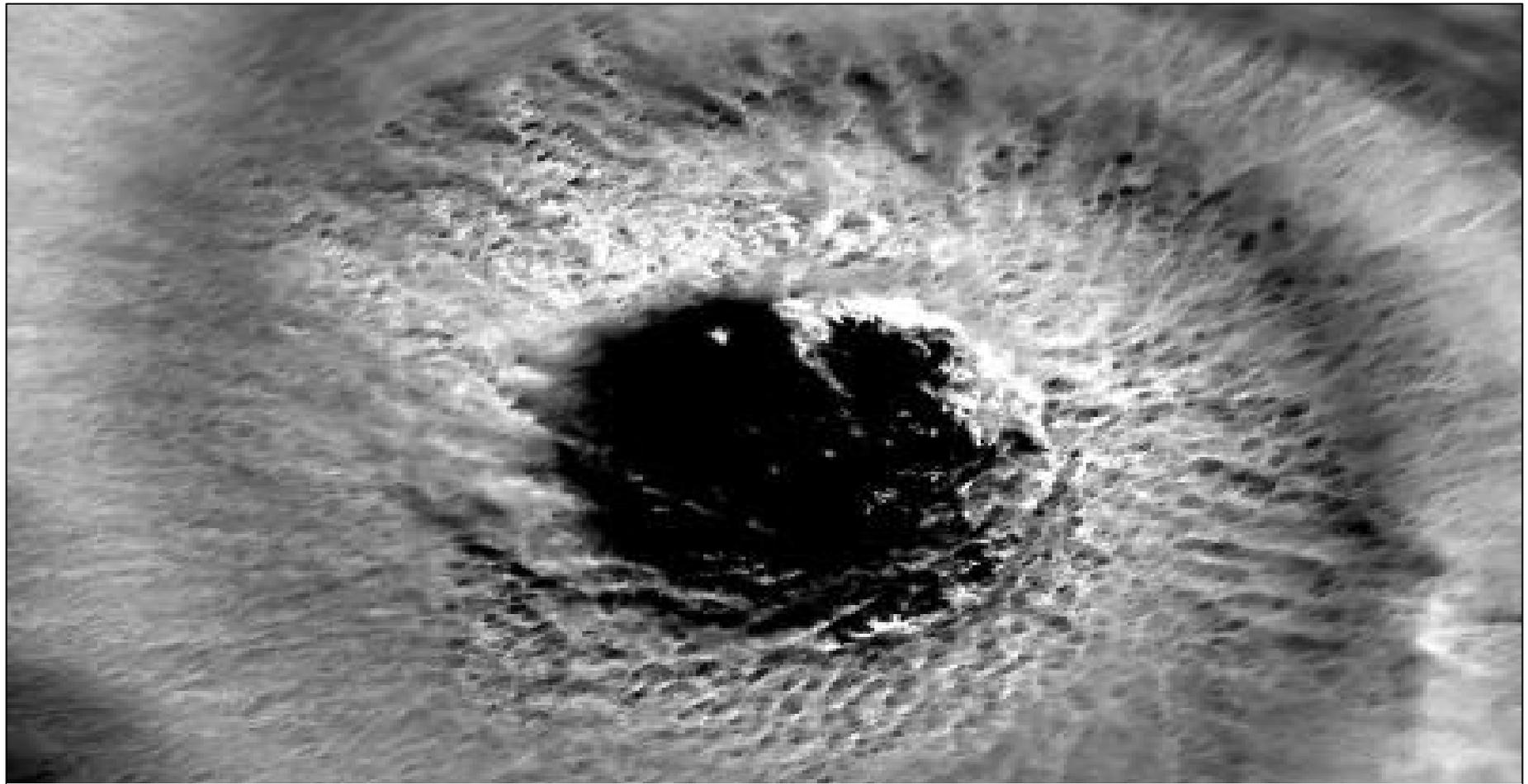




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GSA Training



GSA Disaster Preparedness – Spring 2010

Public Buildings Service

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- Atlantic Season: June 1 – November 30
- Eastern Pacific Season: May 15 – November 30
- The Atlantic hurricane season outlook is an official product of the National Oceanic and Atmospheric Administration (NOAA) released May and August
 - http://www.cpc.noaa.gov/products/expert_assessment/
 - A guide to the expected overall nature of the upcoming hurricane season
 - A guide for large businesses, corporations, financial markets, governments, and industries to better prepare for and manage the potentially significant risk posed by hurricanes.

