

REAL-TIME GEOSPATIAL DATA SHARING ACROSS PLATFORMS TO ENHANCE NWS OPERATIONAL IMPACT-BASED DECISION SUPPORT SERVICES TO CORE PARTNERS

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Session 5: Enhancement to the Operational Environment
TCORF / 71ST IHC, MIAMI, FL



CLARIFICATION ON DEFINITION OF 'COLLABORATION'

- **Widely used**: Gathering of people in the same room or via telecon to discuss pertinent information related to decision making (i.e. talking with colleagues)
- **StormCenter Definition**: The open access to, and sharing of, trusted data, across platforms, products and devices in a real-time collaborative environment to improve situational awareness and decision making

PROBLEM KEY PROBLEM ADDRESSED THROUGH SBIR PROPOSAL

2010

The Federal Government has difficulty putting its data to work to benefit decision makers. Data is scattered about in various archives and data servers but has high value if it can be accessed and used in a timely fashion. It is also critical for agencies to be able to share that data with as many decision makers as possible.

SBIR PROGRAM FEDERAL GOVERNMENT



INNOVATIVE IDEA

SBIR/STTR

SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER



New Invention
to scale across
federal agencies
Saving time and \$

SBIR PROGRAM FEDERAL GOVERNMENT



INNOVATIVE IDEA

SBIR/STTR
SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER

4-6 year maturity process

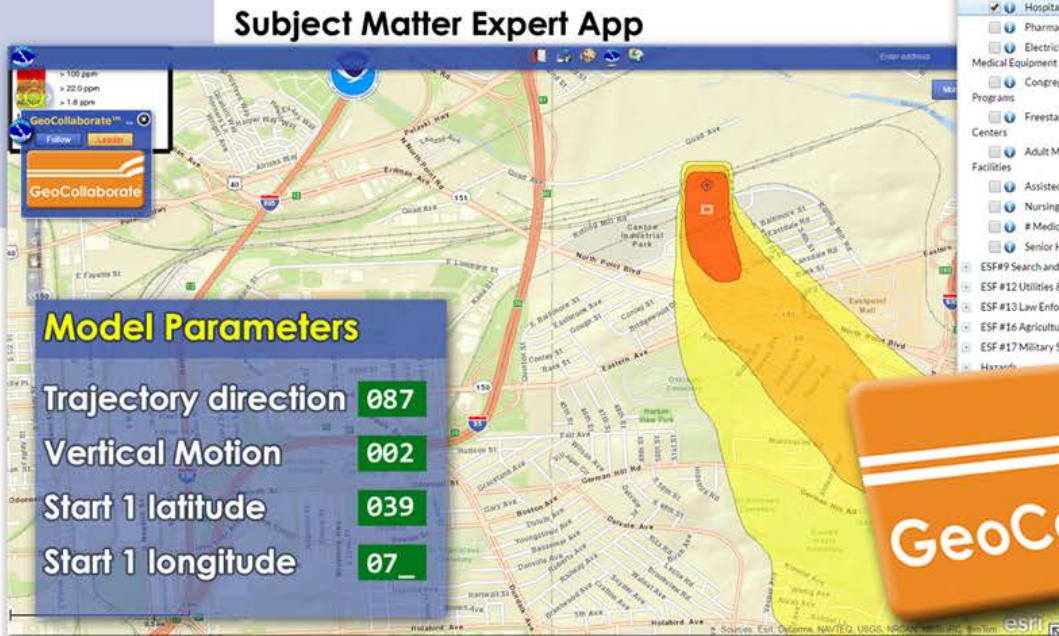
Focus:

Accessing & Sharing
Geospatial Data
Between Agencies (Fed,
State, Local) to improve
situational awareness
and decision making

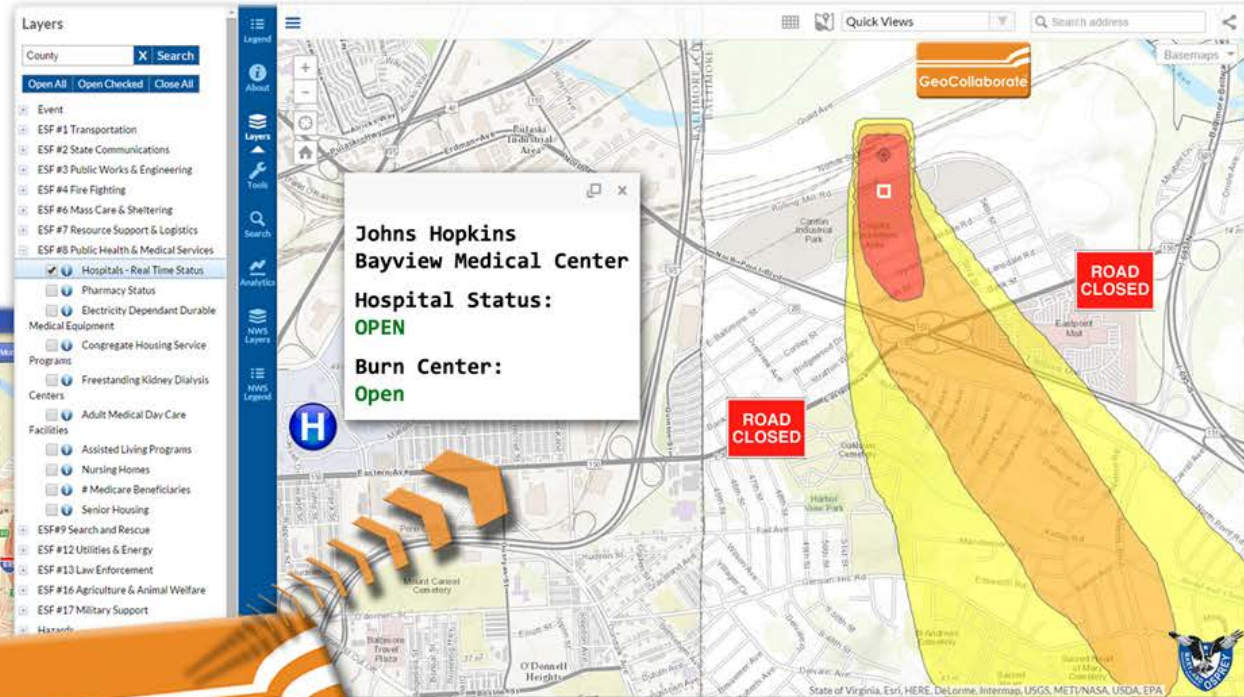
- Platform independent
- Product independent
- Data agnostic

