

APPENDIX E: DHS PRE-SCRIPTED MISSION ASSIGNMENT (PSMA) FORM AND SAMPLE PSMA COVERING WG/DIAP ACTIVITIES

PSMA Form

MISSION ASSIGNMENT PROPOSED STATEMENT OF WORK (PSOW)					
Federal Department/Agency:		ESF #: Supporting Mitigation Operations		Tracking No.:	
I. Title:				Date: MM-DD-YYYY	
II. Description of Requested Assistance					
IV. Justification/Statement of Work					
IV. Cost Estimate: Total Estimated Cost: TBD					
FEMA COORDINATION					
Organization	Date	Approve/Disapprove	Organization	Date	Approve/Disapprove
Response Div.			OCC		
Recovery/PA Div.			CFO		
Logistics					
Mitigation					

Sample of Completed PSMA

Federal Agencies: US Army Corps of Engineers (USACE), National Oceanographic and Atmospheric Administration (NOAA) and the United States Geological Survey (USGS)

Title: Collection of Storm Surge Water Level, High Water Mark, and Real-time Overland Wind Data

I Introduction

The purpose of this Mission Assignment is to enhance the capabilities of ESF #5, 9 and 14 coordinators with real time data to be used in a pre- and post disaster environment. Real time data will enable **Emergency Management, ESF #5**, coordinators to significantly augment emergency management operations by providing accurate and reliable scenarios for life safety operations and Incident Management decision making. **Urban Search & Rescue, ESF #9**, coordinators and **Hazard Performance and Analysis Teams** will be able to use the information to delineate damage areas to better organize their reconnaissance. This will enable the teams to respond with the appropriate technical members for each area to be investigated. Finally, **Long Term Community Recovery, ESF #14**, coordinators can begin to work with community officials to re-enact the event and offer accurate planning mitigation practices. The immediate use of this and other data can support critical re-entry planning or response decision making as well as to support **HMGP, NFIP** and other FEMA programs. This data can be analyzed to show the findings and trends.

The Office of Federal Coordinator for Meteorological Service and Supporting Research has established the Working Group for Disaster Impact Assessments and Plans: Weather and Water Data (WG/DIAP) to ensure a coordinated effort to collect environmental data that is imperative to properly monitor and characterize storms and floods. The Working Group consists of elements from NOAA, USACE, USGS, FEMA, and affiliated participants. A detailed data collection plan is available at <http://www.ofcm.gov/publications/diap/p33pg2.htm> In general, this plan outlines the process to deploy new technologies that transmit real-time reporting of some water elevations and wind data. This Mission Assignment tasks the WG/DIAP, through its constituent agencies, to accomplish the specific elements of the plan that support FEMA response and recovery operations under Section 402(3) of the Amended Stafford Act.

II Description of Requested Assistance

This PSMA tasks:

- (1) The USGS with pre-positioning telemetered and non-telemetered sensors to record stream, river, and overland flood depths and the USACE for the pre-positioning of similar equipment to record near shore depths and wave heights during storm-induced flooding, especially storm surge;
- (2) NOAA with pre-positioning multiple, portable overland weather monitoring stations to record vital wind speed, wind direction, temperature, and barometric pressure data, and relay this data in real-time to NOAA and emergency managers;
- (3) USGS, NOAA, and USACE for support of FEMA and FEMA contractors for the post-storm acquisition and analysis of high water mark and wind data

III Justification

The purpose of the above three tasks is to facilitate an improvement in forecasting, disaster management, and recovery activities by the deployment of real-time and post-storm monitoring equipment (wind, surge and flood data) in the path of the storm prior to landfall and to expedite the computation of advisory flood elevations and claims settlements by gathering high water mark and wind data. These data can also be used by Hazard Performance and Analysis Teams to rapidly quantify damage in support of disaster assessment.

Emergency managers depend greatly on wind and river data for planning and managing hurricane and flood-disaster response and recovery operations. But often, there are too few hardened stations to adequately monitor wind and flood conditions to support operations before, during, or after a disaster.

In recent years the USGS, NOAA, USACE, and university researchers have developed mobile wind and water sensors that can be rapidly deployed to monitor hurricane impacts along the coast and inland. While these sensors were originally developed for research, some can provide real-time data that can be used by forecasters and emergency planners to assess pending damages and monitor evacuation routes and potential staging areas.

IV Statement of Work

(1) The USGS will deploy mobile sensors to form a network that will transmit tidal surge or inland water elevation data as frequently as every 15 minutes. These sensors will be strapped to selected bridge piers, power poles and fire hydrants at approximately 30-70 locations along the coast, in rivers, or in low lying areas. While most instruments will provide data for post-storm purposes, selected units will provide real time data. These real-time units will be placed along hurricane evacuation routes, near important infrastructure (roads, bridges, water and waste-water facilities, hospitals), and at other potential response-recovery staging facilities. This will provide emergency managers with reconnaissance level information about the storm's maximum and current water depths and the associated rates of rise and fall. This real-time data will allow response teams to rapidly assess the pending disaster area for staging areas and to estimate the duration of flooding at pre-determined critical facilities or shelters. Following the storm, the USGS will recover the instruments and download the data for the non-telemetered sites and place it on a USGS webpage (Waterdata.usgs.gov/XX/nwis/rt where "XX" is the 2-letter abbreviation for the state of interest). The USGS will also survey all of the instruments to a common elevation datum so that the data can be used to aid in the development of a flood map. A detailed work plan is available at <http://www.ofcm.gov/publications/diap/p33pg2>.

(2) NOAA has contracted with the Digital Hurricane Consortium, headed by the University of Florida to pre-position portable weather monitoring stations to record vital wind speed, wind direction, temperature, and barometric pressure data in and around the area of hurricane landfall. This data will then be relayed in real-time to NOAA monitoring stations consisting of 6 trailer mounted instrument towers that can be deployed and set up prior to landfall. Typically, several towers are clustered near the area of projected landfall, while others are spread along the coast. This provides a recording of both the peak and the breadth of intensity. The specific deployment strategy can be altered within hours of landfall to optimize the dataset, which is a function of specific storm parameters (size, intensity, translation speed). Instrument deployment teams have historically worked closely with NOAA HRD personnel to jointly plan deployments. The

program has been operational since 1999, and has been providing real-time data streams since Isabel in 2003. The real-time data stream has been used by HRD to refine intensity forecasting just prior to landfall (example: Dennis, 2005).

(3) USGS and USACE will support FEMA and FEMA contractors by deploying personnel to flooded areas to identify, characterize, and denote high water locations. In addition, if requested by FEMA, they will survey the high water marks to a common datum. At its own expense, the USGS will determine the high water elevations and report the magnitude of flood flows at current USGS stream gauges and will attempt to assign a recurrence interval to those flows. If FEMA tasks them, the USGS will also flag high water marks at discontinued stream gauges, flood-peak gauging stations, and other locations of significant interests (bridges, dams, etc.). If hydraulic conditions are favorable, the USGS will determine peak flows to aide in assigning a recurrence interval to the flood flows at these locations. USGS and USACE operations for denoting high water mark locations and the subsequent surveying will be performed in a manner consistent with FEMA protocols, except at stream gauging stations and flood-peak gauging stations where high water marks, river profiles, and stream cross-sections will be surveyed to more stringent USGS protocols to permit the computation of flows.