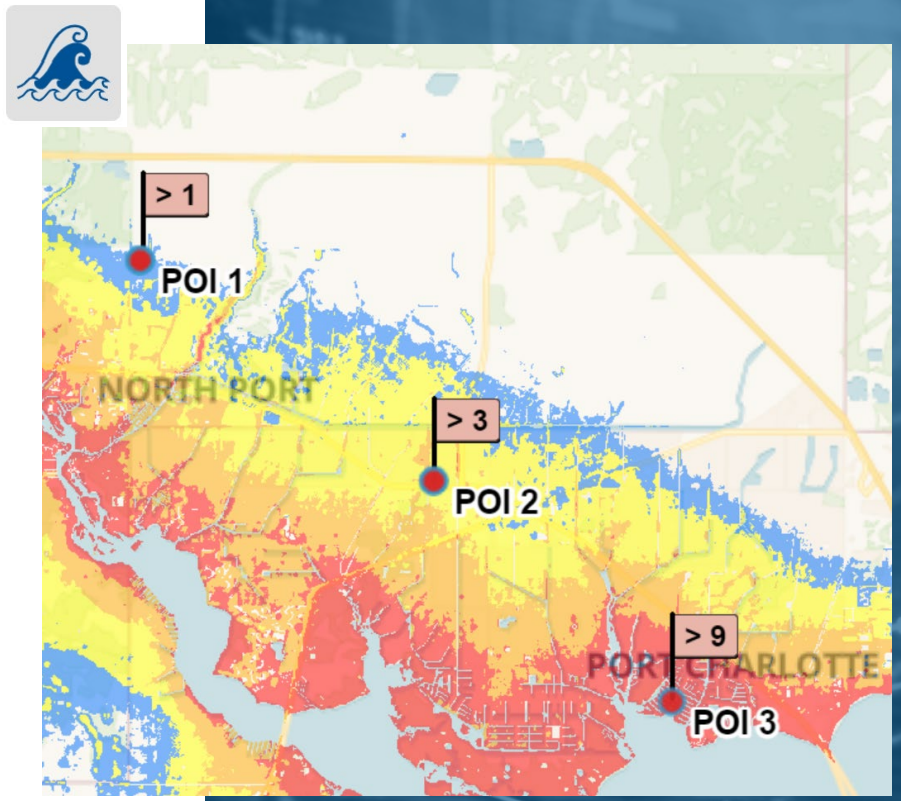
Points of Interest (POI) Enhancements

1. Better control of POI display on map with styles and zoom level
2. POI integration into timing tools like arcs and evacuation reports
3. Flags for surge and wind created from, or saved as POIs



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Why Notifications?