GEOCOLLABORATE® TECHNOLOGY

Subject Matter Expert Creates and Delivers Model Forecast to Public Safety Stakeholder Showing Toxic Airborne Particles Released from a Train Derailment in Baltimore City



Public Safety Stakeholder App



...the plume model appears in public safety stakeholder's applications where it can be paired with real-time stakeholder data to identify vulnerabilities and improve situational awareness.

A subject matter expert uses an expert modeling tool and forecast data to create a plume model, and using GeoCollaborate™...

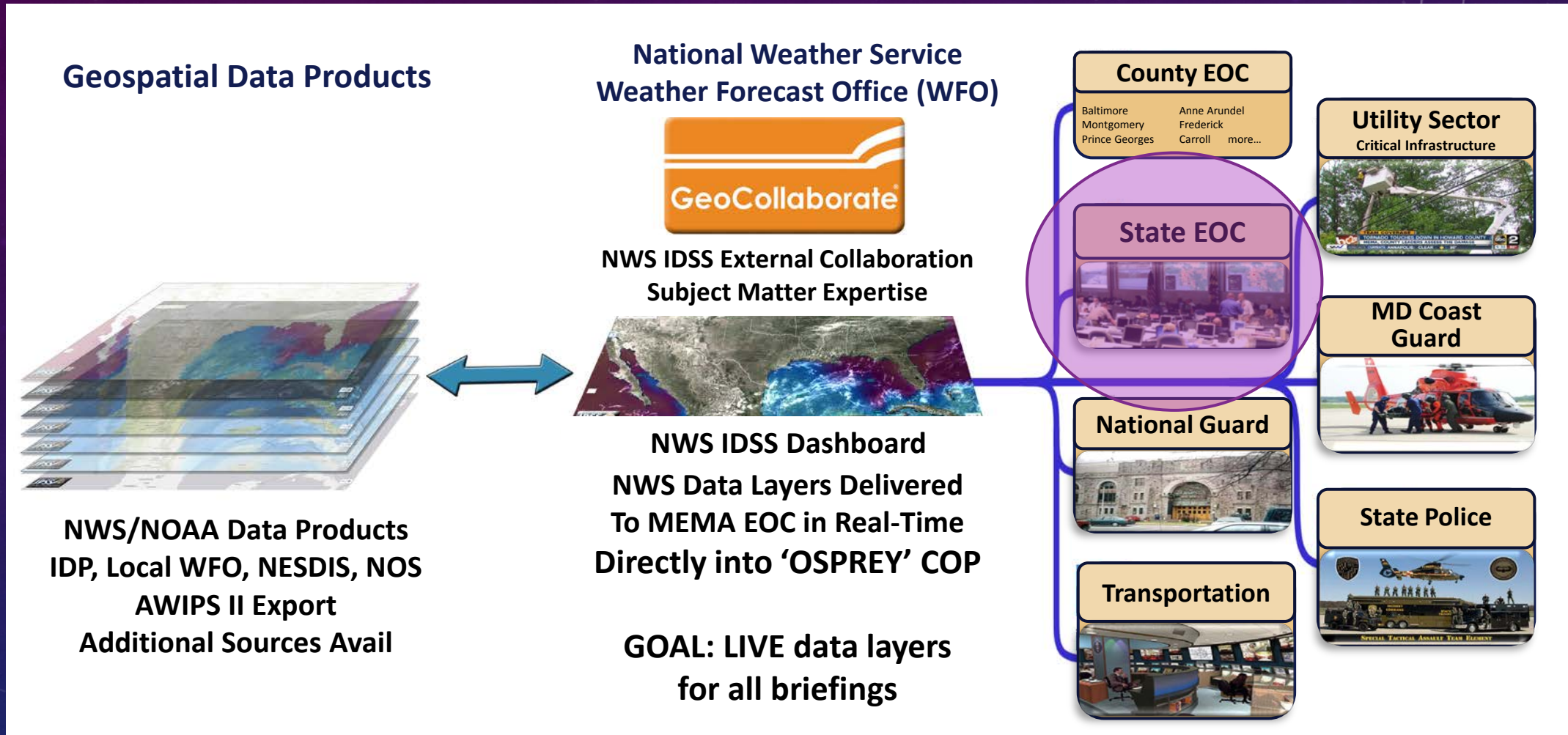
WHY IS RT DATA SHARING & COLLABORATION IMPORTANT ?

- **Real-time sharing of data across platforms enables:**
 - Accelerated situational awareness
 - Accelerated decision making
 - Places all participants on the same map at the same time from anywhere
 - Accelerates feedback on products
 - Enables Training using RT datasets, from distances

WHY IS RT DATA SHARING & COLLABORATION IMPORTANT ?

