CRISIS RESPONSE
A SPECIAL SPATIAL SPOTLIGHT

2013 NYGeoCON

Saratoga Springs, NY

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Goals of Session

- Have fun!
- Learn a little about GIS and emergency management at various levels of government
- Consider what other GIS derived information is needed by the public
- Do a bit of thinking outside the box!

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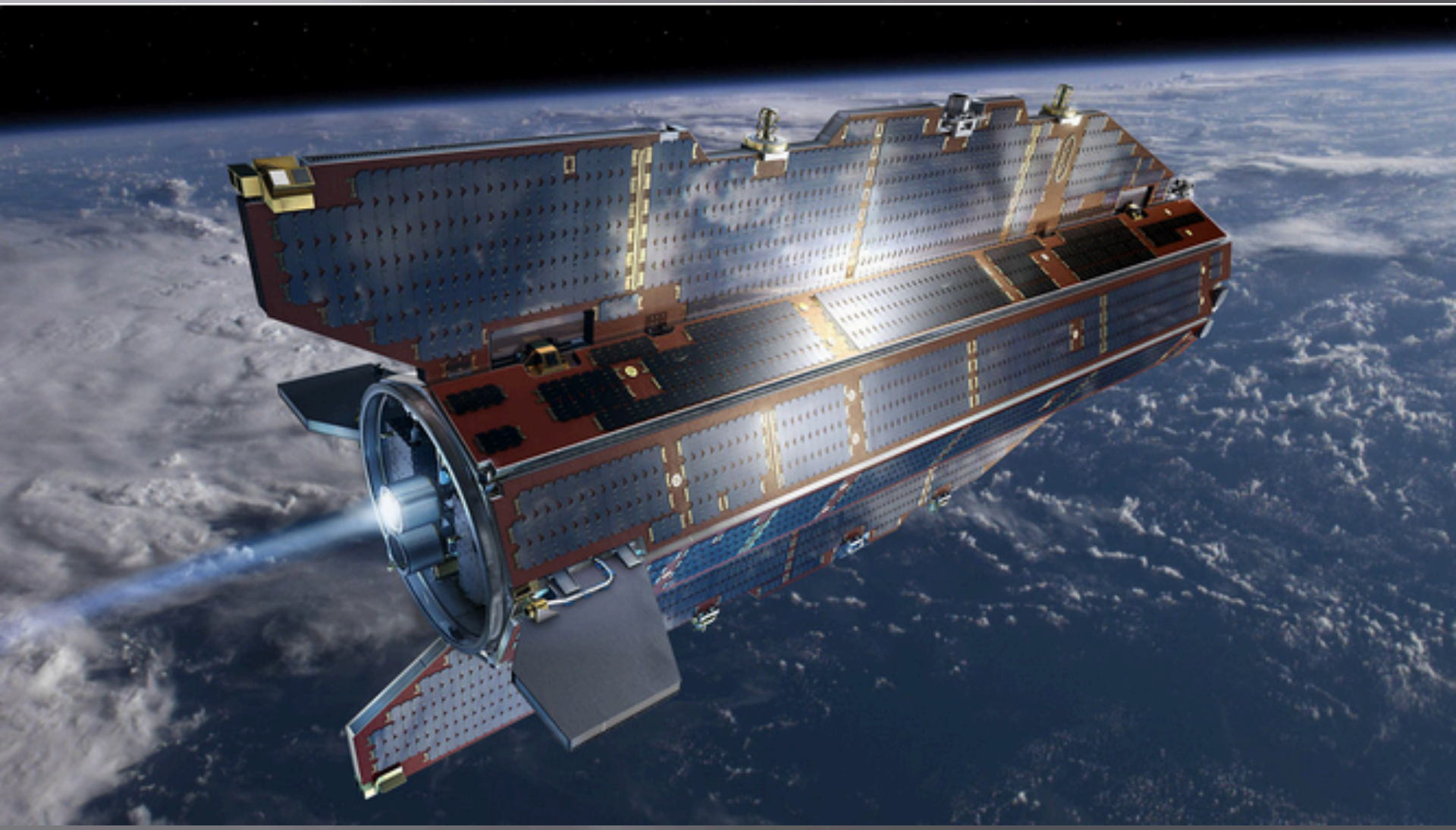
Look on the Bright Side!
We're Already Ahead of the Game !



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Panelists

- Julia O'Brien, FEMA Region II Geospatial Coordinator
- Tim Ruhren, Mapping Technologist, NYS Office of Information Technology Services
- Doug Schuetz, GIS Director, Rockland County
- Don Meltz, Don Meltz Planning & GIS

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Session Agenda

- The session will be divided into 2 parts: 15 minutes of introductory information & 75 minutes of facilitated discussion
- Part 1 – Presentation on issues and keys to the successful use of GIS for emergency management
- Part 2 – Scenario Exercise w/Facilitated Discussion
  - Audience & panelist answers
  - "Lessons learned"

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"Typical" GIS Emergency Management Issues

- Lack of understanding of Emergency Mgt. needs
- Lack of understanding of GIS capabilities
- Lack of understanding of Emergency Mgt protocols
- Lack of adequate GIS preparation
- Lack of adequate GIS resources at the local level
- Lack of good communication on GIS
- Lack of distribution of GIS work

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"Typical" GIS Emergency Management Issues

- Lack of information to the public
- Lack of access to event specific data (people coming in)
- Timing
  - Getting GIS staff together quickly
  - Getting products out in the first 1-2 hours
  - Meeting general expectations
- Having adequate data on location and extent of event

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Keys to Successful Use of GIS that Emergency Managers Need to Know

- Learn how can GIS assist emergency managers in responding to events
- Have a GIS team selected and trained in ICS
- Integrate the use of GIS into standard operating procedures/emergency management workflow
- Provide regular communication with the GIS team on needs, expectations and product delivery timetables.

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Keys to Successful Use of GIS that Emergency Managers Need to Know

- Provide your GIS team with regular training on GIS software/tools as well as incident scenarios
- Integrate the use of GIS into emergency management drills/scenarios
- Educate emergency mgt staff on the benefits of GIS
- Provide a space in the EOC for the GIS team to work together/collaborate

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Keys to Successful Use of GIS that Emergency Managers Need to Know

- Provide appropriate bandwidth, Internet connectivity, servers, printers/plotters, supplies and IT staff support
- Designate a GIS liaison to work with the emergency managers and first responders to meet their needs and suggest support
- Provide the GIS professionals a clearly defined org chart
- Enable proper coordination with State and Federal Governments when appropriate

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Keys to Successful Use of GIS that GIS Professionals Need to Know

- Know what are the major issues facing emergency managers and first responders for common incidents
- Determent what GIS products can be of the greatest assistance to them for those incidents
- Establish a schedule for delivery of standard products
- Identify what data is required to produce those products and place as much as possible in a centralized location
- Create basemaps, templates and standard forms whenever possible

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Keys to Successful Use of GIS that GIS Professionals Need to Know

- Work with emergency management staff to integrate these elements into the daily briefings and emergency management workflow
- Ensure that you have the proper bandwidth (or establish what you have available), Internet connectivity, servers, printers/plotters and any other equipment
- Establish a risk avoidance plan for what to do without the items/services discussed with management and/or other key items with high probabilities of failure.