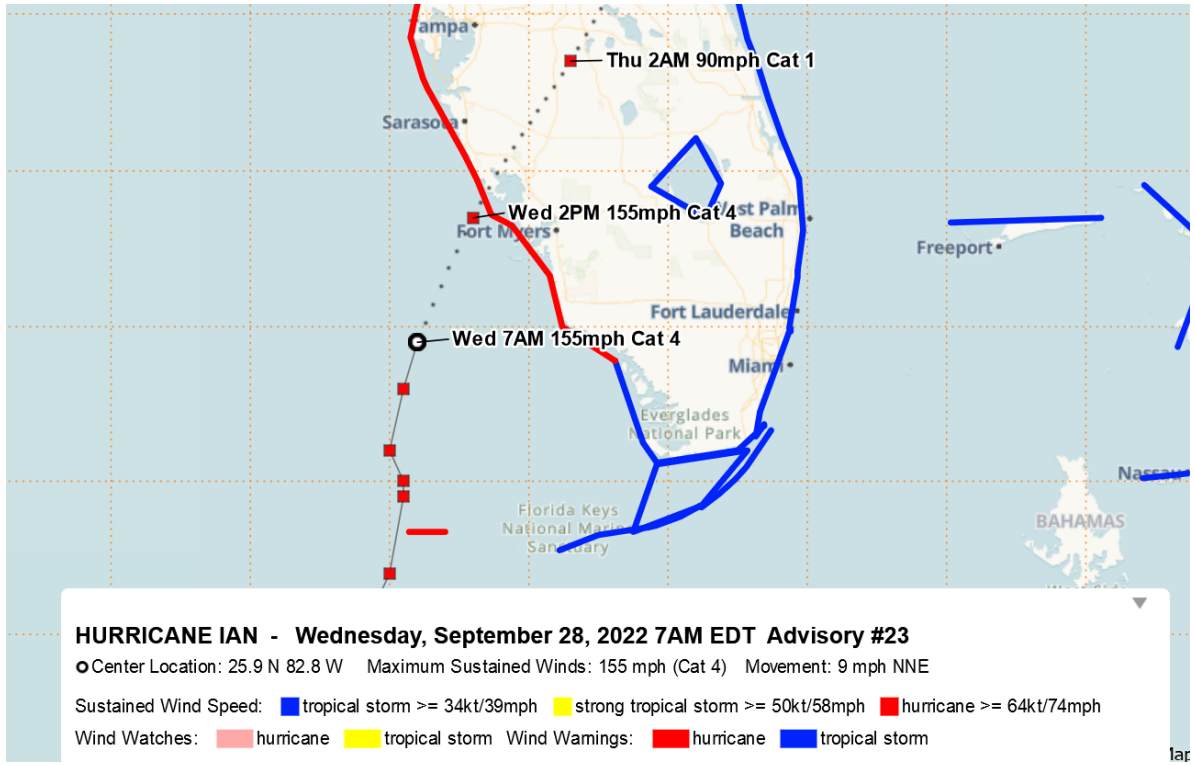
Important Information

Storm-related

- TCU for system initiation, landfall statement, special advisories, corrections
- Initiation of U.S. watches & warnings and surge products

Program-related

- Issues with data or layers – and resolution
- Other contingencies



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Why Notifications?

Routine Information

Storm-related

- TCU for position updates, basin change, etc.
- Hindcast available

Program-related

- Announcing new features
- SLOSH and HES data updates

Other engagement

- Webinars and new training resources

System messages

- Connection to server lost
- GIS export ready to download
- Simulated Storm generated
- Surge layer does not exist for storm

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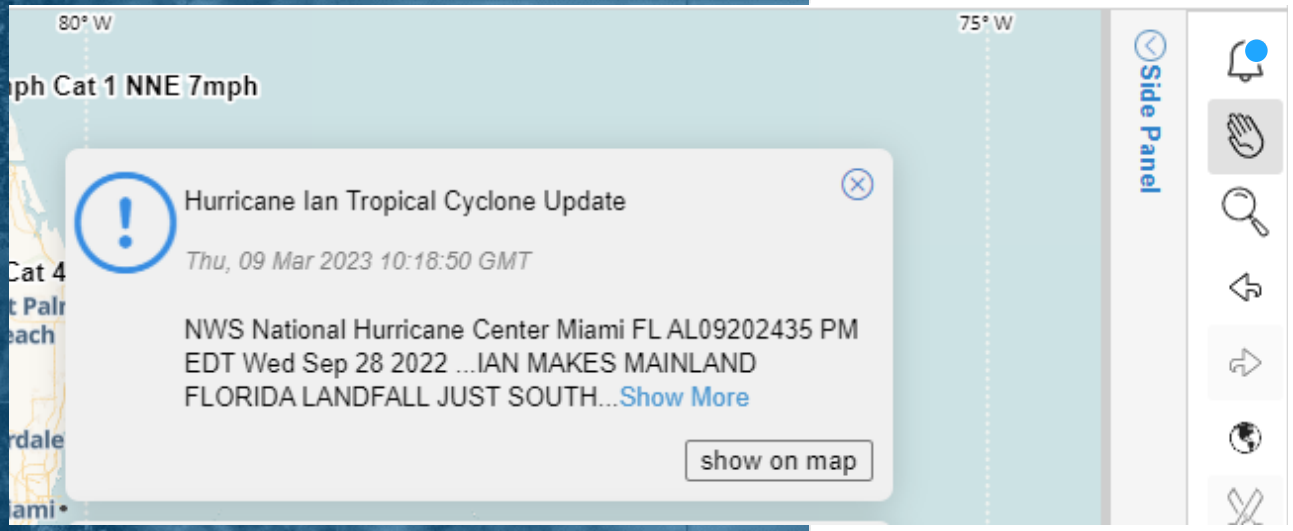
Notification Concepts



- Simple but flexible interface
- **All** notifications go to **all** users
- Critical information will appear as it arrives, or when you first log in
- Routine notifications are unobtrusive
- Incorporates existing system messages
- Notifications are set to expire when no longer relevant
- Users do not have to manage their own inbox or settings
- One-way, no replying