- **Real-time sharing of data across platforms enables:**
 - **Provision of IDSS from remote locations**
(no longer essential that everyone be in EOC)
 - **Engages subject matter experts much quicker**
 - **Collaborative approach to consistent products**
 - **Cross-platform map interoperability**
 - **Accelerates Research-to-Operations & O2R**

NWS & MEMA FEDERAL – STATE DATA SHARING



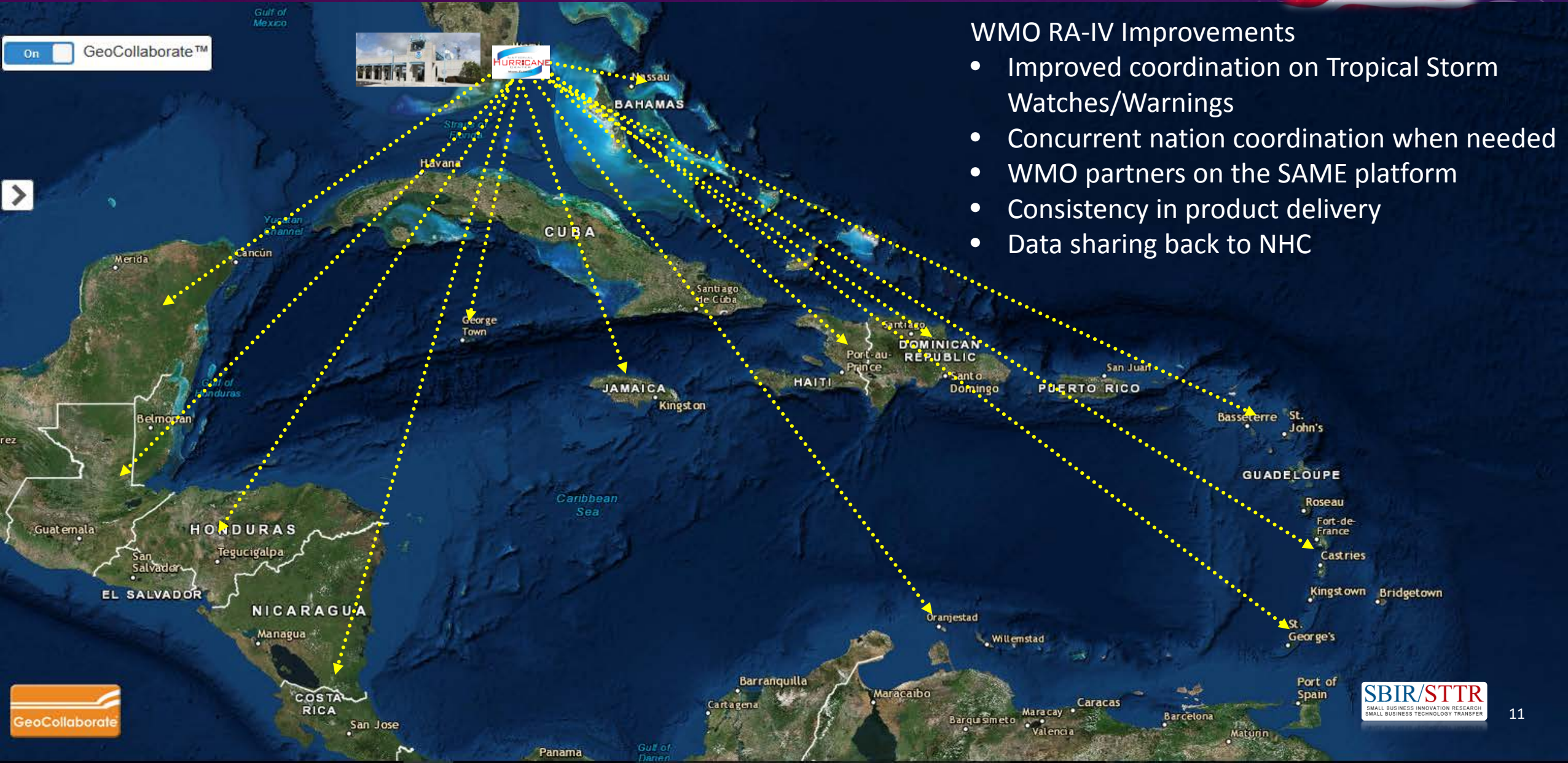
SETTING THE STAGE FOR DEPLOYMENT

NWS & MEMA FEDERAL – STATE DATA SHARING

Sharing across any platform or device from ANY location



NOTIONAL APPLICATIONS ACROSS FEDERAL GOV



WMO RA-IV Improvements

- Improved coordination on Tropical Storm Watches/Warnings
- Concurrent nation coordination when needed
- WMO partners on the SAME platform
- Consistency in product delivery
- Data sharing back to NHC

NOTIONAL APPLICATIONS ACROSS FEDERAL GOV

- Intra-Aircraft collaboration
- Inter-aircraft collaboration
- Hurricane ecosystem data sharing & SA
- NHC ability to highlight new areas to investigate to in-flight ops
- Collaboration as a Force Multiplier



Atlantic Oceanographic and Meteorological Laboratory

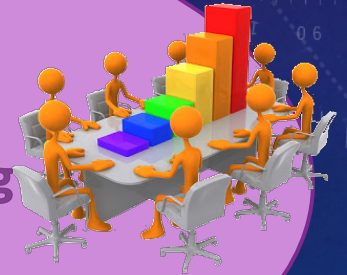
NOTIONAL APPLICATIONS ACROSS FEDERAL GOV



- Hurricane Hotline Enhancements
- Deliver graphics & visualizations to federal participants
- Visual information supported by words retained longer
- Ability to engage participants in feedback & questions
- Overall enhancement to the experience



