

# NTHMP Partner 101

## U.S. Territory of Guam

May 12, 2021



Leo Rustum J. Espia  
State Hazard Mitigation Officer



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# Partner Agencies

- NOAA / NWS Guam WFO
- DHS / FEMA
- Department of Defense
  - Joint Region Marianas
  - Naval Base Guam
  - 36<sup>th</sup> Wing, Anderson Air Force Base
  - Marine Corps Activity Guam
- US Coast Guard Sector Guam
- Non-Profit Organizations and Private Sector Partners
  - Guam VOAD
  - GHRA
- USACE Honolulu Engineer District
- Tsunami Ready / Storm Ready Committee
- Guam Seismic Advisory Council
- Hazard Mitigation Advisory Council
- Guam Building Code Council
- University of Guam
  - Water and Environmental Research Institute of the Western Pacific
  - College of Engineering
- Guam Silver Jackets Member Organizations
- GovGuam Agencies



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# Program Goals

## Hazard and Risk Assessment

- Threat and hazard assessments, all hazards, support strategic planning and the Unified Coordination Group (UCG)
- Implementation of risk mapping discovery and related risk assessment initiatives

## Tsunami Education and Preparedness

- Enhanced community engagement
- Expansion and sustainment of Tsunami Ready communities
- Adoption of multi-year and integrated EM planning, training and exercises

## Mitigation and Recovery

- Potential mitigation actions are incorporated in the mitigation strategy
- Restructure the Recovery Coordination Office

## Alert Warning and Response

- Enhanced capability of the Watch Office / Territory Warning Point
- Redundant tsunami alert warning capability
- PTWC products and NWS Guam WFO forecasts are understood



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# FY2018 NOAA/NWS Tsunami Activities Grant

- FY2018 NOAA/NWS Tsunami Activities Grant –
  - POP has been extended to August 31, 2021
  - Tasks have been completed
  - Ready for closeout



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# FY2020 NOAA/NWS Tsunami Activities Grant

## Task 1 - Tsunami Hazard Maps for Pago Bay Guam\* -

- UH is anticipated to request for a no cost extension

## Task 2 - Collaboration between NTHMP members with PRiMO\*\*

- If face-to-face, Guam is hosting PRiMO this year; Will request for reprogramming to support public outreach and community education

## Task 3 - Collaboration between NTHMP members with CNMI HSEM

## Task 4 – Update and printing of Guam’s Tsunami Evacuation Maps

## Task 5 – Improve community awareness and education on preparing for and responding to Tsunamis

## Task 6 – Maintenance of TsunamiReady Program and sustaining warning dissemination

## Task 7 - Travel to attend NTHMP Meetings, EM Representative\*\*\*

- Probably virtual meetings; Will request for reprogramming to support public outreach and community education

## Task 8 - Travel to attend NTHMP Meetings, Science Representative\*\*\*

- Probably virtual meetings; Will request for reprogramming to support public outreach and community education

## Task 9 – Technical assistance on Guam Tsunami Program and various aspects of Guam’s hazards and risk mapping and modeling\*\*\*

- Anticipated to request for a no cost extension

## Challenges:

- Guam is still in Pandemic Condition of Readiness 1
- Mandatory quarantine, stay at home orders, and restriction of movement
- Local procurement and contract signing



