

Sandy Geospatial Response and the FEMA GeoPortal



FEMA

Pre-Storm Preparation

- USGS

- USGS deployed hundreds of storm surge sensors to measure depth of water at structural level
- Included real-time surge, rapid-deployment gages
- These sensors provided a real-time assessment as the storm made landfall

- Civil Air Patrol (CAP)

- National Geospatial-Intelligence Agency (NGA)

- NOAA



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Pre-Storm Preparation

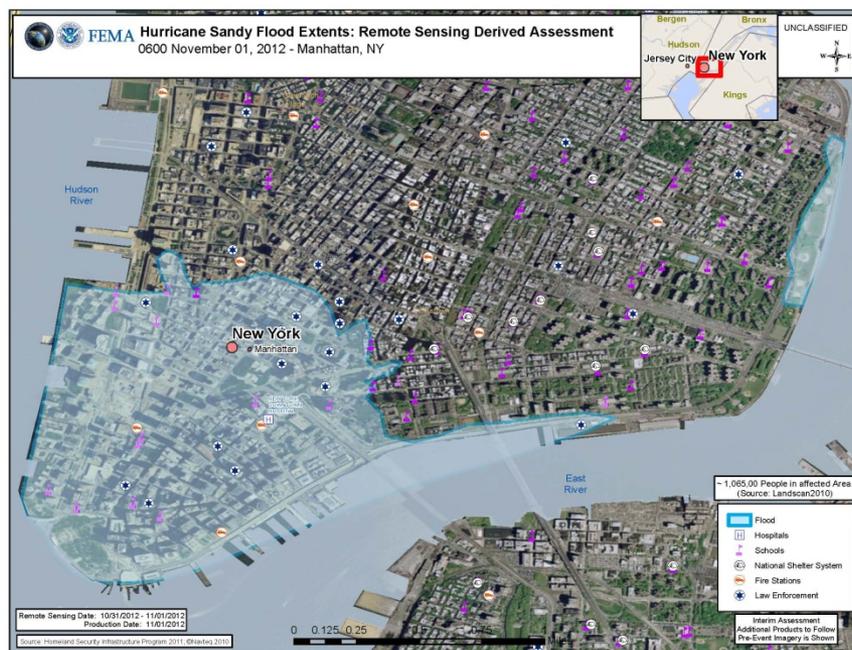
- Modeling Task Force (MOTF) prepared predictive storm surge models
- FEMA Geospatial Coordinators and HIFLD representatives contacted state agency GIS personnel to assure GeoPortal access



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Sandy Response

- Predicted Surge models were refined using:
 - Sensor data
 - 850 High Water Marks collected by USGS, and
- NGA Imagery collected while flood waters still high
 - GSA digital analysis to confirm actual extents of flood



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Sandy Response – CAP Flights

- CAP flights to take oblique geo-tagged aerials of most impacted areas
 - Surge models were used to help direct to specific areas initially
 - In air within 24 hours of storm
 - Over 157,000 geo-tagged images captured
 - Over 650 sorties flown
 - Over 250 personnel, including headquarters staff, were in support



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Sandy Response

- Structural Assessments (ImageCAT) from imagery and inundation information
 - 44,000 delivered within 72 hours of notice to proceed
 - 147,000 individual structural assessments in total
- Geospatial Structural Assessments were used to:
 - Deliver expedited assistance to >44,000 applicants for temporary shelter assistance
 - Determine priorities for Housing Inspection teams
 - Direct operational forces to be concentrated on most impacted areas allowing a stretched response effort to maneuver without wasting man-hours or effort
 - Determine potential long-term housing requirement priority areas to support IA Housing planning efforts in NJ/NY