Hurricane Hotline
Secure Information Sharing
Environment



COLLABORATIVE DECISION MAKING

FORCE MULTIPLIER



NASA

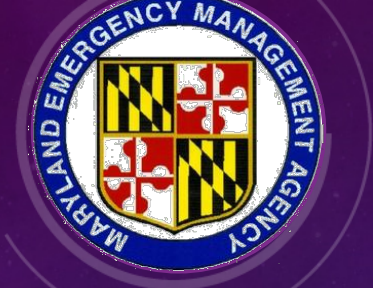


LIVE DEMONSTRATION

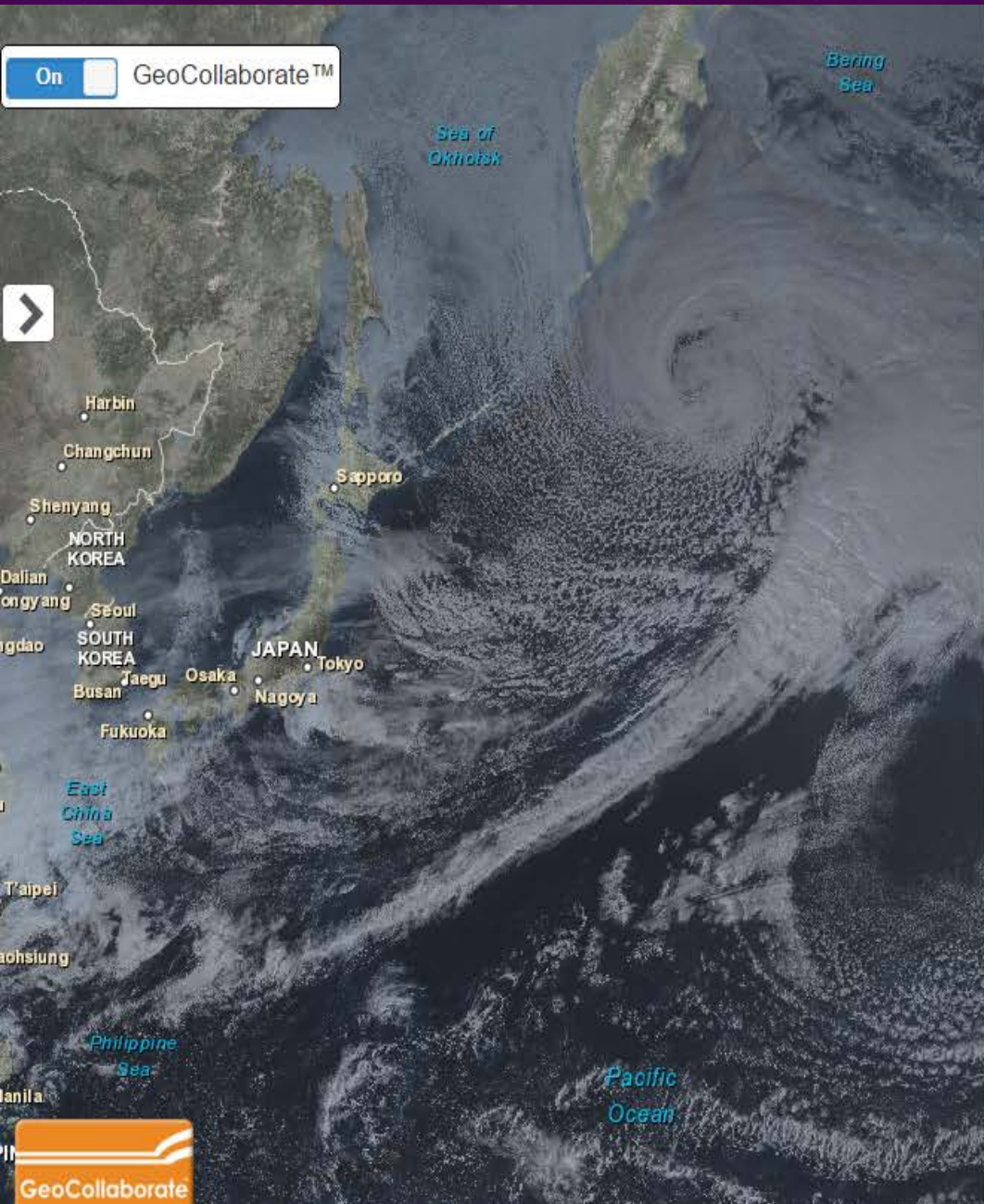


StormCenter
COMMUNICATIONS, INC.
COMMUNICATIONS, INC.

BACKUP SLIDES



On GeoCollaborate™



Twin Intense Pacific Storms
February 21, 2016
Satellite: Himawari (Japan) & GOES W (US)
GeoCollaborate®



POWERED BY



Reload Dashboard

Layers

- RT Wx Radar-NWS
- NWS Watches Warnings LIVE
- CONUS visible Latest
- GOES US IRimage-Latest
- WPC 5-Day Sig River Flood Outlook
- delaware green
- pennsylvania green
- PSURGE-TD0920160830-12
- PSURGE-Exceed10-2016083012hr
- NHC Exp StormSurgeWW20160830-9pmET
- NWS 24Hr Rainfall Forecast
- Hermine Green States

Key Points

Fleet Response Working Group GeoCollaborate(R) Testbed

Click on **BLACK** Dots to see Official NHC Forecast Intensity

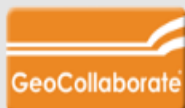
GREEN states=Pass Through States
RED states=State of Emergency Declared

- Click on **RED STATES** to access Declarations

September 1, 2016 1:55pm ET
 NOAA NWS Headlines

Fleet Response Working Group – GeoCollaborate® ACTIVE
Hurricane Hermine - LIVE NWS UPDATES, Declarations

Regional Fleet Response Operational Use



DATA DRIVEN DECISION MAKING (3DM)

AHC / DHS CATEX Exercise Derecho Impacting Mid-Atlantic

Step 1: 8 Hours before Impact

Derecho forecast, possible high impact event indicated on dashboard

NWS products from SPC

Dashboard Active

Key Points Highlight Potential for High Impact Event

Thunderstorms developing in Ohio moving rapidly Eastward

Derecho Passed moving into Ocean

Damage reported, power out, damage assessment available?

Declarations of Emergency

GeoCollaborate Session active and scheduled

Dashboard Active

Open/Close Data

Damage Assessment?