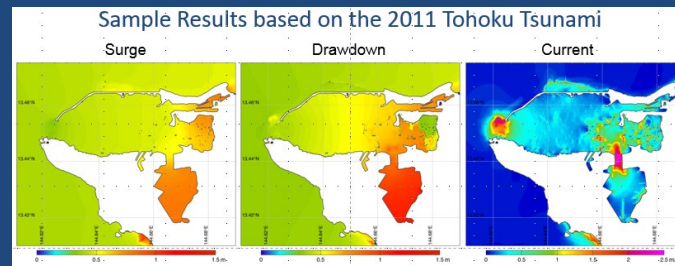
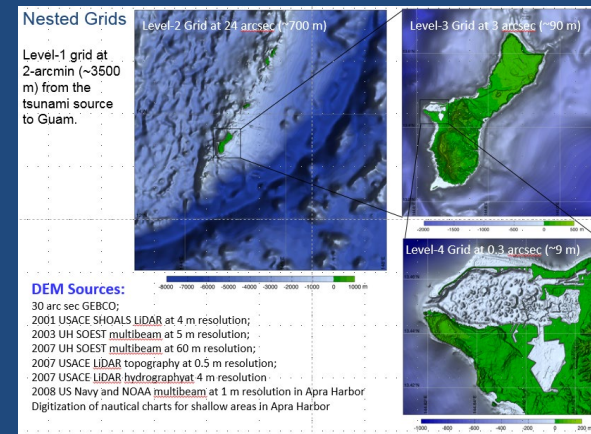
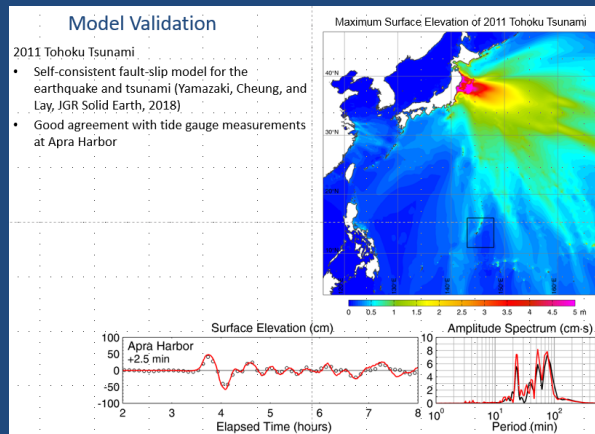
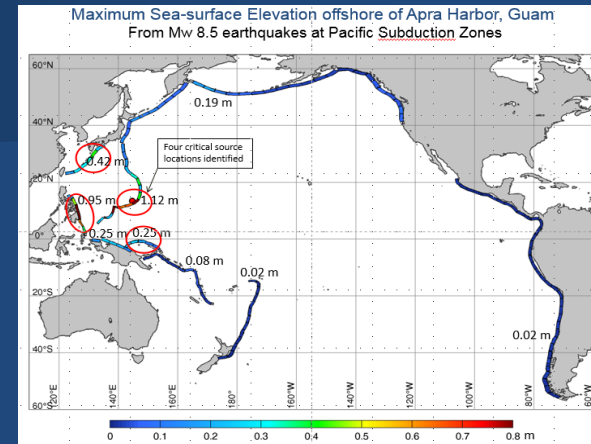
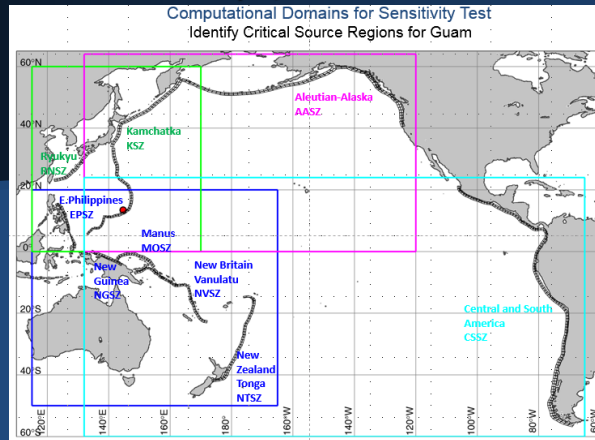
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# Proposed FY2021 NOAA/NWS Tsunami Activities Grant

