



# USNG AND PRE-SCRIPTED MISSIONS

## EXECUTIVE SUMMARY

In planning for regional, large-scale, or catastrophic incidents whose impacts cover widespread areas, the ability to script potential missions and determine resource needs/allocations pre-event is critical. This required resource planning process examines a host of available data such as population, demographics, hazards, and infrastructure in the context of potential consequences, and determines likely resource needs for specific operational areas.

The operational area to be pre-scripted should be selected so that it is readily identifiable and known by the local responders, as well as by mutual aid resources that would be asked to respond from other areas of the state, resources requested through EMAC, and federal resources.

In every major event since Hurricane Andrew, after action reports by the military, federal civilian responders as well as local responders have pointed out the need for a uniform geographic point and area reference system. The State of Florida recognized this need during the hurricanes of 2004 and 2005 when local and out-of state mutual aid resources moving from one side of the state to the other had no grid reference system that was common to both the impacted area and the responders. This need was again painfully displayed during response to the catastrophic consequences of Hurricane Katrina, in the urban neighborhoods of New Orleans, and the more rural areas of Mississippi.

The United States National Grid (USNG) is the geographic grid reference system which has been identified by the National SAR Committee as the primary catastrophic incident search and rescue geo-referencing system that **must** be used by federal land SAR responders. Other non-federal responders across local and state jurisdictions have been in the process of adopting the Grid as well. Importantly, the US military is our largest force multiplier and also uses a grid which is functionally the same as the USNG, known as the Military Grid Reference System.

## PURPOSE

Develop a uniform procedure that can be used to pre-script missions for specific operational areas across all levels of response (Strategic, Regional, & Tactical) that can be used by leadership of various response disciplines (fire, SAR, Haz-Mat, emergency medical, law enforcement, etc.) to determine resource needs using sound science. Operational areas described utilizing a common grid reference system like the USNG will be readily identifiable to local responders and mutual aid assets not familiar with the local area.

## METHODOLOGY

Specific and scalable operational areas are identified using the United States National Grid. Operational areas can be classified into three basic categories – tactical, regional & strategic. Tactical areas of operation are typically designated by one or more 1,000 meter (.62 mile) grid squares and provide [detailed/focused] information for direct tactical operations. Regional operational areas generally designated by 10,000 meter (6.2 miles) grid squares and at the more strategic level 100,000 meter (62 miles) grid squares can be utilized to provide a view more typically used by operatives at the state emergency operations center.

Pre-scripted mission analysis can be accomplished for any level of operational area as delineated above. Once the grid size or target operational area is selected potential missions and required resources can be identified pre-event by laying the USNG over a suite of available data sets to include, but is not limited to, demographic data, infrastructure data, known hazards, property (residential/commercial/agriculture). Combining the USNG, data sets and modeling tools such as HAZUS, ALOHA (Areal Location of Hazardous Atmospheres), Floodway (from the National Weather Service), CATS (Consequence Assessment Toolset) or other modeling programs results in predicted consequences in context of actionable data for a specific operational area designated by USNG grid squares for all types of natural or man-made events.

When the potential consequences are calculated as described above, subject matter experts can then determine resource needs to mitigate or respond to these consequences. Resource needs can then be compared to available resources, identifying resource shortfalls that may exist.

An additional benefit is that consequences (and the resource needs) of an event can be updated from the original scenario-based planning or pre-event forecast projections in real time by using actual damage reports that are being received as the event progresses and/or post event damage assessments.

## **DESIRED OUTCOME/RECOMMENDATIONS**

As an outcome, decision makers at every level will have knowledge of the potential consequences of an event in a geographic area that is easily identifiable, and will also have visibility on needed resources for that event in that specific area. This will provide those decision makers with scientific data to plan for resource procurement and allocation pre-event, while the event is unfolding and post-event using actual damage assessment data.

## **CONCLUSIONS/RESULTS**

Experience has shown us that there is a critical need for pre-event planning to determine resource needs for various types of events. Identifying these needed resources allows us to determine potential resource shortfalls. Using a common area reference system to identify these areas allows decision makers, command personnel and responders to focus on the same area during the planning process and then during the response to an actual event. Using a common reference system such as the USNG allows responders from other jurisdictions and/or other states to have knowledge of the demographic, infrastructure and damage assessment data prior of their assigned response area to arriving in the area of operations enhancing their ability and time available to plan for an efficient response mission.

## **RESOURCES**

**GIS Coordinator's Hurricane Andrew After Action Report**, US Army Center for Lessons Learned, October 1992

**US Military Capstone Doctrine for Domestic Support Operations**, FM 100-19, 1993

**Hurricane Katrina, A Nation Still Unprepared: Recommendation 51**, Report of the Senate Committee on Homeland Security and Governmental Affairs, May 2006