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Keys to Successful Use of GIS that GIS Professionals Need to Know

- Speed is critical! Products need to be delivered on time in order for emergency managers and responders to make informed decisions
- Develop training on software/tools, scenarios, and emergency management drills, and conduct this training on a regular basis
- Understand the organization chart in place during the event
- Create a staff list with contact information and shift preference pre-event that can be used during the response.

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Keys to Successful Use of GIS that GIS Professionals Need to Know

- Communication is critical during a response
  - Communicate with management and requestors about expectations, needs, and products available
  - Establish a procedure for processing standard products as well as new product requests
  - Conduct regular GIS team communication
  - Coordinate with State and Federal Governments when appropriate
- Create metadata "lite"
  - Include basic information such as the incident name, description, source of the data, contact information, the date and time it was created/collected and limitations

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POTENTIAL RESOURCES

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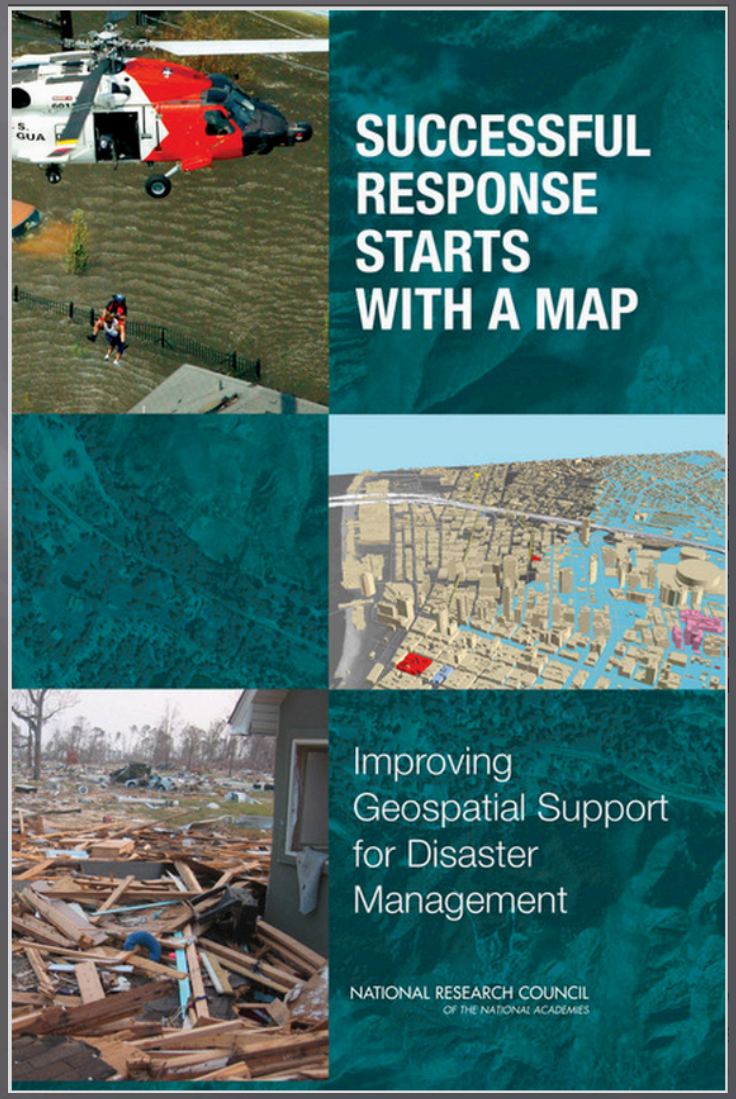
National Research Council

- National Research Council http://www.nap.edu/catalog.php?record_id=11793
  - GIS Preparedness Check List http://www.nap.edu/openbook.php?record_id=11793&page=163



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FEMA

- Federal Emergency Management Agency (http://gis.fema.gov/)

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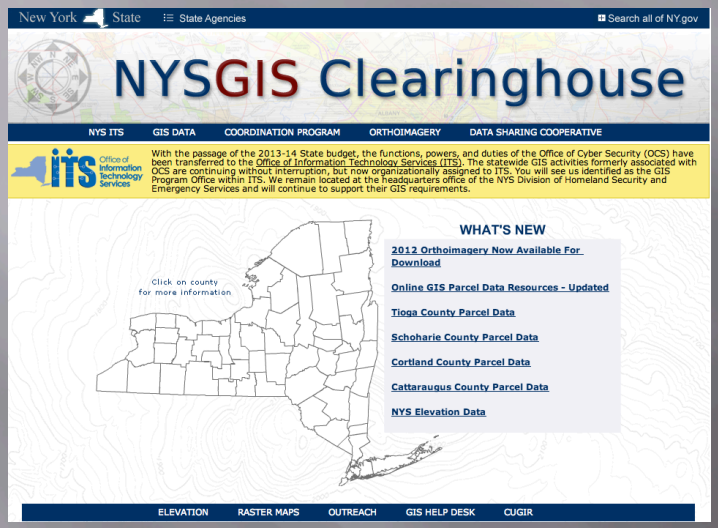
NYS Division of Homeland Security and Emergency Services



- NYS Division of Homeland Security and Emergency Services
- NYS ITS GIS Program Office
  - NYS GIS Clearinghouse - http://gis.ny.gov/
  - New York State's Critical Infrastructure Response Information System (CIRIS)

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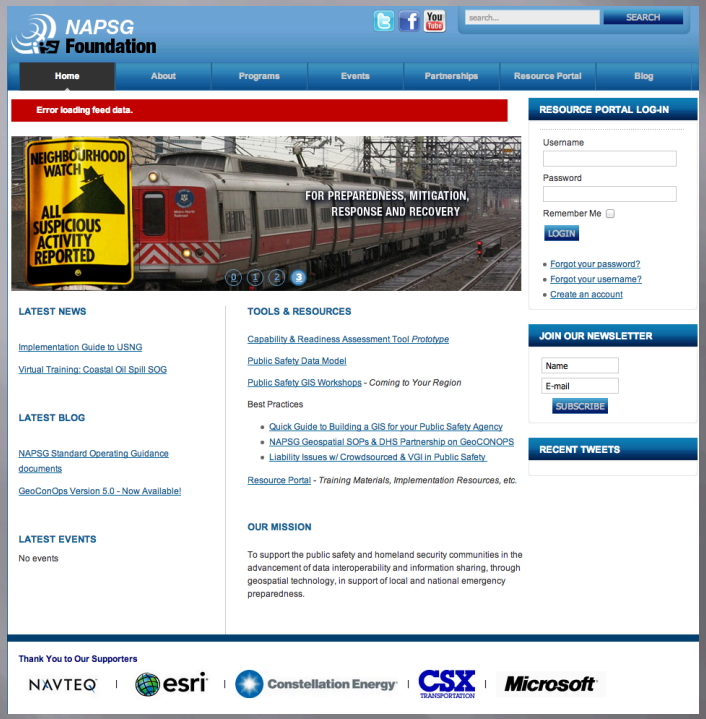
NAPSG



- National Alliance for Public Safety GIS: http://www.napsgfoundation.org/
  - Standard Operating Guidance Documents ://www.napsgfoundation.org/blog/napsg-blog/148-napsg-standard-operating-guidance-documents
    - SOG for Multi-Agency Coordination Centers
    - SOG for Coastal Oil Spills
    - SOG for Wildfires
  - Capability and Readiness Assessment Tool (CARAT) http://carat.napsgfoundation.org/