## Task 1 - Tsunami Hazard Maps, NeoWave Modeling –



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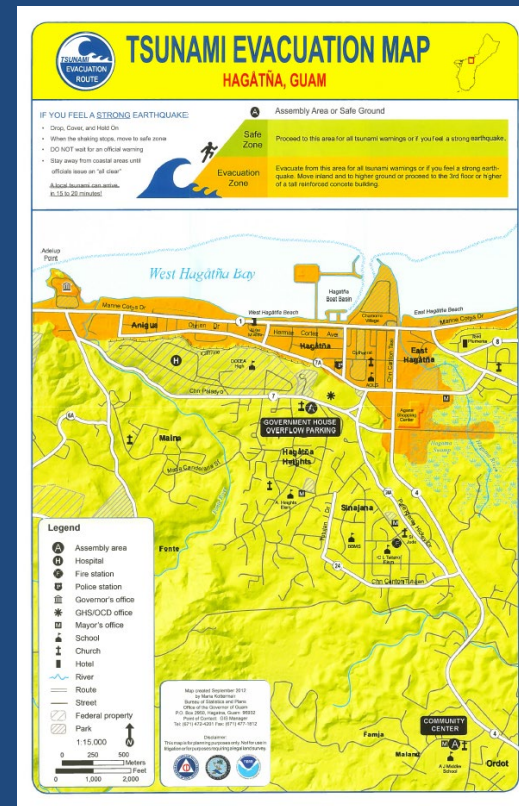
# Proposed FY2021 NOAA/NWS Tsunami Activities Grant

Task 2 – Social science in Tsunami Evacuation Plan

Task 3 - Collaboration between NTHMP members with PRiMO

Task 4 - Collaboration between NTHMP members with CNMI HSEM

Task 5 – Update and printing of Guam's Tsunami Evacuation Maps



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# Proposed FY2021 NOAA/NWS Tsunami Activities Grant

Task 6 – Improve community awareness and education on preparing for and responding to Tsunamis



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# Proposed FY2021 NOAA/NWS Tsunami Activities Grant

## Task 7 – Maintenance of TsunamiReady Program and sustaining warning dissemination



Task 8 - Travel to attend NTHMP Meetings,  
EM Representative

Task 9 - Travel to attend NTHMP Meetings,  
Science Representative

Task 10 – Technical assistance on  
Guam Tsunami Program and  
various aspects of Guam's hazards and  
risk mapping and modeling



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# Proposed FY2021 NOAA/NWS Tsunami Activities Grant

## Proposed Activities

- National Preparedness Month – September 2021
- Great Guam ShakeOut – October 2021
- Earthquake Preparedness Week – Week of August 8, 2021
- World Tsunami Day – November 2021
- Tsunami Preparedness Week
- Pacific Wave Exercise
- Development of Tsunami Safety Products
- Enhancement of Tsunami Preparedness Web Page in partnership with the Whole Community Preparedness Program
- Reproduction of Tsunami Evacuation Maps
- Conduct Outreach and Education Campaign on preparing for and responding to tsunamis as a community, including maritime community. Reproduction of Tsunami Outreach Products, such as: Tsunami Wheels, Tsunami and Earthquake Ready Cards, Posters and Boat Owners Brochures, etc. Conduct Tsunami Awareness Media Campaign.
- Maintenance of TsunamiReady Program and sustaining warning dissemination (sirens and signages)
- Support one (1) FTE, a Tsunami Specialist or Program Coordinator IV
- Support travel to attend NTHMP Annual Meeting, and Mitigation and Education (MES) Subcommittee Meeting. Support travel to collaborate between NTHMP members.
- Develop an Earthquake Mitigation Plan
- Develop a Tsunami Evacuation Plan



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# Program Overview

## Significant Current Initiatives and Projects

- Establishment of great working relationship and communication line with key officials from
  - NTHMP, NWS Guam WFO, CNMI, State of Hawaii, etc., and other local agencies and organizations
- Strategy re Scarce Resources
  - Leveraging across all grant programs and funding sources
  - Working with parallel programs
  - Working with agencies organizations with common missions, functions and goals
  - MOU/MOA between agencies
  - Mutual Aid Agreements between jurisdictions and with DOD
  - Emergency Management Assistance Compact (EMAC)
- Planning
  - Guam Hazard Mitigation Plan
  - Earthquake Mitigation Plan
  - Guam Comprehensive Emergency Management Plan
  - Territorial EOC Standard Operating Procedures (SOP) and Checklists
- TsunamiReady/StormReady Community
- Weather Ready Nation
- Decision Support Services