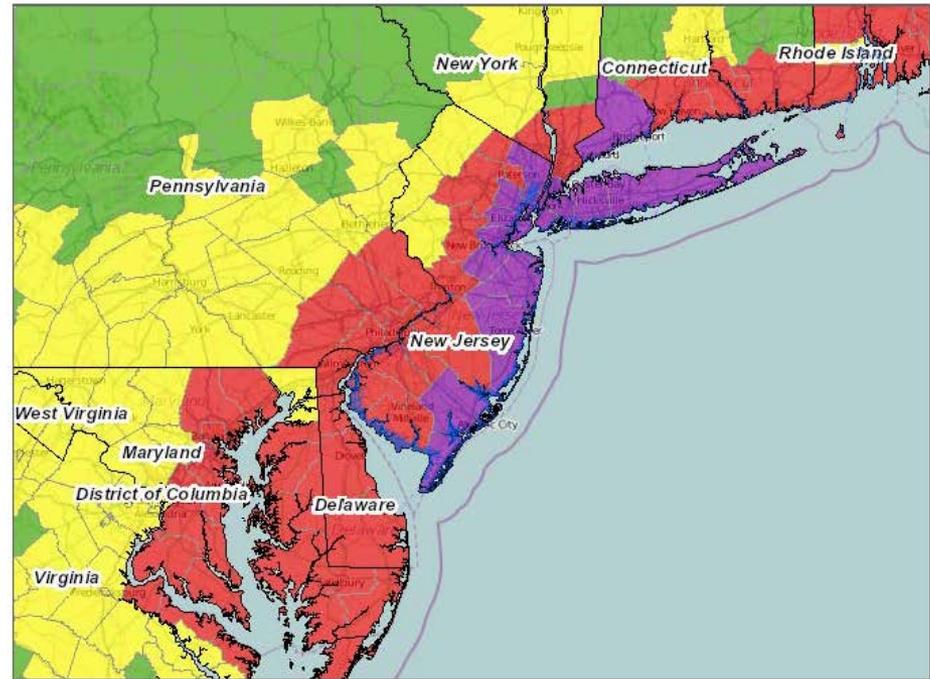
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FEMA MOTF – Hurricane Sandy Impact Analysis

- Data Available:
 - NYC Evacuation Zones
 - USGS Tide Gages
 - USGS Storm Tide Sensors/Loggers
 - USGS Real-Time Surge/Rapid Deployment Gages
 - USGS Sandy Storm Surge Wave Heights
 - USGS Sandy High Water Marks
 - Nor'easter Surge Potential 11072012
 - High Resolution Storm Surge Extent
 - Medium and Low Resolution Storm Surge Extent
 - Hurricane Sandy Impact Analysis