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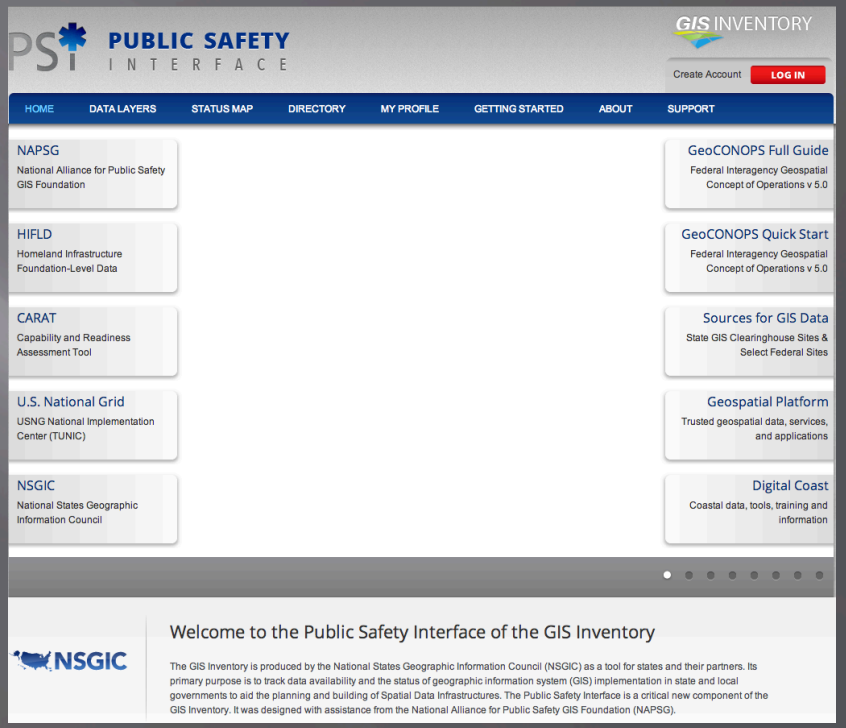
NSGIC

- NSGIC (www.nsgic.org)
  - GIS Inventory Public Safety Interface http://publicsafety.gisinventory.net/
  - GIS Emergency Contacts (all levels of government)
  - Lessons learned from Sandy



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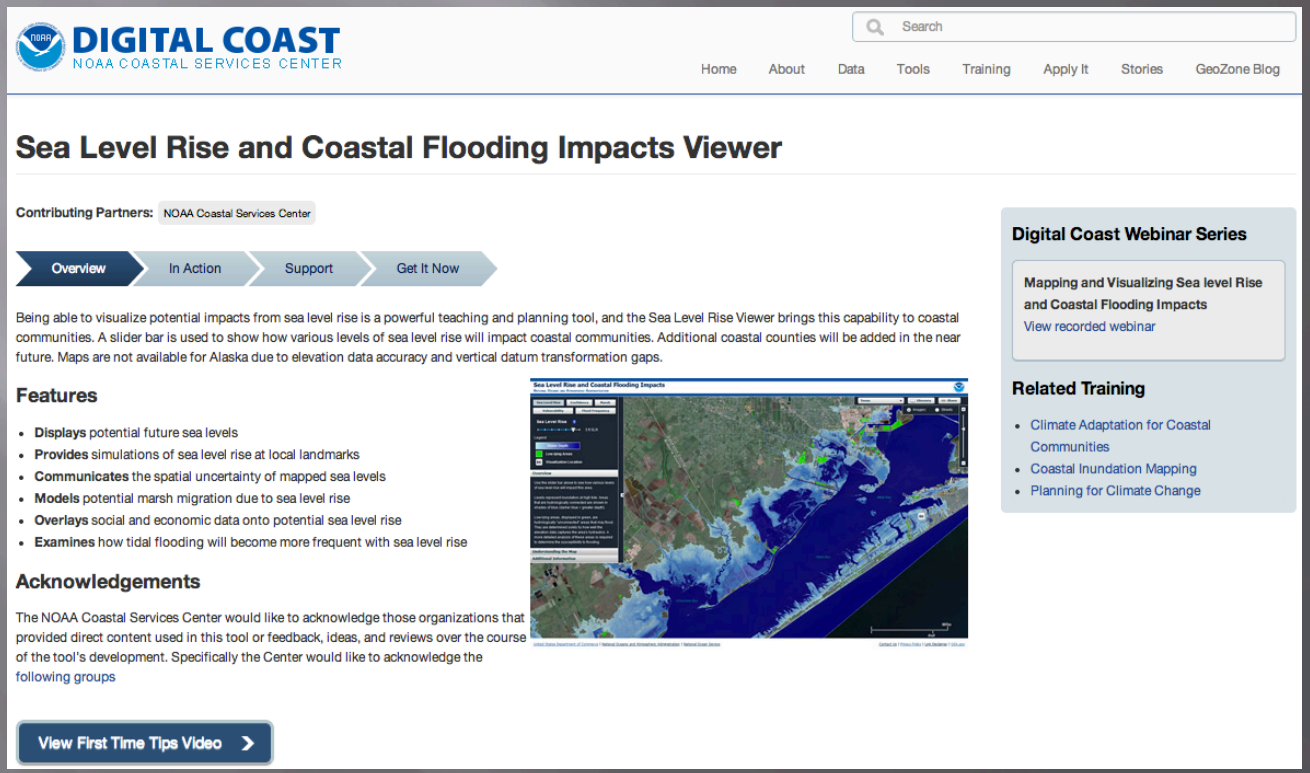
NOAA

- National Oceanic and Atmospheric Administration
  - Digital Coast http://www.csc.noaa.gov/digitalcoast/