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Critical Elements

- High Winds
- Power Lines
- Storm Surge
- Debris
- Environmental Hazards
- Lack of Services

Lessons Learned From Katrina/Wilma

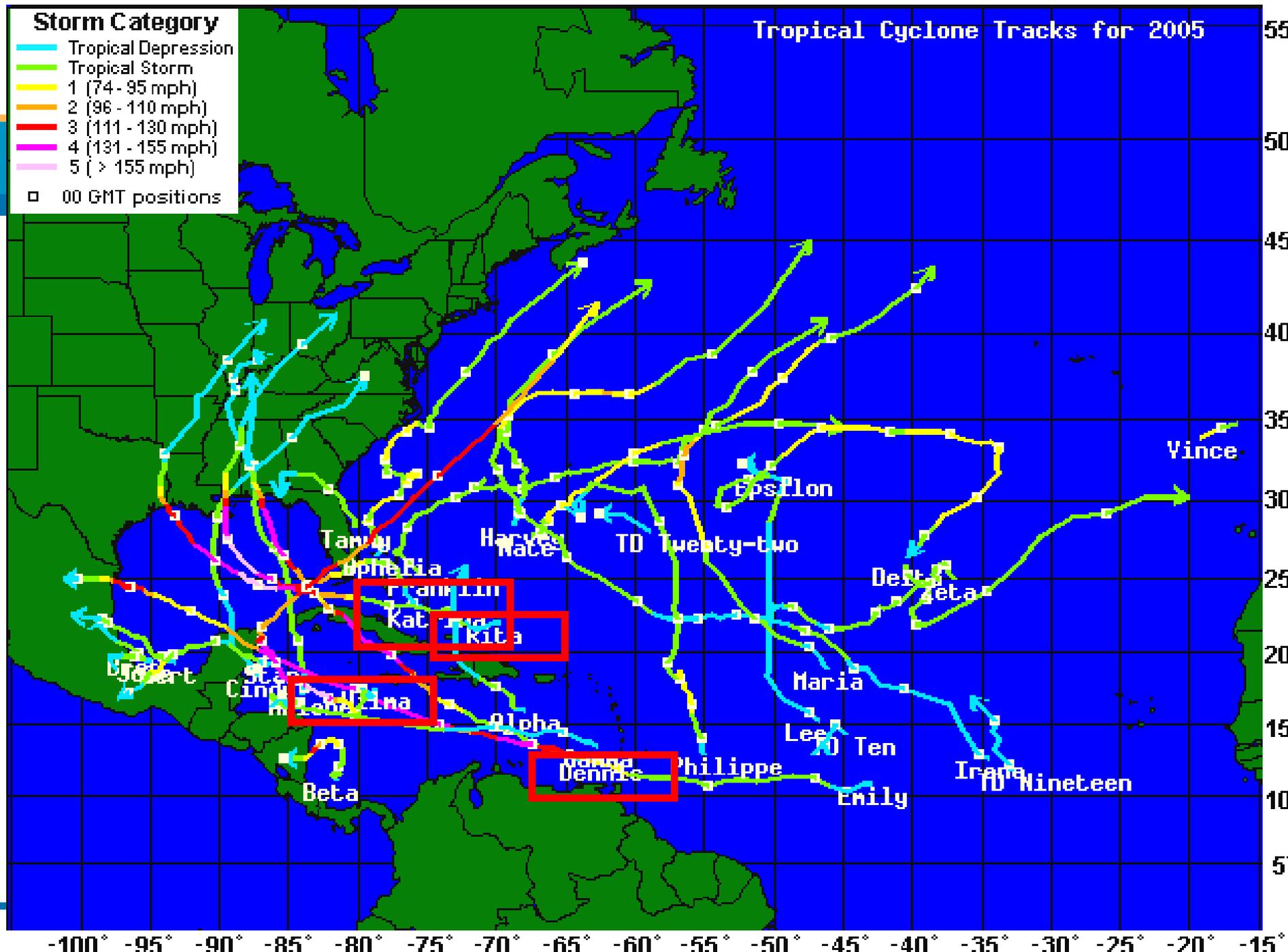
- How to Prepare
- How to Respond



Storm Category

- Tropical Depression
- Tropical Storm
- 1 (74 - 95 mph)
- 2 (96 - 110 mph)
- 3 (111 - 130 mph)
- 4 (131 - 155 mph)
- 5 (> 155 mph)
- 00 GMT positions

Tropical Cyclone Tracks for 2005



- Hurricane-force winds can easily destroy poorly constructed buildings and mobile homes.
- Signs, roofing material, and small items left outside become flying missiles in hurricanes.
- Extensive damage to trees, towers, water and underground utility lines (from uprooted trees), and fallen poles cause considerable disruption.
- High-rise buildings are vulnerable to hurricane-force winds, particularly at the higher levels since wind speed tends to increase with height. It is not uncommon for high-rise buildings to suffer a great deal of damage due to windows being blown out. Consequently, the areas around these buildings can be very dangerous.