FEMA MOTF-Hurricane Sandy Impact Analysis

FEMA MOTF-Hurricane Sandy Impact Analysis



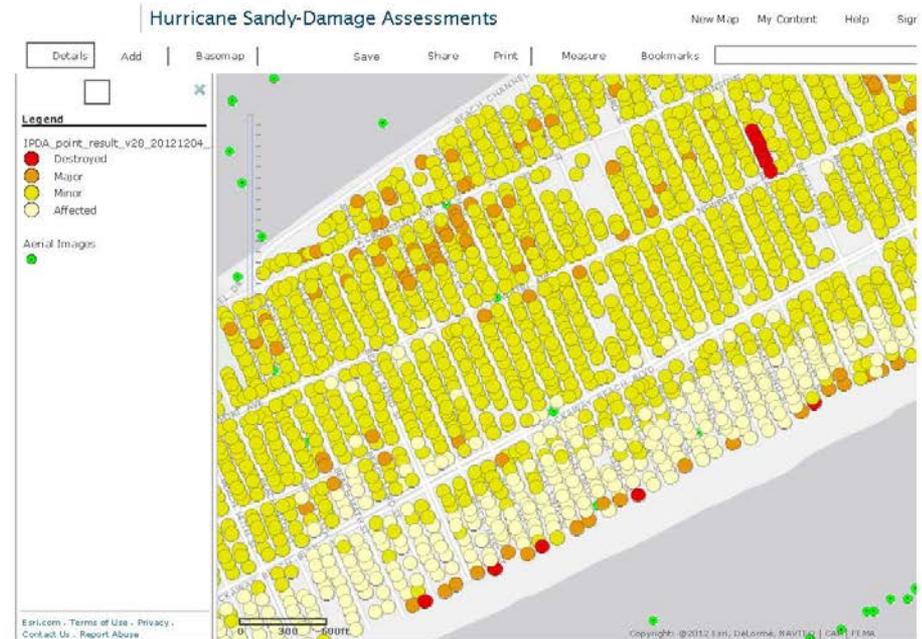
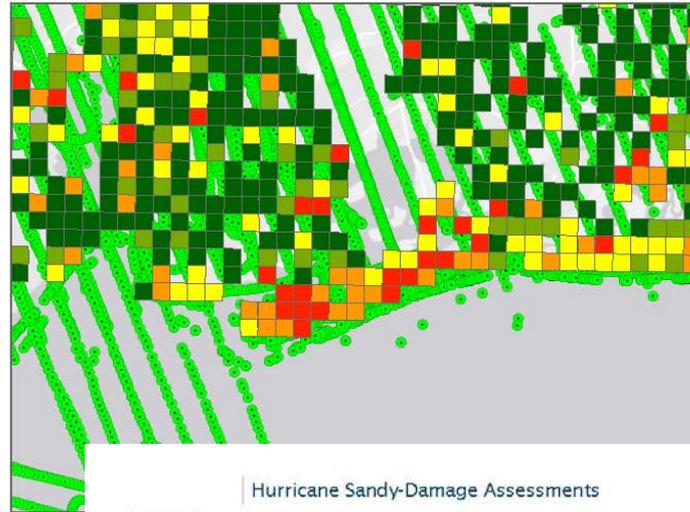
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Hurricane Sandy Damage Assessments

- Data Available:
 - Damage Assessments , averaged in US National Grid
 - Imagery-based Preliminary Damage Assessments (PDA)
 - CAP Images
 - Surge Extent

Hurricane Sandy-Damage Assessments

Analysis associated with imagery products reflect an ongoing work product and do not represent a final determination of eligibility or damage classification.



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Find Your Home

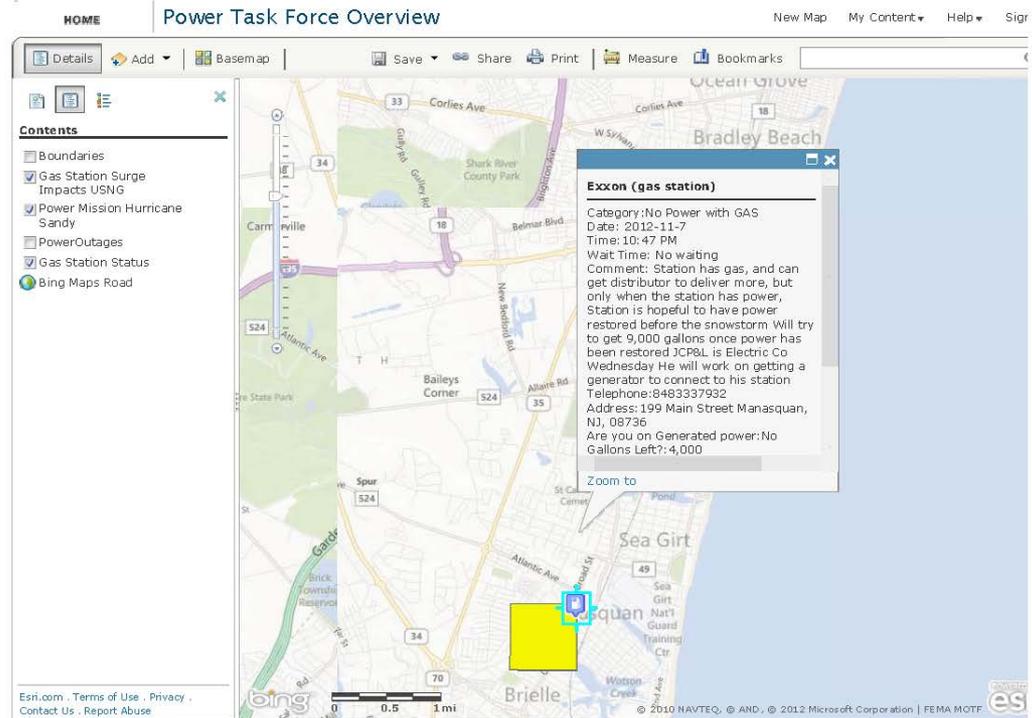
- Application Developed within 48 hours of request
- Leveraged NOAA imagery, BING base maps and CAP imagery
- Developed so people who could not go to their homes could see them
- Typing in address marks NOAA image (with underlying map)
- Click on green CAP image dot to see thumbnail image
- Click on thumbnail to see larger image