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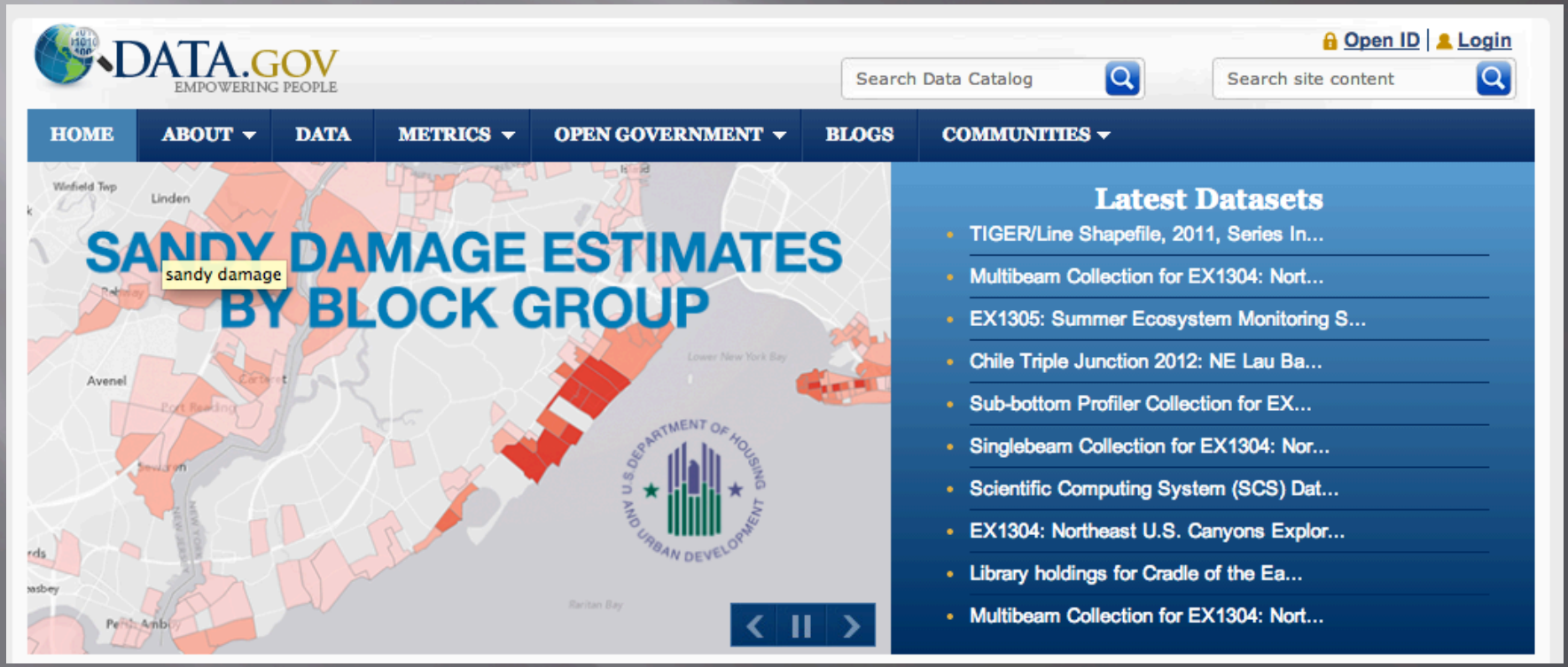
DHS

- Dept. of Homeland Security
  - Homeland Security Infrastructure Program (Freedom & Gold)



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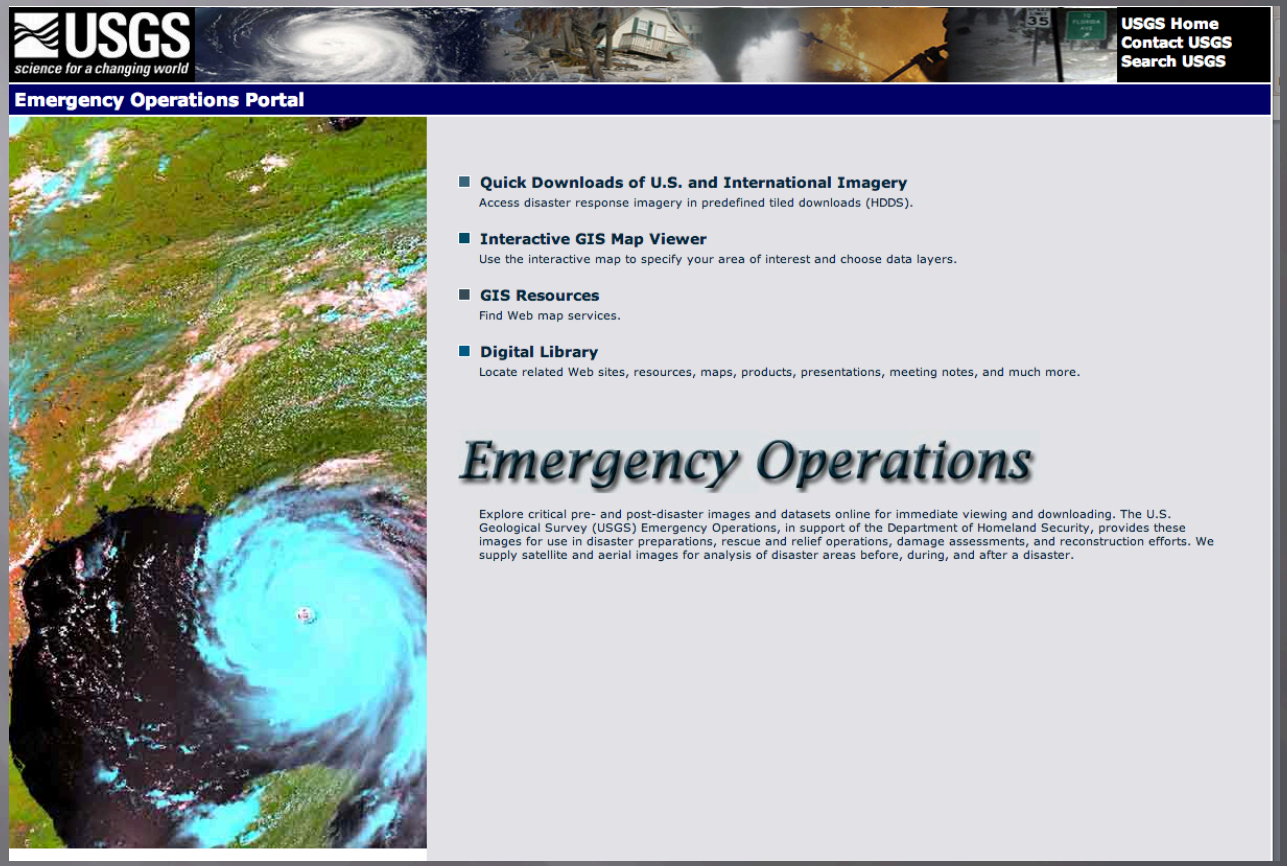
USGS

- United States Geological Survey – Emergency Operations Portal http://hdds.usgs.gov/EO/