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# Program Overview

## Significant Current Initiatives and Projects

### ■ Mapping and Modelling

- Contract Support
- Guam GIS User Group
- Risk Mapping Initiatives – FEMA and Guam stakeholders
- NeoWave Modeling – Dr. Kwok Fai Cheung - University of Hawaii; Users Guide – Chip Guard
- Social Science in Tsunami Evacuation – Dr. Nate Wood, USGS
- Revisiting Guam's Tsunami Hazard Zones
- Coastal Resilience Assessment, Tsunami Index – NOAA, National Fish and Wildlife Foundation, and University of North Carolina in Asheville



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# Program Overview

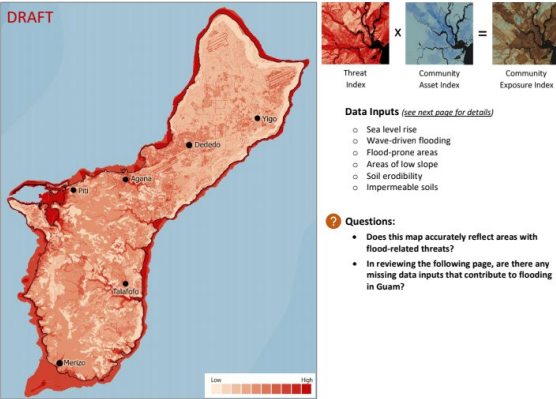
## Significant Current Initiatives and Projects

- Coastal Resilience Assessment, Tsunami Index – NOAA, National Fish and Wildlife Foundation, and University of North Carolina in Asheville

### Threat Index

The Threat Index is a composite layer to help communities understand which flood-related threats are potentially present in their area. While other threats may exist, for the purposes of this assessment, threats are defined as datasets that show coastal flood and severe storm hazards on the landscape.

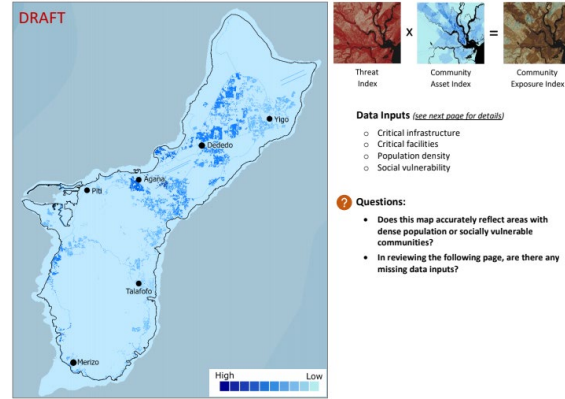
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### Community Asset Index

The Community Asset Index is a composite layer that focuses on facilities and infrastructure important to help communities respond immediately following a major storm event. The index utilizes datasets that quantify the number of assets present—not their magnitude of vulnerability or susceptibility to flood threats.

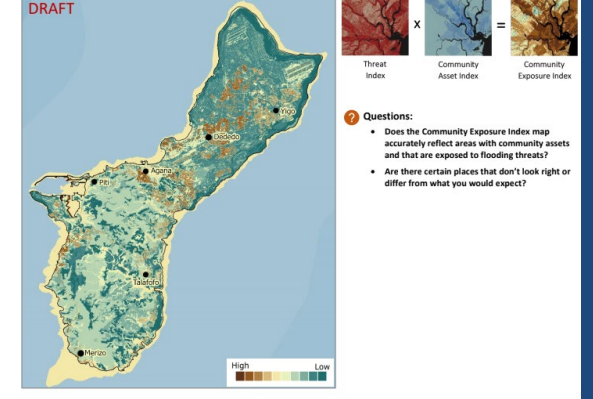
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### Community Exposure Index

By combining the Threat and Community Asset Indices, the Community Exposure Index identifies areas where community assets are exposed to flooding threats.