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Power Task Force Overview

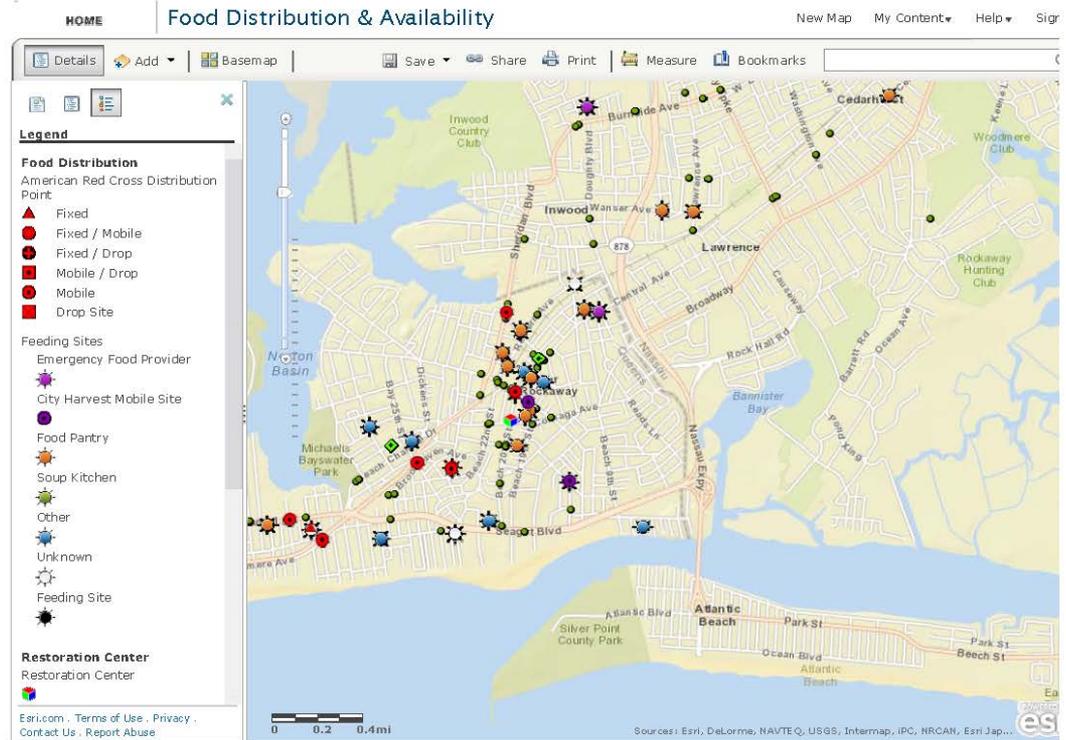
- Data Available:
 - Gas stations impacted by storm surge (by USNG)
 - Power Missions (emergency generators)
 - Power Outages (by county)
 - Data was initially hard to get
 - Oakridge National Labs
 - NY State has mandated that State utility outage maps be integrated into uniform state wide coverage
 - Gas Station Status
 - Experimental
 - Used crowd-sourced data through different groups and Hess