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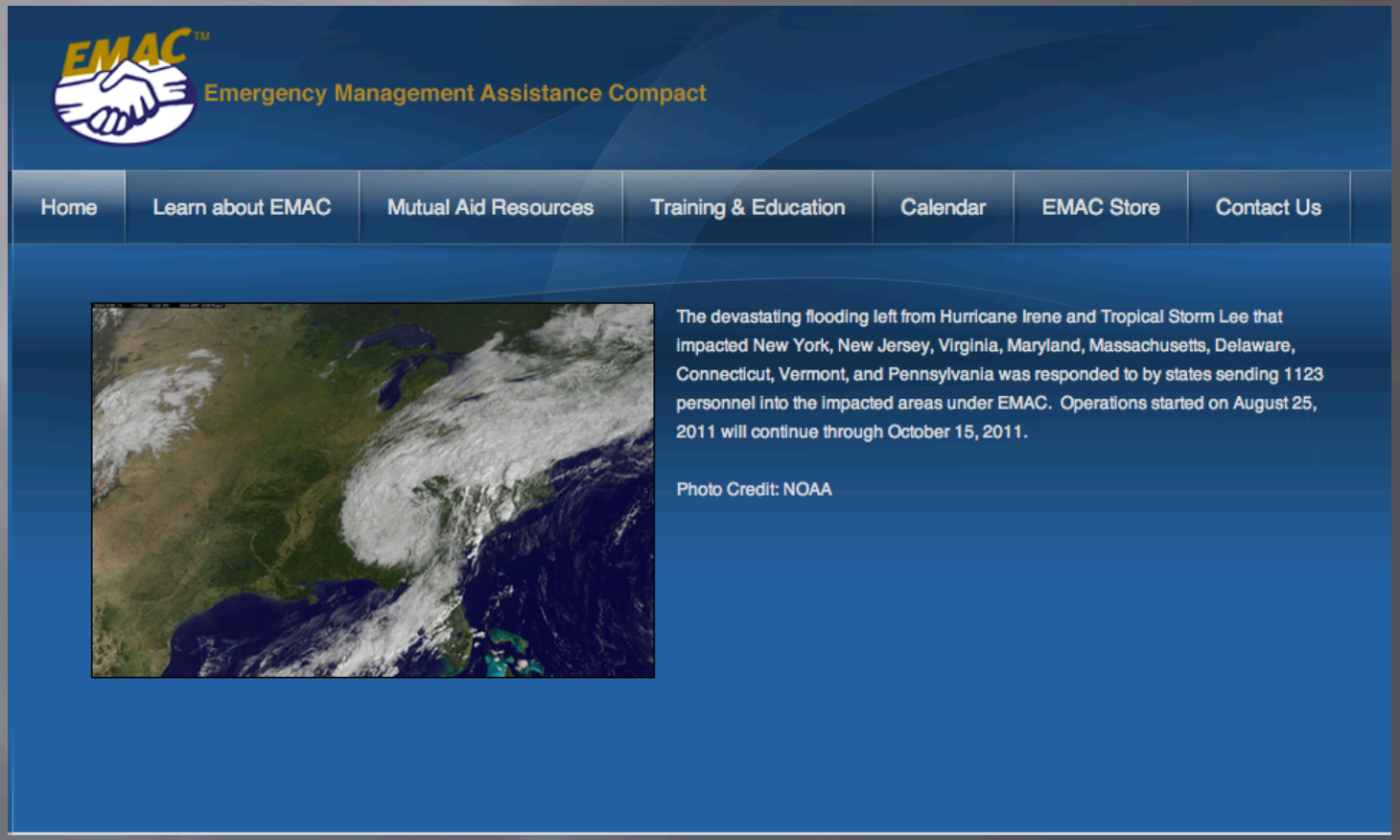
EMAC

- Emergency Management Assistance Compact (http://www.emacweb.org/)



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International Charter

- http://www.disasterscharter.org/

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SETTING THE STAGE FOR THE EVENT!

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Tuesday, November 26th 2013

- It's two days before Thanksgiving
- Folks have finalized plans for busiest travel time of the year
- Beautiful weather is predicted for the majority of the country for the remainder of the week
- One of the exceptions is the east coast where a major coastal storm is projected to hit landfall around New York City and head inland from there!

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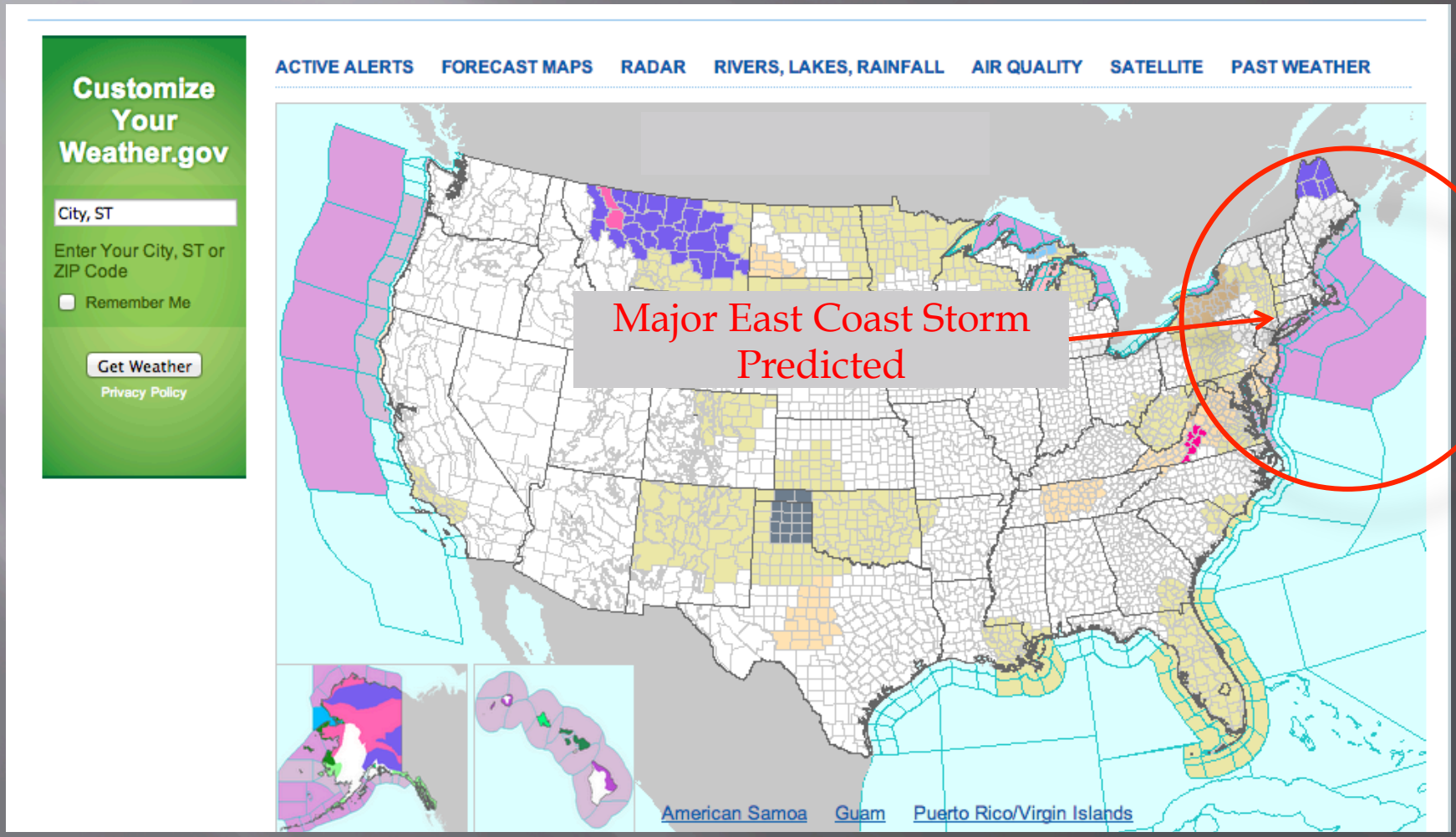
National Weather Service



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Wednesday, November 27th 2013

- The National Weather Service predicts heavy rain and wind for the coast.
- Potential for heavy snow and/or ice further inland.
- Possible flooding and heavy snow
- It appears that NYC may be spared the brunt of the storm