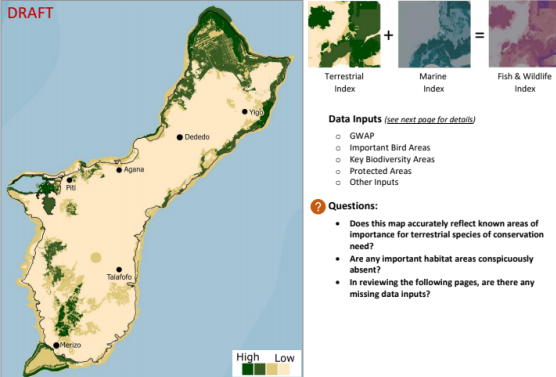
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### Terrestrial Index

The Terrestrial Index considers species of greatest conservation need identified either under the U.S. Endangered Species Act or through the Guam Wildlife Action Plan (GWAP). For each major taxonomic group, we compile data on critical habitat and habitat suitability to identify areas where species of conservation need occur or are likely to occur. Once maps for each taxonomic group are developed, they are combined into a single index for terrestrial and freshwater species. Other important habitat or conservation areas are also included.

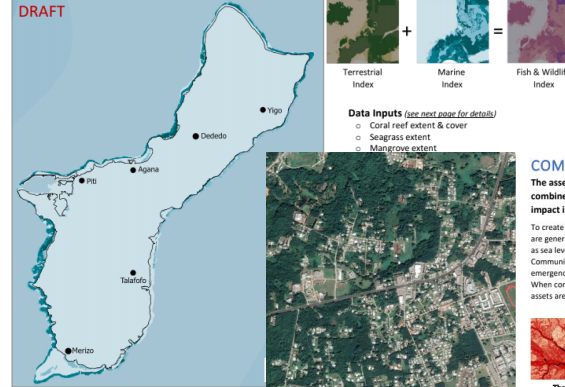
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### Marine Index

The Marine Index considers coral reef, seagrass, and mangrove habitat extent as areas with high marine species richness and biodiversity. We also consider Essential Fish Habitat (EFH), critical habitat, and Marine Protected Areas. The study area extends to 30m depth. Areas with higher coral cover or areas with the presence of seagrass, mangroves, EFH, or Marine Protected Areas are ranked higher in the Marine Index.

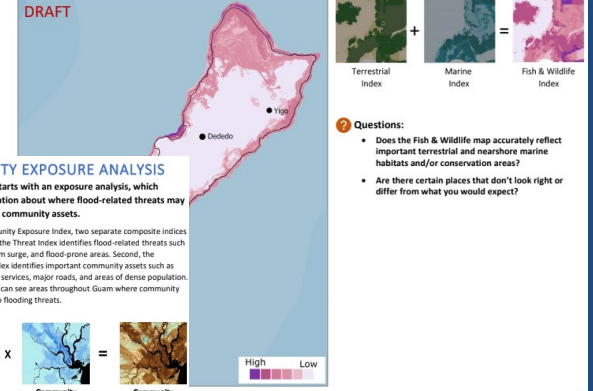
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### Fish & Wildlife Index

By combining the Terrestrial and Marine Indices, the Fish and Wildlife Index identifies areas important for species of conservation concern.

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### COMMUNITY EXPOSURE ANALYSIS

The assessment starts with an exposure analysis, which combines information about where flood-related threats may impact important community assets.

To create the Community Exposure Index, two separate composite indices are generated. First, the Threat Index identifies flood-related threats such as sea level rise, storm surge, and flood-prone areas. Second, the Community Asset Index identifies important community assets such as emergency response services, major roads, and areas of dense population. When combined, we can see areas throughout Guam where community assets are exposed to flooding threats.



### Preparing for the Virtual Workshop Webinars

On the following pages, please explore preliminary maps and associated data source used to generate each draft index. Key questions are highlighted throughout to give you a preview of the themes we will discuss during the virtual workshop webinars. We need your help to ensure all important types of critical community infrastructure and all flood-related threats are accurately reflected. If not, please help us to correct them.