Coordination of Fleet Returning Home

Dashboard active – any evolving weather threats

•Date



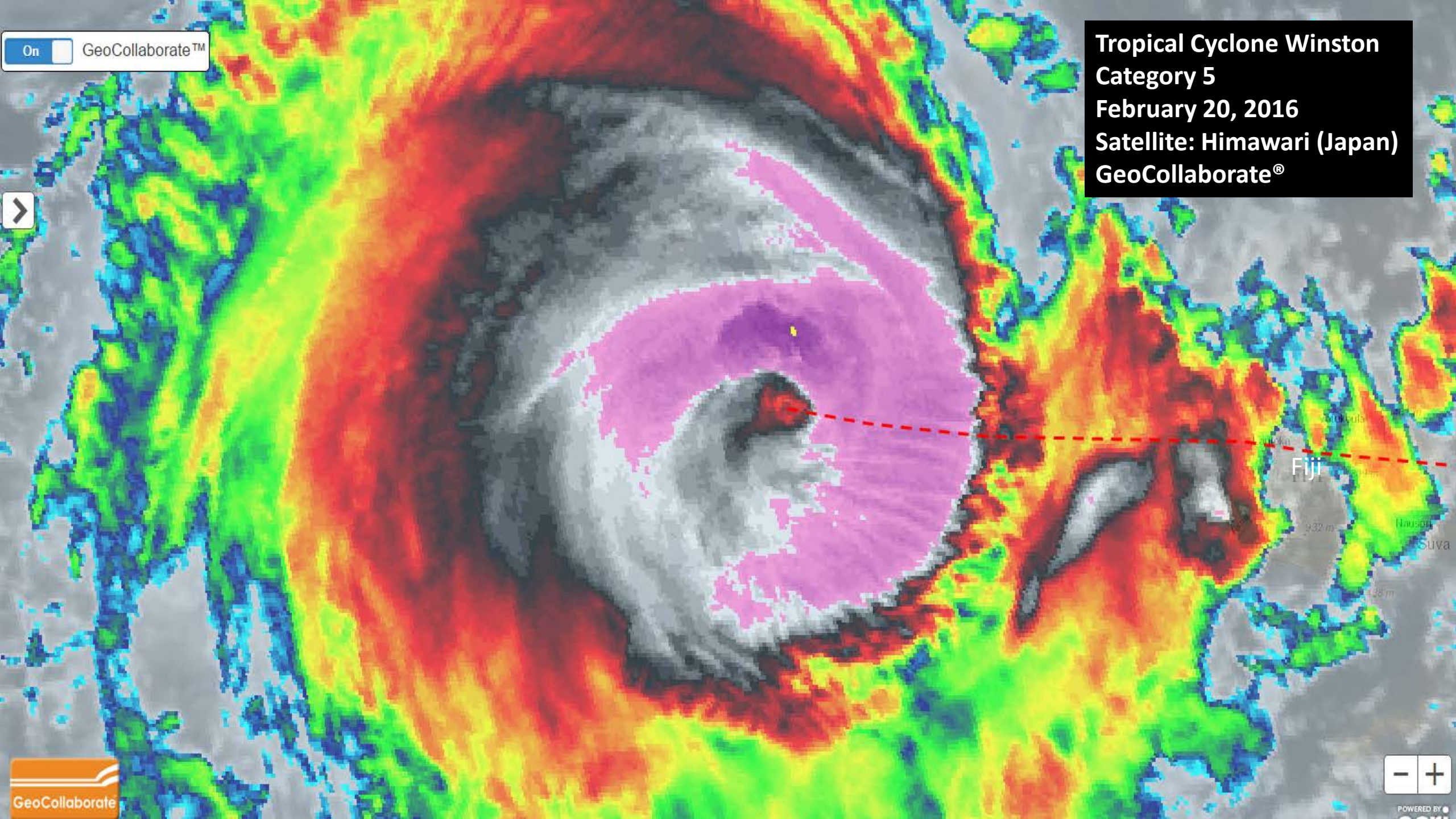
Step 2: Derecho crossing Appalachians
NWS Forecast that it will remain intact and impact large metro region
Headed to DCA, BWI, RIC
RMAG Email Engagement
Dashboard Active
SISE Portal Activated
Initiate GeoCollaborate Session to begin sharing data
Trusted Sources Ready to serve critical datasets

Fleet Movement Coordination
Dashboard Active – Recovery weather impacts
GeoCollaborate® active for states to see where response crews are headed
Open/Close data available
US Canadian Border Crossing States access SISE Portal to connect to Dashboard to see planned fleet movement
Fleet Drivers can access Declarations on mobile devices

• Date

Evolution DRAFT: StormCenter Communications: Datasets subject to revision, agency, private sector updates

Tropical Cyclone Winston
Category 5
February 20, 2016
Satellite: Himawari (Japan)
GeoCollaborate®



Fiji

932 m

Nausori

Suva

438 m

Tropical Cyclone Winston
Category 5
February 20, 2016
Satellite: Himawari (Japan)
GeoCollaborate®