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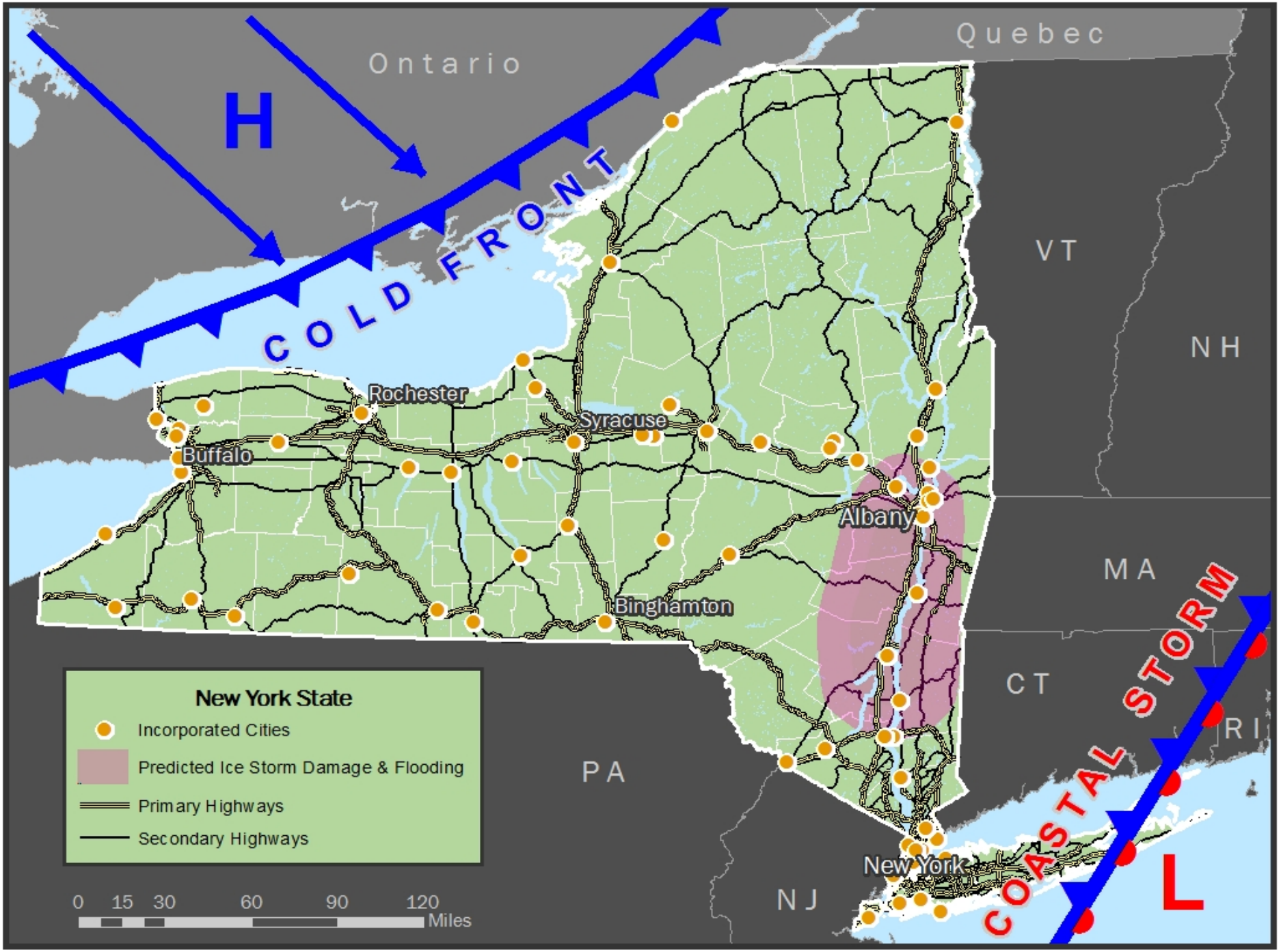
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COLD FRONT
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Buffalo
Albany
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New York
COASTAL STORM
L
New York State
Incorporated Cities
Predicted Ice Storm Damage & Flooding
Primary Highways
Secondary Highways
0 15 30 60 90 120
Miles

Wednesday Evening, November 27th 2013

- Cold air comes in after midnight;
- Instead of snow ice forms and covers back roads and some highways
- The wind increases causing tree limbs to snap
- Widespread power outages occur
- More roads become impassable because of ice, tree limbs, etc. down.
- The Albany “International” Airport closes