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# Program Overview

## Significant Current Initiatives and Projects, Continuation

- Public Information
  - Joint Information Center
  - Social Media
  - Seasoned PIOs and External Affairs Officers
  - Survey Conducted by NWS Guam WFO
- Public Outreach and Community Education
  - Social media (...WhatsApp)
  - Virtual platform (workshops, TTX, summits...)
  - Increased airtime on radio and TV
  - Billboards
  - Mass Mailing (electronically, US Postal Service)
- Alert *Mass* Warning Notification
  - State Warning Point SOP
    - State Warning Point/Watch Office
    - Guam Fire Department (GFD) E911 Dispatch Center
    - Guam Police Department (GPD) Tactical Communications Command
    - Mariana Regional Fusion Center (MRFC) - Guam
  - All Hazards Alert Warning System
  - Emergency Alert System (EAS)
  - NOAA Weather Radio
  - Alertus Technologies
    - Indoor and Outdoor Warning System
    - Integrator – at least 7 systems



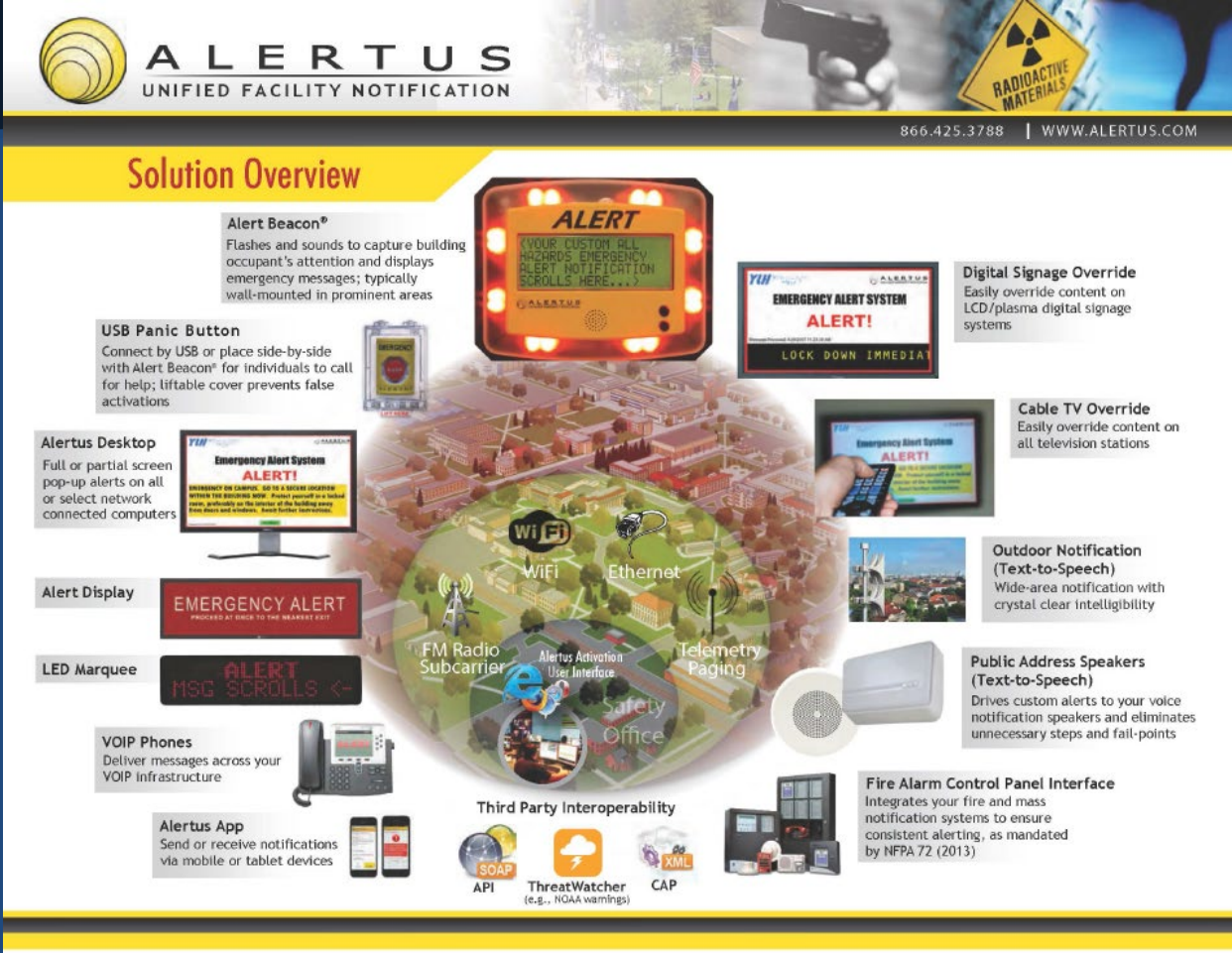
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# Program Overview