High Winds

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- When a hurricane watch is issued for your community, secure or bring inside all furniture and other outside objects that could become a projectile in high winds.
- Once a hurricane warning is issued, install plywood panels over windows.
 - If your building is made from concrete or masonry blocks, you will have to install anchoring devices in advance.
 - Save/Store plywood onsite for future reuse as supply is very limited when a hurricane is approaching

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- Before the storm utility providers generally shut down substations. This minimizes damage and the time to return to normal operation.
- After the storm, local utility companies have a hierarchy to re-establishing power: hospitals, fire/rescue locations, central business district, neighborhoods, etc.
- **It is important to note that any power line after a storm should be treated as live.**

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Storm surge is water that is pushed toward the shore by the force of the winds swirling around the storm. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level 15 feet or more.



- Waves and currents also cause extensive damage. Water weighs approximately 1,700 pounds per cubic yard; extended pounding by frequent waves can demolish any structure not specifically designed to withstand such forces.
- The waves and currents can severely erode beaches and coastal highways. Many buildings withstand hurricane force winds until their foundations, undermined by erosion, are weakened and fail.
- There is always uncertainty about how intense the storm will be when it finally makes landfall. A rule of thumb for emergency managers is to plan for a storm one category higher than what is forecast.

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Perdido Bay, Pensacola, FL. Debris from Barrier Islands



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ATF - Edgewater Office Plaza Biloxi, MS



Progressive Collapse

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Within the FEMA declared Disaster Area

- 189 leased-locations
 - 3.4 million rentable square feet
- 14 GSA-owned locations
 - 1.8 million square feet
- 10 leased buildings were damaged enough to remain closed

Within the FEMA declared Disaster Area

- 203 leased-locations - 3.2 million rentable square feet
- 11 GSA-owned locations - 1.2 million square feet
- 4 leased buildings were damaged enough to remain closed

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Hurricane Rita Compounded Effects from Katrina

11:40AM EDT 31-AUG-2005



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accuweather.com

5:59PM EDT 26-SEP-2005



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- The “little black line” tracking the hurricane’s path is an **ESTIMATE**
 - Begin preparations for all buildings in the cone of danger
- The Fire, Police, and Emergency services are “pulled” at 39 MPH
 - GSA begins building preparation so as to ensure all preparedness team members are “pulled” and in a safe area when 39 MPH arrives

- Agency associate accountability is a first priority
 - Internal agency COOP calls
- The amount of indirect deaths is almost three times the amount of direct deaths, and 57% of those are from inland flooding
 - Await water levels to recede and weather conditions to subside before attempting to assess

- Access to the buildings is often impeded by surge, debris, or lockdowns
 - Allow water level to recede before attempting to assess
 - Prepare alternate paths to access buildings
 - Maintain downtown access badges
 - Obtain four-wheel drive vehicles and bring extra gasoline
 - GPS devices provide directions when street signs have been destroyed
- Communication is difficult during and after the hurricane
 - Blackberry SMS/text communication works best
 - Pre-formed assessment teams and alternates

- Assessments should cover a wide variety of possible damages
 - Checklists for all initial and subsequent assessment member teams ensures completeness
- Security and safety are issues that are ever-present
 - Institute a minimum of two members per assessment team

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Contracting Tools:

- IDIQ contracts in place with construction firms
- Contracts in place with drying contractors
- 8a contractors identified
- Identified equipment types and quantities to procure and pre-position
- Generators located and pre-positioned



Utility Disruption:

- Obtain contact information – including cell phone numbers
 - Utility providers
 - Municipal and state emergency response agencies
 - Vendor representatives
- Back-up utility service documentation
- Identify water and gas line shutoff valves

Data Sharing:

- Updated local agency representative and lessor emergency contact information
- Building assessment standardization and technology
- All STAR/Billing data tied to assets
- Building drawings
- Updated local agency rep and lessor emergency contact information
- Building assessment standardization and technology
- All STAR/Billing data tied to assets
- Building drawings

Temporary Housing

- Identified sources for modular units and RVs to use during disasters
- GSA associates located at the modular unit source will inspect prior to shipping to ensure quality control.