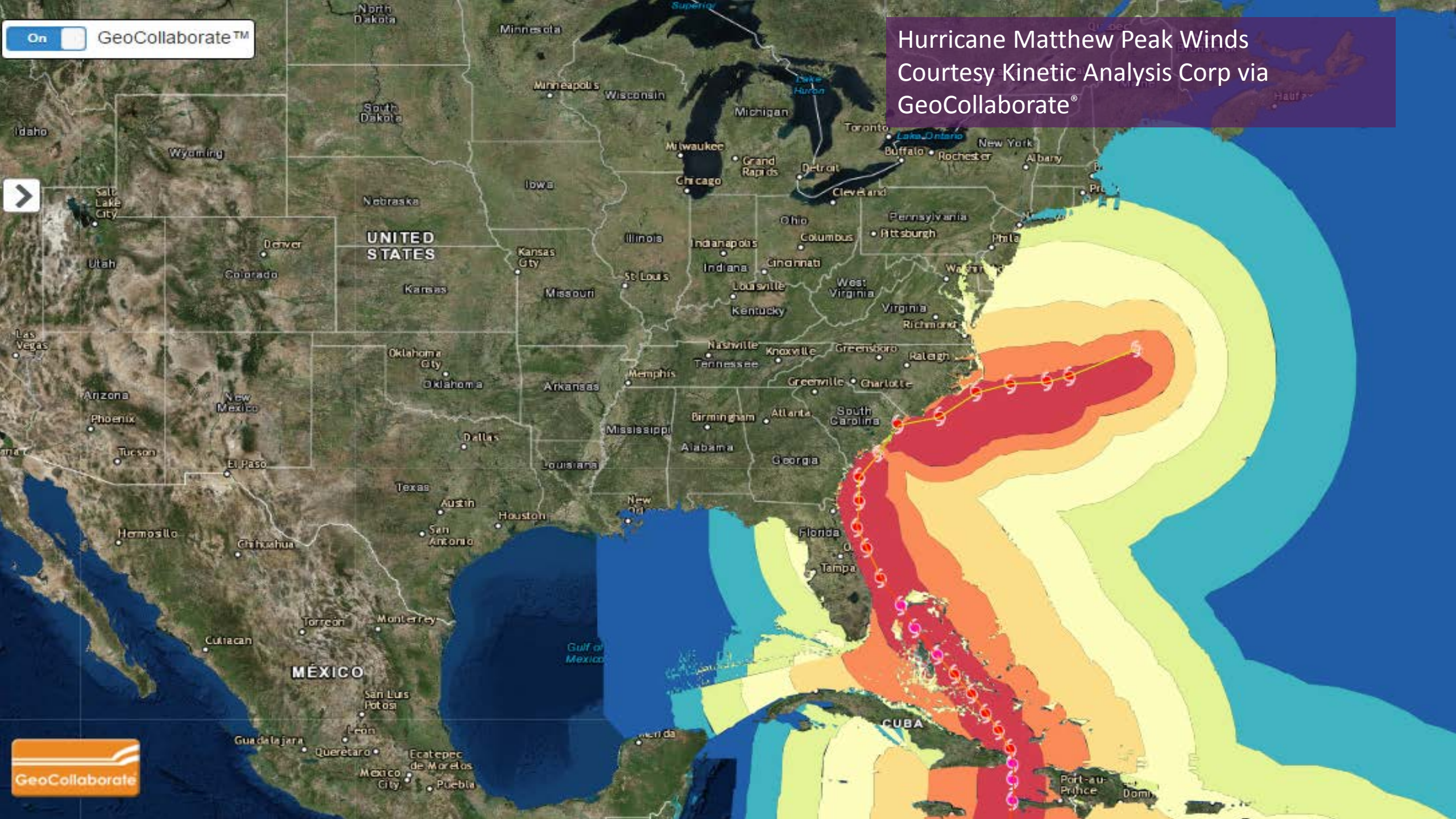
VANUATU

Port-Vila

FIJI

Nandi

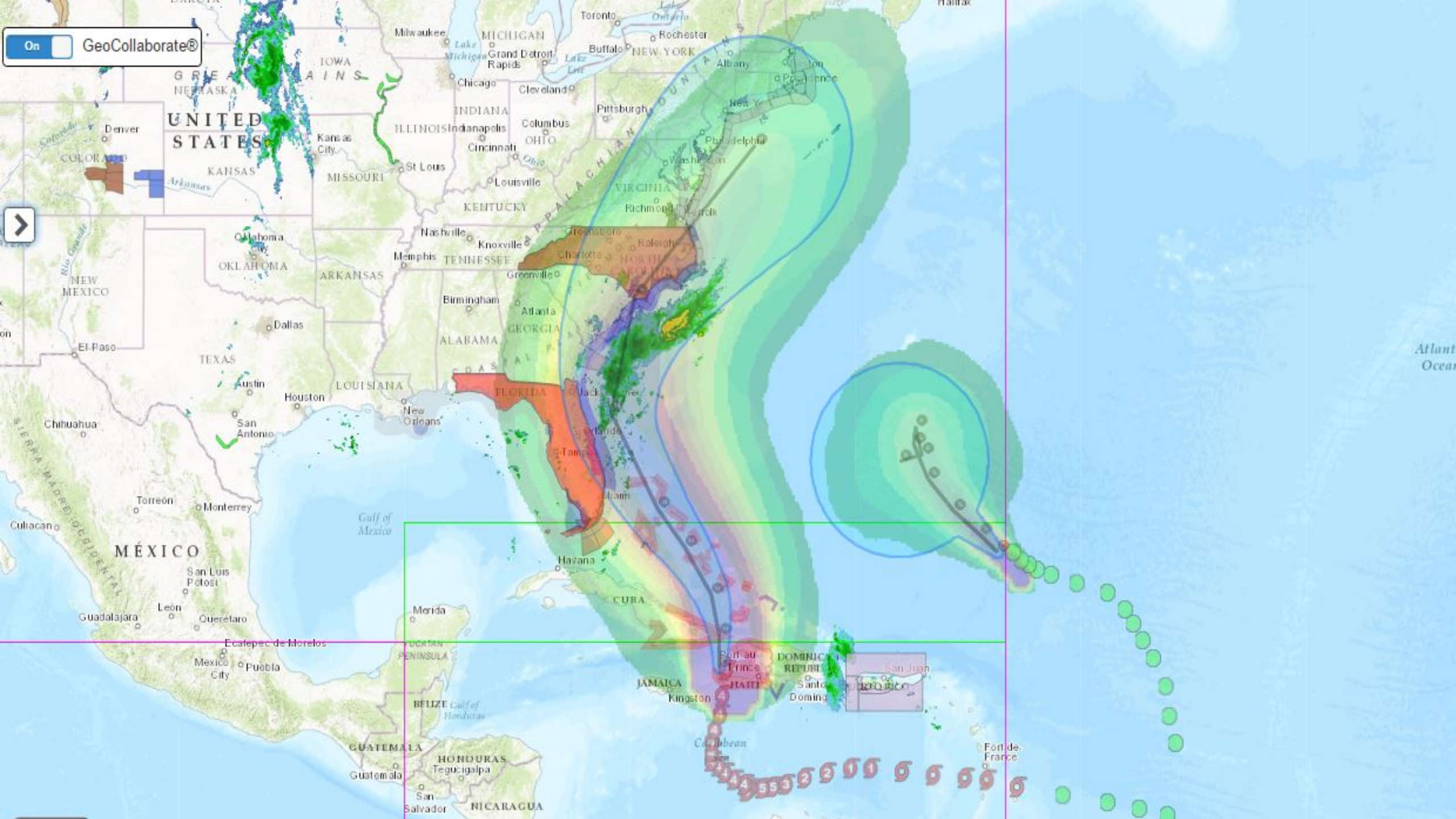
Suva

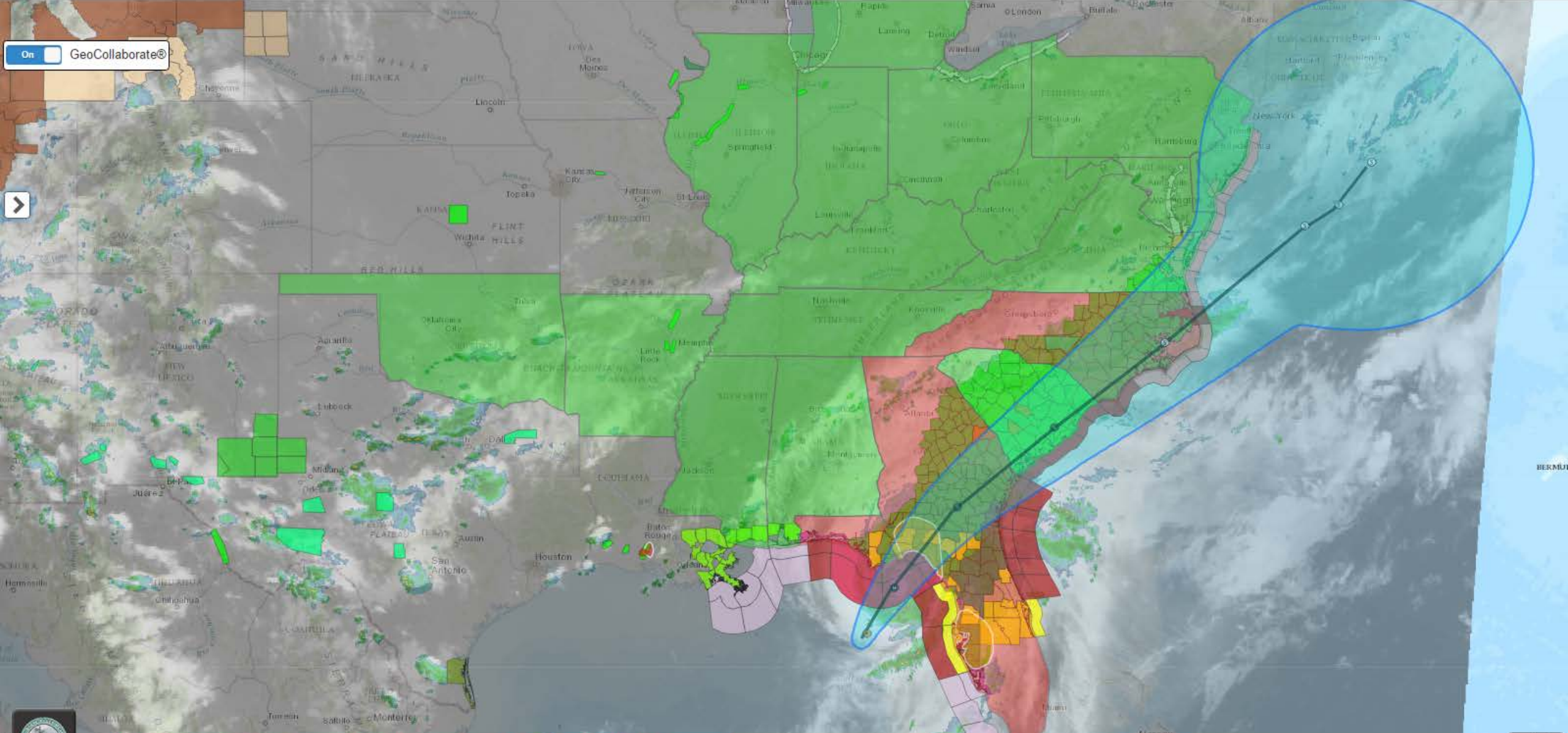


Hurricane Matthew Peak Winds