## Significant Current Initiatives and Projects, Continuation

- Alertus Technologies



The diagram illustrates the Alertus Unified Facility Notification system. At the center is a 3D city model with various communication channels: WiFi, Ethernet, FM Radio Subcarrier, Telemetry Paging, and a central 'Alertus Activation User Interface' labeled 'Safety Office'. Surrounding this central hub are various notification methods, each with a description and a representative image:

- Alert Beacon®**: Flashes and sounds to capture building occupant's attention and displays emergency messages; typically wall-mounted in prominent areas. (Image: A yellow and black Alert Beacon device.)
- USB Panic Button**: Connect by USB or place side-by-side with Alert Beacon® for individuals to call for help; liftable cover prevents false activations. (Image: A small USB panic button.)
- Alertus Desktop**: Full or partial screen pop-up alerts on all or select network connected computers. (Image: A computer monitor displaying an emergency alert.)
- Alert Display**: (Image: A red digital display showing 'EMERGENCY ALERT').
- LED Marquee**: (Image: A black LED marquee displaying 'ALERT MSG SCROLLS <-').
- VOIP Phones**: Deliver messages across your VOIP Infrastructure. (Image: A multi-line office phone.)
- Alertus App**: Send or receive notifications via mobile or tablet devices. (Image: Two smartphones.)
- Digital Signage Override**: Easily override content on LCD/plasma digital signage systems. (Image: A digital signage screen displaying an alert.)
- Cable TV Override**: Easily override content on all television stations. (Image: A hand holding a remote control pointing at a TV screen.)
- Outdoor Notification (Text-to-Speech)**: Wide-area notification with crystal clear intelligibility. (Image: A speaker mounted on a pole.)
- Public Address Speakers (Text-to-Speech)**: Drives custom alerts to your voice notification speakers and eliminates unnecessary steps and fail-points. (Image: A white public address speaker.)
- Fire Alarm Control Panel Interface**: Integrates your fire and mass notification systems to ensure consistent alerting, as mandated by NFPA 72 (2013). (Image: A fire alarm control panel.)
- Third Party Interoperability**: Includes SOAP API, ThreatWatcher (e.g., NOAA warnings), and CAP. (Image: Logos for SOAP, ThreatWatcher, and CAP.)

The top banner features the Alertus logo, the text 'ALERTUS UNIFIED FACILITY NOTIFICATION', and contact information: 866.425.3788 | WWW.ALERTUS.COM. The banner also includes images of a handgun and a radioactive warning sign.