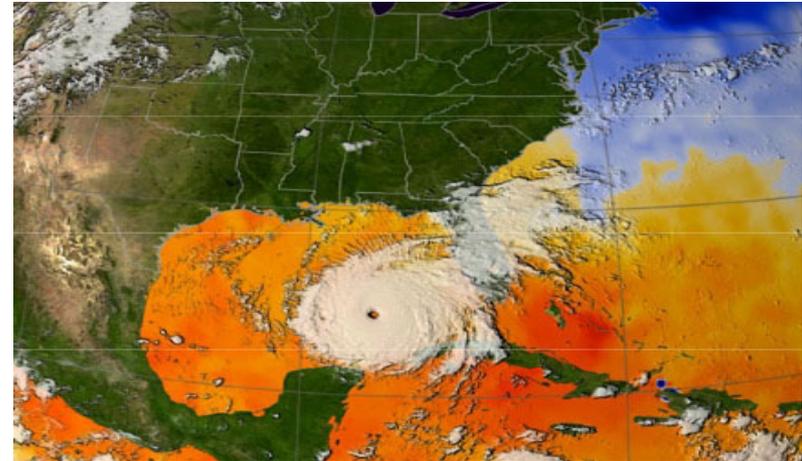


Personal Property:

- Agency personal property can and will be discarded if in the path of recovery.
- GSA and/or lessors not responsible for replacement of agency personal property.
- When conditions allow, post-storm arrangements for retrieval of personal property will be coordinated with local agency contact.

Technology:

- GPS
- Satellite Communications (COWS)
- Notepads
- Digital Cameras
- Blackberries
- Fly-away kits



Safety and Environmental:

- Associate accountability plan
- PHS contract for assessment
- IDIQ contract for abatement
- Written guidance for administration of health and safety measures for responders (immunizations, clothing)

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- Roofs
- Grounds
- Loading Docks
- Elevators
- Power
- Gas
- Water
- Generators
- HVAC
- Fire/Life Safety
- BAS
- Computer Rooms
- Security
 - Access Control
 - Personnel
 - Cameras
 - Exterior Doors

Creating an emergency preparedness plan:

- Identify objects within the building envelop that would need to be removed, stored or secured (e.g., trash cans, site furniture, materials stored on roof or loading docks, playground toys or equipment)
- Identify doors and windows that would need to be boarded over or taped to reduce flying glass in event of breakage

Creating an emergency preparedness plan:

- Identify additional building elements that may warrant special attention such as roofing materials, flashing and coping materials, roof vents and air intakes, awnings, gutters and downspouts, roof-mounted, post-mounted or suspended signage, free-standing equipment and siding materials.
- Review local evacuation procedures and identify agency that will issue evacuation order
 - **Note: Once local authorities have issued evacuation orders, PBS facilities cannot be used as shelters**

Creating an emergency preparedness plan:

- Determine how the evacuation order will be communicated
- Begin preparations for a possible shutdown and evacuation of your building when a hurricane watch is issued, **DO NOT** wait until a warning is issued; it may be too late
- Make certain all of your tenants are aware of the building evacuation procedures in the event of a hurricane
- Develop a system to notify tenants of building status after storm

- Prevent flood damage: move computers, critical files and electronic equipment out of basements. Coastal regions, even those that seem sufficiently away from water, are at risk of localized flooding caused by tidal surges and consequential rising of the water table
- HVAC: Keeping the building pressurized as long as possible reduces the possibility for “inviting” in the water
- Elevators: All major manufacturers recommend that elevators are shunt tripped on an upper floor when there is threat of surge

- Have a backup power generator. Power outages could last weeks, which means air-conditioning systems would be shut down. This, coupled with water infiltration, can lead to a mold problem
 - Ensure it is filled to capacity throughout hurricane season
- In some buildings, emergency power sources (generators) are in below grade areas (basements). Emergency power sources should be situated above grade to avoid flooding.

- Cover Computers
- Protect Personal Items
- Important Paperwork/Documentation
- Computer Backup
- Close Interior Doors

- City Opens to Initial Assessment Teams
- GSA conducts preliminary damage assessments
- If the facilities are found to be safe and secure, essential personnel are contacted and invited to tour agency-critical areas (i.e.: computer rooms)

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- If the facilities have sustained damage, GSA will deploy the first responder teams to conduct detailed assessments, including engineers, A/E Firms, Industrial Health, & Realty Specialists..
- Facility Reopening Plans/Temporary Space Needs
 - Structural soundness
 - Environmental soundness
- Status of Opened and Closed buildings are:
 - Posted on GSA websites
 - Distributed through emails
 - Discussed on conference calls

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- No Public Utilities
- No/Limited Access (flooding, debris)
- Damage/hazards that would pose a safety risk for tenants/visitors
- Curfews/Marshal Law-mandatory evacuation