Courtesy Kinetic Analysis Corp via
GeoCollaborate®

On GeoCollaborate™

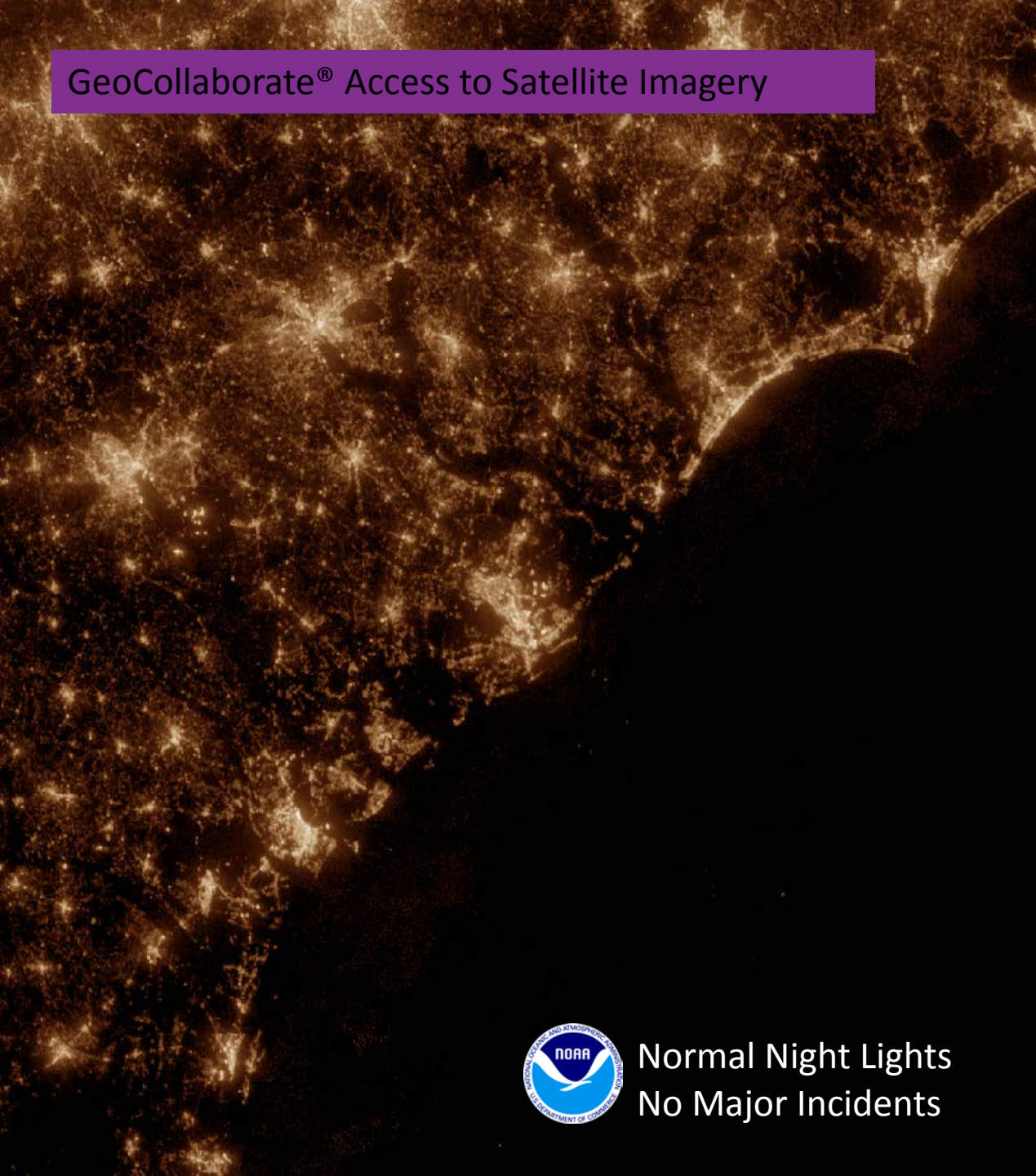
GeoCollaborate



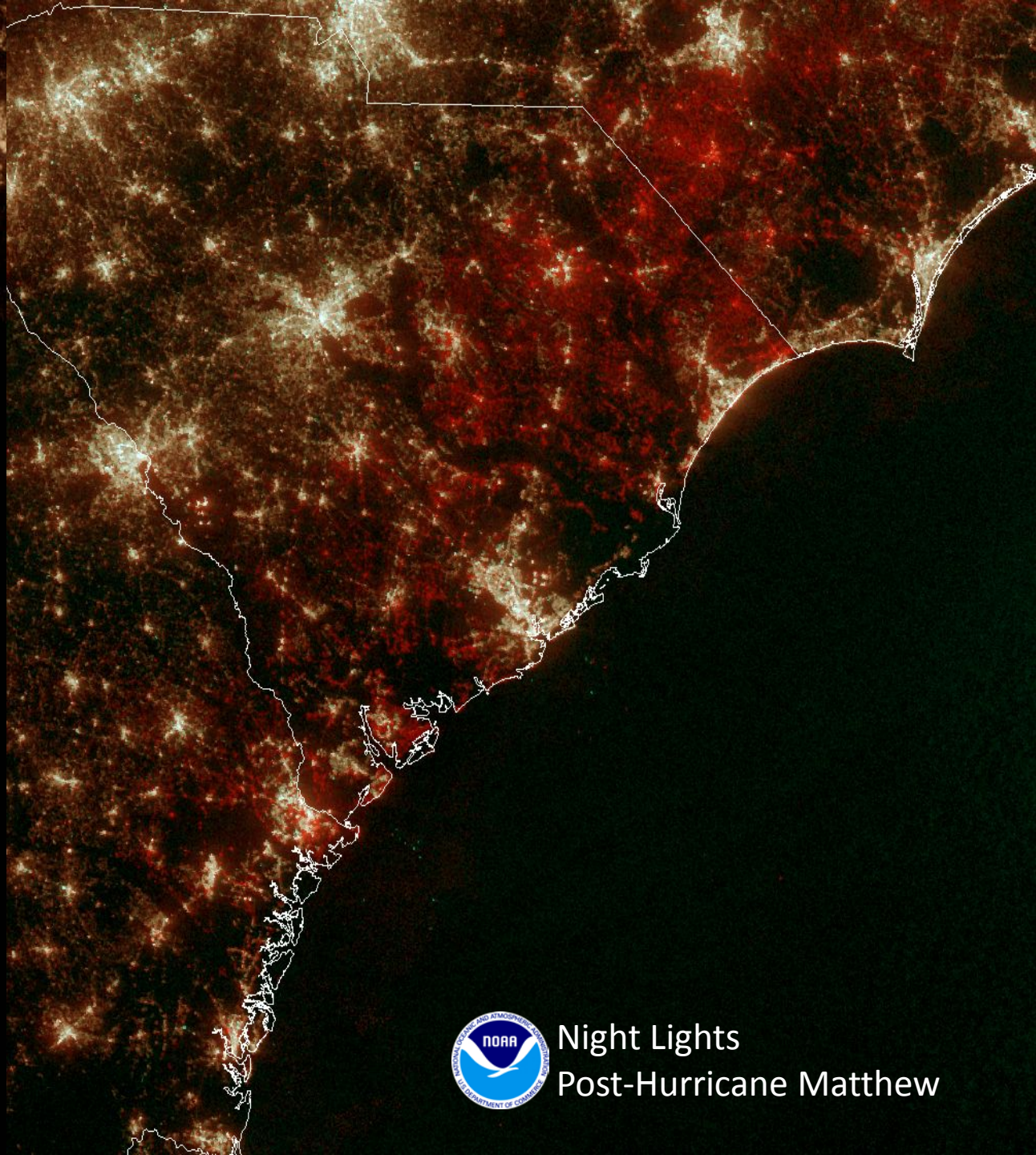


Fleet Response Working Group – GeoCollaborate® ACTIVE | **Regional Fleet Response Operational Use**
Hurricane Hermine - LIVE NWS UPDATES, Declarations





Normal Night Lights
No Major Incidents



Night Lights
Post-Hurricane Matthew