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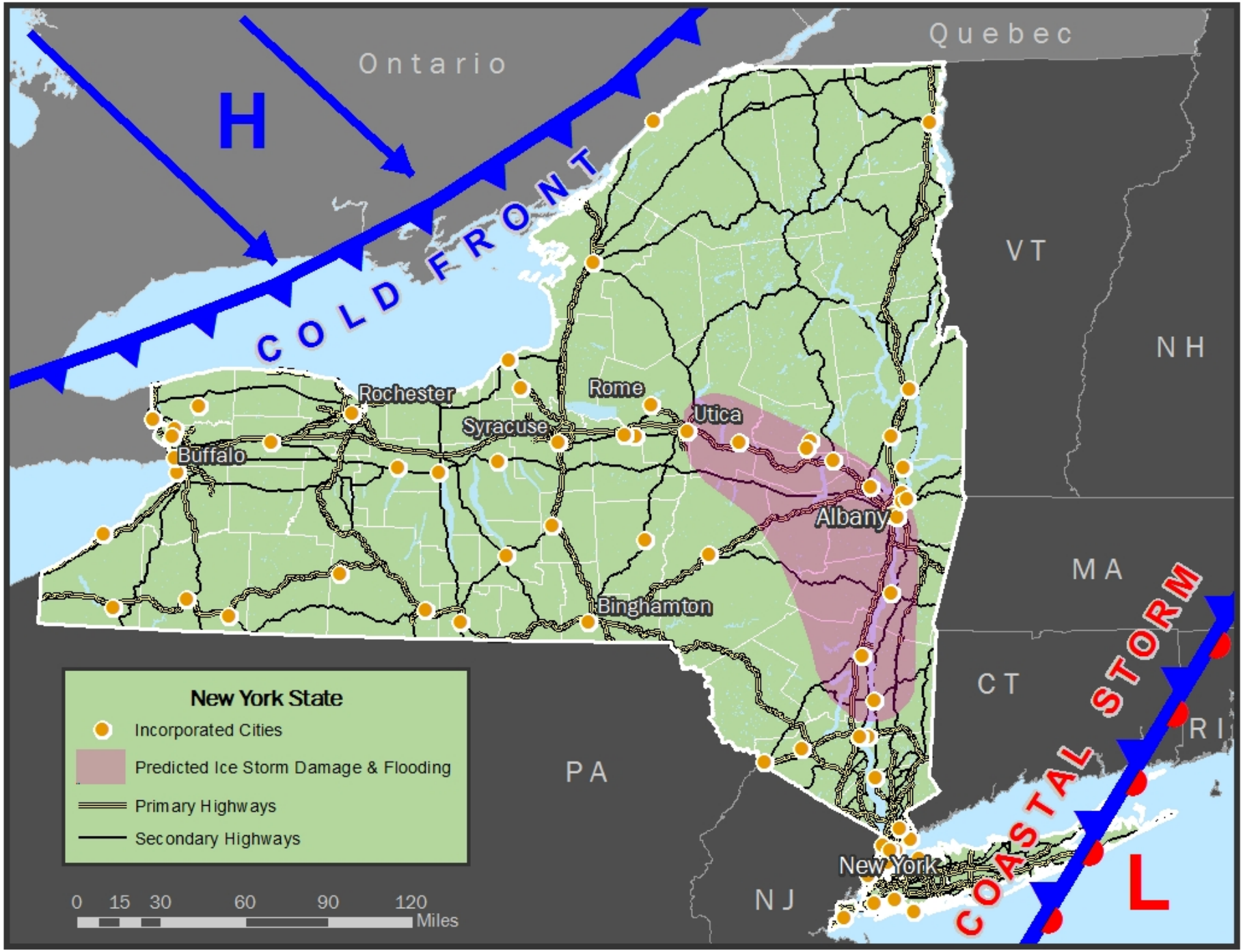
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Incorporated Cities
Predicted Ice Storm Damage & Flooding
Primary Highways
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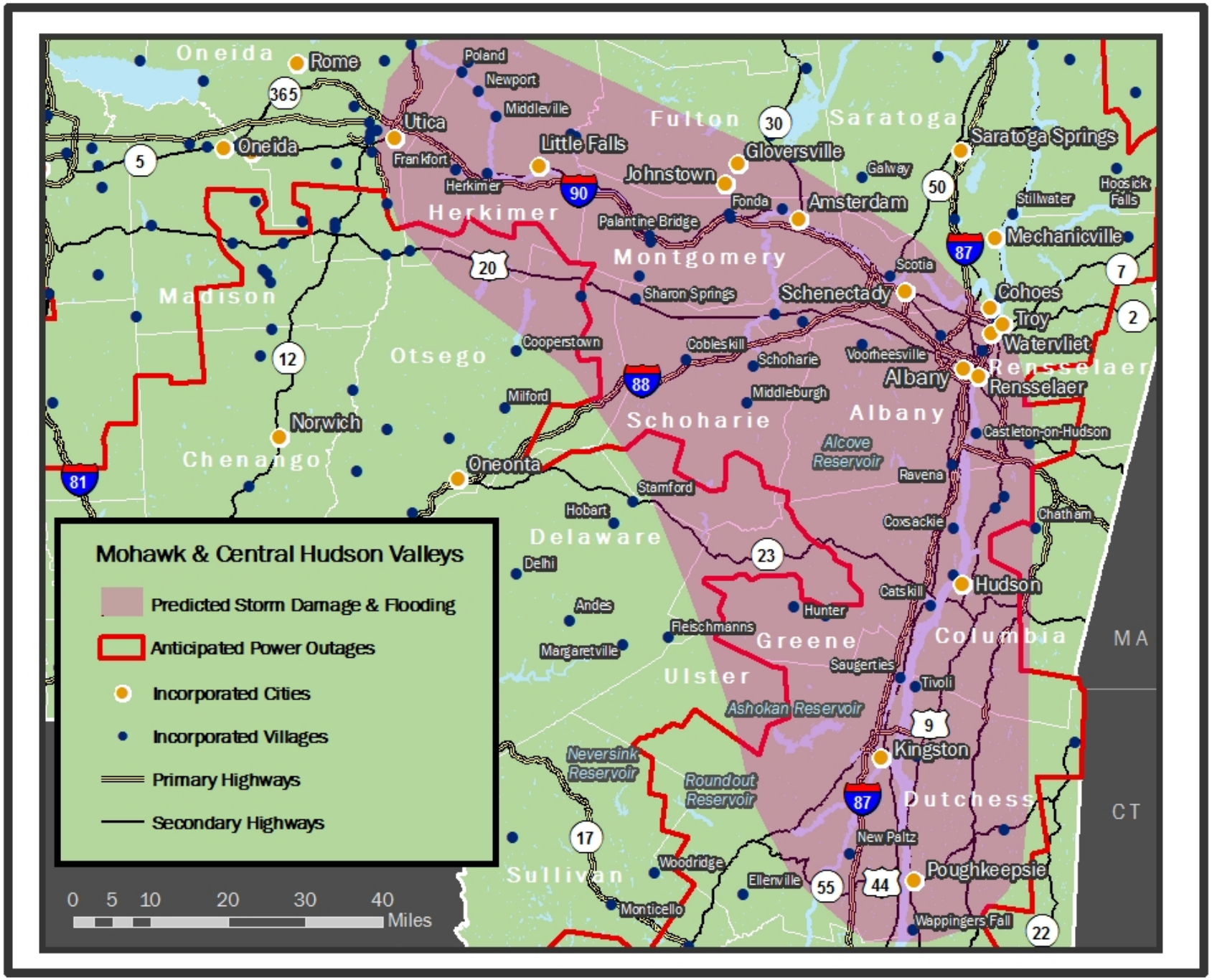
Mohawk & Central Hudson Valleys
Predicted Storm Damage & Flooding
Anticipated Power Outages
Incorporated Cities
Incorporated Villages
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Poland
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Fulton
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Johnstown
Galway
Saratoga Springs
Hoosick Falls
Stillwater
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Amsterdam
Palantine Bridge
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Scotia
Schenectady
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Cooperstown
Cobleskill
Schoharie
Voorheesville
Middleburgh
Milford
Norwich
Chenango
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Ravena
Oneonta
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Coxsackie
Chatham
Delaware
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Tivoli
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Roundout Reservoir
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Ellenville
Poughkeepsie
Sullivan
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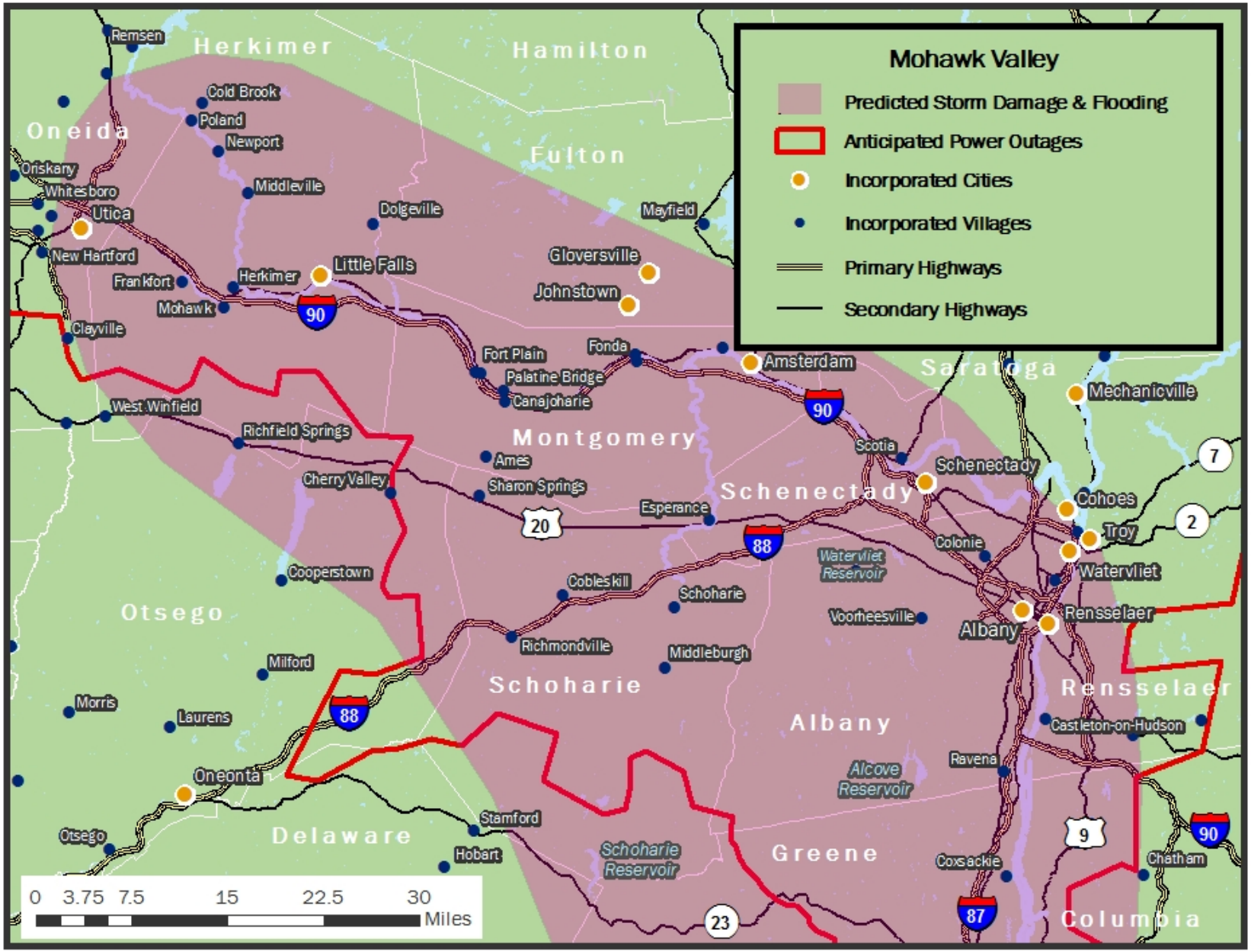
Mohawk Valley
Predicted Storm Damage & Flooding
Anticipated Power Outages
Incorporated Cities
Incorporated Villages
Primary Highways
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Oriskany
Whitesboro
Utica
Middleville
Dolgeville
Mayfield
New Hartford
Frankfort
Herkimer
Little Falls
Gloversville
Johnstown
Mohawk
Clayville
Fort Plain
Palatine Bridge
Canajoharie
Fonda
Amsterdam
Mechanicville
West Winfield
Richfield Springs
Ames
Cherry Valley
Sharon Springs
Esperance
Scotia
Schenectady
Cohoes
Troy
Colonie
Watervliet
Watervliet Reservoir
Cooperstown
Cobleskill
Schoharie
Voorheesville
Albany
Rensselaer
Richmondville
Middleburgh
Milford
Morris
Laurens
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Castleton-on-Hudson
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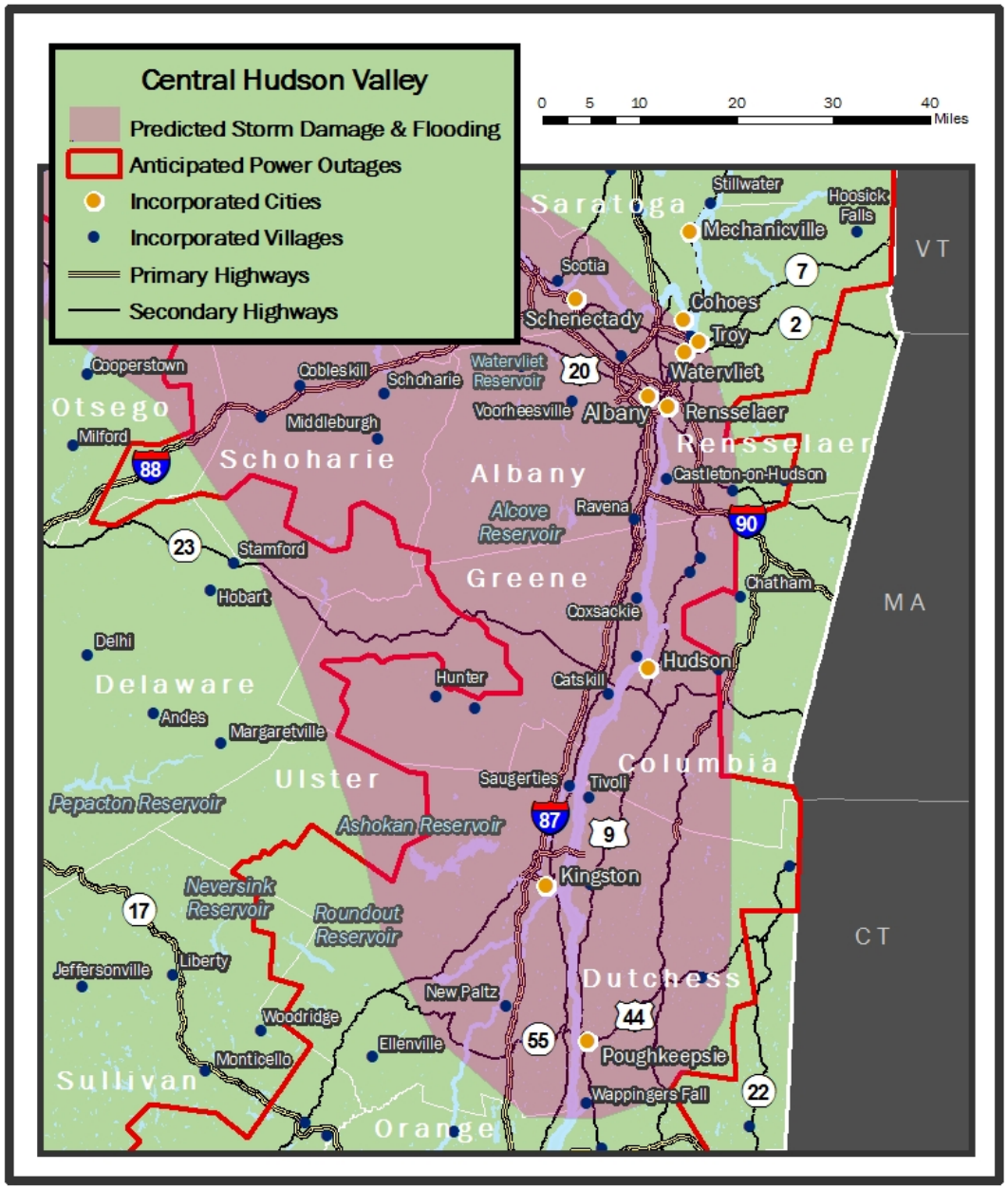