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Food Distribution & Availability

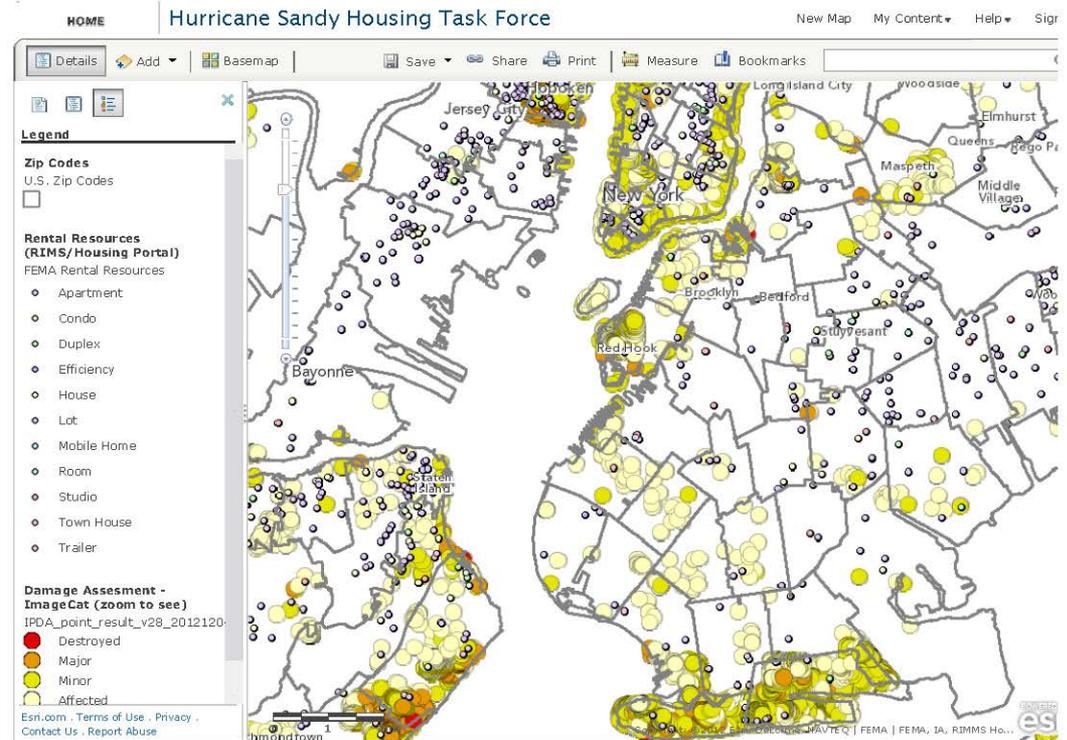
- Data Available:
 - Food Distribution (Red Cross)
 - Disaster Recovery Centers
 - Restoration Center
 - TSA Hotels
 - Retailer Participating in SNAP (Supplemental Nutrition Assistance Program)
 - DSNAP (Disaster Supplemental Nutrition Assistance)