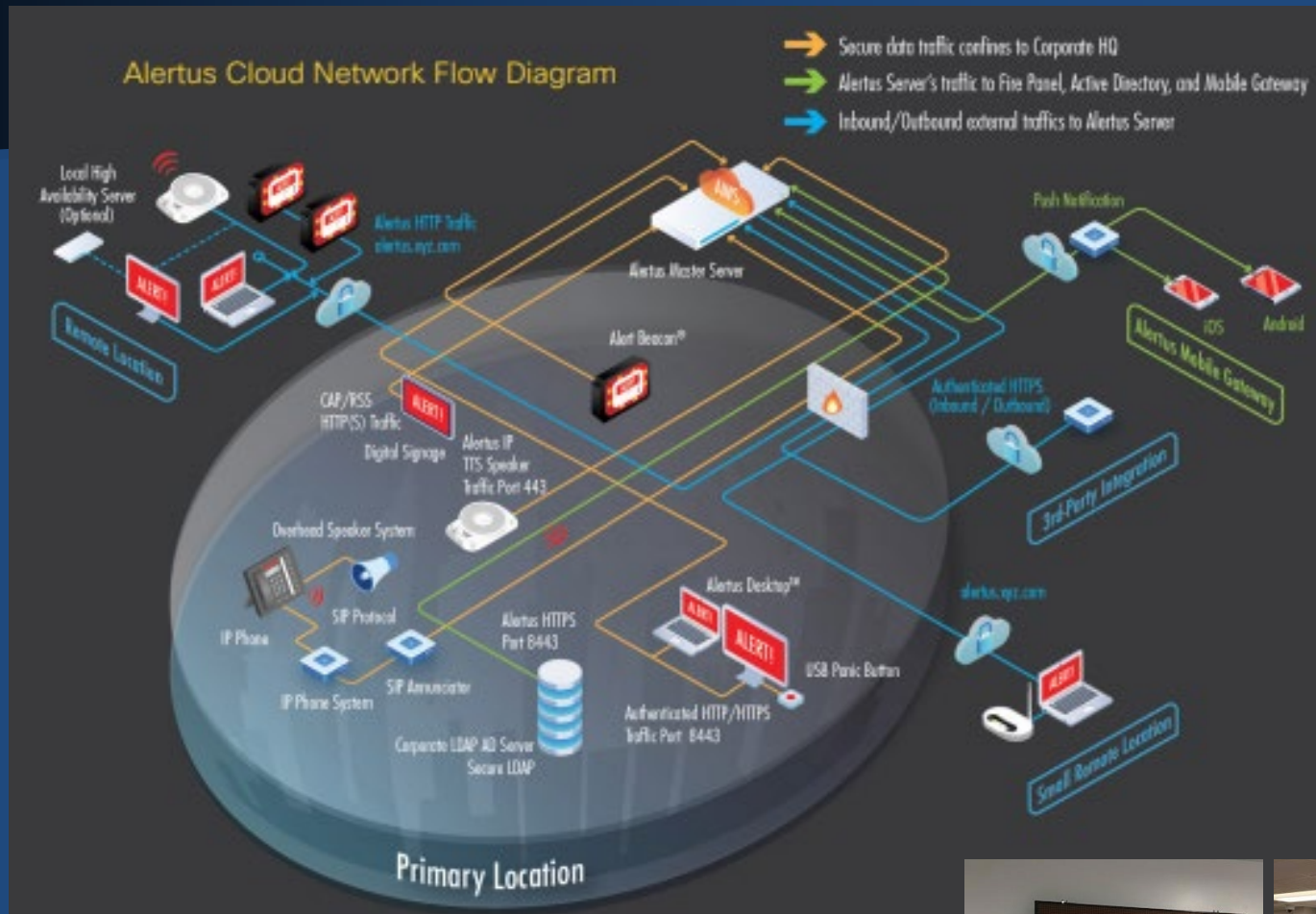
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## Significant Current Initiatives and Projects, Continuation

- Alertus Technologies



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# Challenges

## On Policies, Program Requirements, Response Resources

- Offices of Homeland Security and Civil Defense
- Geographically isolated island jurisdiction
- Capacity to address cost-share requirements
- Period of Performance of the grant – 12 months
  - Engineering and design
  - Local procurement processes
  - Contract development and signing
  - Permitting
  - Labor and materials
  - Property acquisition
  - Environmental and Historic Preservation review processes and approval
    - Section 106 determination
    - Archaeological Assessment
    - Environmental Assessment
- Others
  - Sustainment and Maintenance
  - Time Zone



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