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Thursday, November 28th 2013

- The cold front slides north
- Rain resumes and more flooding occurs
- Parts of the Thruway, I-90 and many local roads are closed
- Thursday night - more ice
- The Stewart "International" Airport closes

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Friday, November 29th 2013

- More rain and flooding
- Late that day another cold front comes in and pushes the coastal storm out to see
- Friday night is clear and very cold
- More icing occurs

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Saturday, November 30th 2013

- It remains clear and very cold
- Reports of some flat building roofs (big box stores) collapse under the weight of the ice

Sunday, December 1st 2013

- More of the same
  - It remains clear and very cold
  - Reports of more flat building roofs (big box stores) collapsing under the weight of the ice

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Questions

- What are the major issues?
  - Audience?
  - Panel?
- What are the major needs?
  - Audience?
  - Panel – Are we missing things?
- How could GIS Help?
  - What "GIS driven" information should be provided?
  - Who needs that information?
  - How do you see that information being best provided?

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Questions

- What are the missing pieces?
  - Panel – Who normally does what & how (at the Federal, State, County and Local Governments)
  - Audience – Are their missing pieces?

- What does the public need to know?
  - Audience – What does the public need to know? What is the best way to get them that information?

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JUST WHEN YOU THOUGHT YOU HAD ALL THE ISSUES NAILED!

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ZOMBIES!

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THANKS FOR COMING!

We hope gained knowledge and had fun doing it!

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