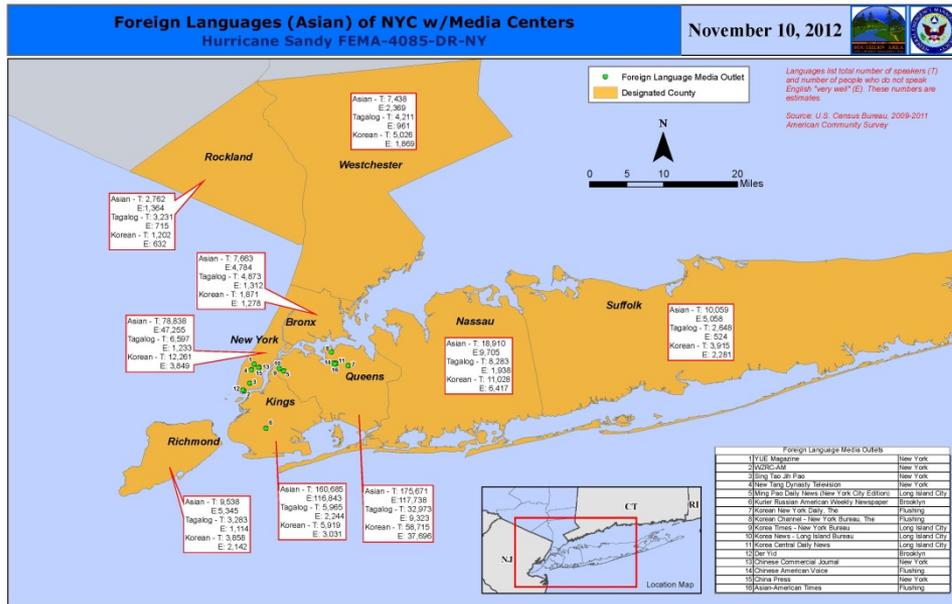
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Hurricane Sandy Housing Task Force

- Data Available:
 - Zip Codes
 - Queens Warehouse Locations
 - NY USNG IA (Individual Assistance) Registrations
 - NY/NJ Parks
 - NY and NJ Campgrounds and RV Parks
 - Rental Resources (FEMA RIMMS Database)
 - NY Population Analysis (Percentage of Population in Surge) by County+



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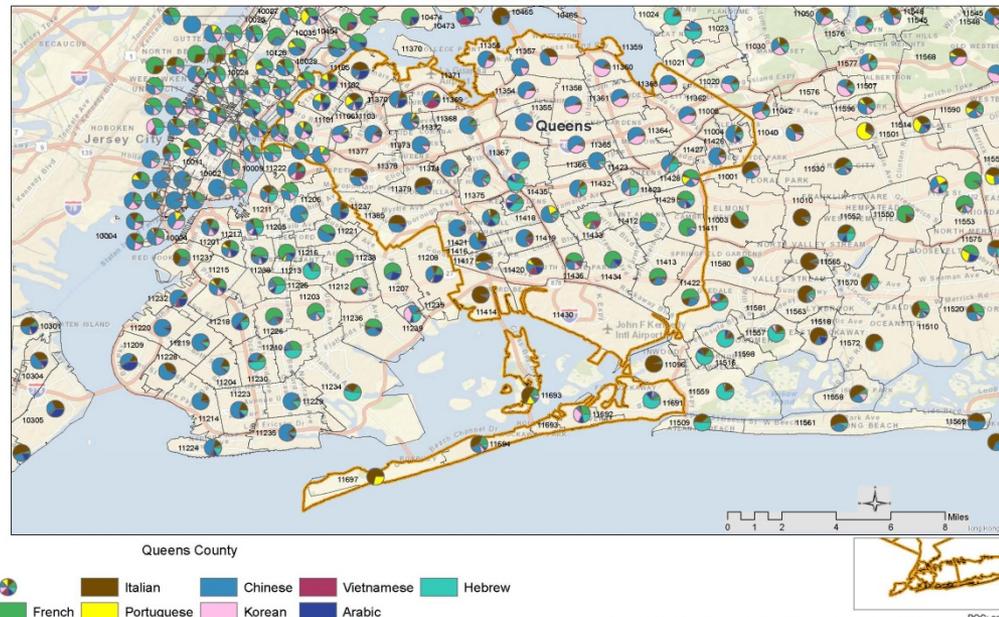


Language Maps

- FEMA Community Relations staff provide information in 20 languages
- Flyers need to be stocked in appropriate languages for neighborhoods being canvassed
- US Census American Community Survey samples population yearly, includes question on language spoken at home
- Maps ensure that people who need information in a specific language get what they need.



Languages by Zip Code
FEMA-4085-DR-NY



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