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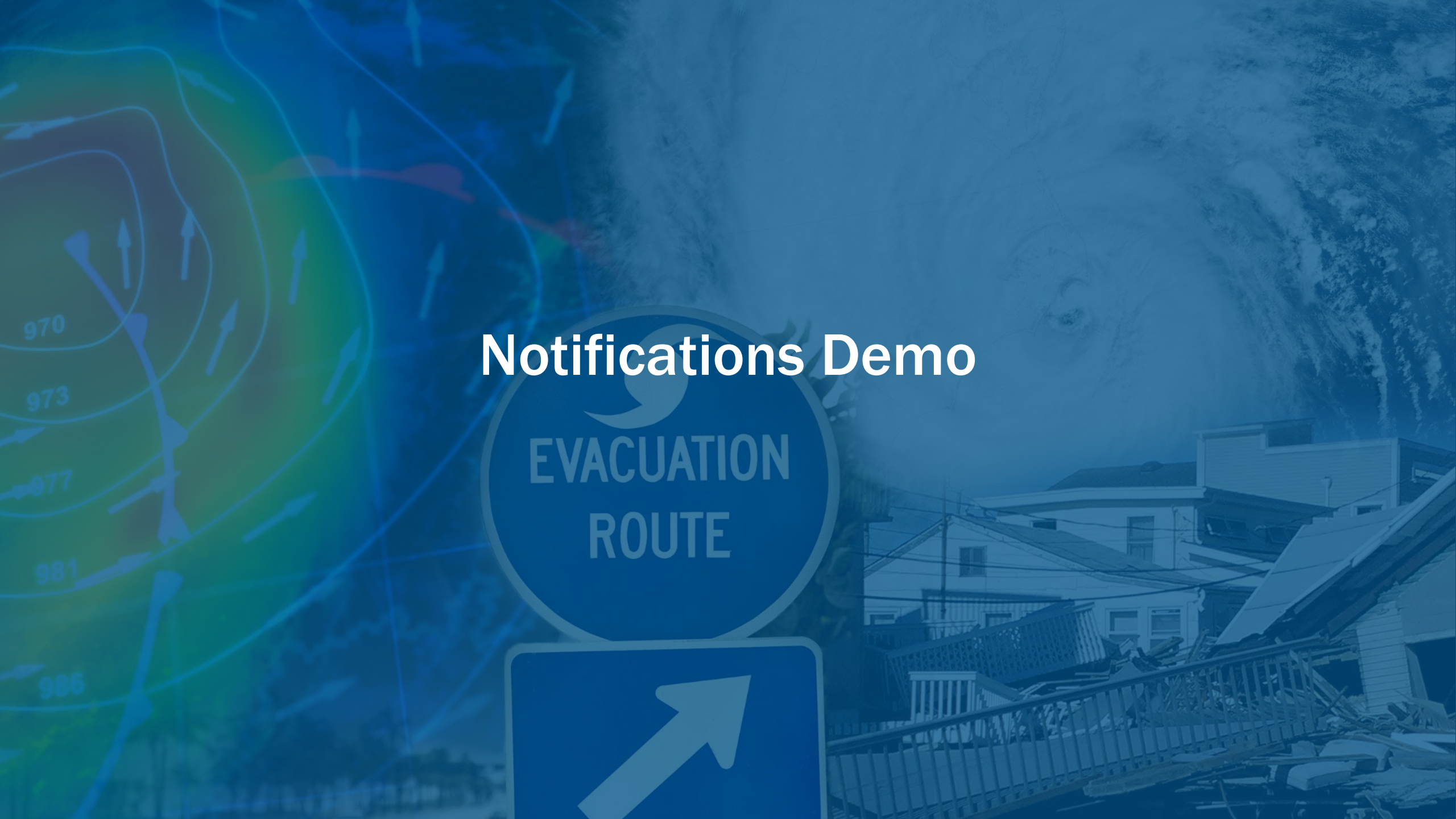

Notifications Demo

HURREVAC Developments Discussion

Where can I get training?

Annual webinar series: June 12 to June 16

- 5 sessions in 5 days
- Live 60–90-minute programs at 2PM EDT
- Recordings on YouTube

Custom sessions

- Coordinated with state and local EM agencies
- In person or virtual

Register for the webinars here!

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What's on the Horizon?

Thank you!

Provide feedback to the NHP here!

FEMA

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HURREVAC

HURRICANE DECISION SUPPORT TOOL