

## MEMORANDUM FOR FILE

SUBJECT: Hatteras and Ocracoke Islands, North Carolina, Feasibility Study, 9 March 2005, Project Delivery Team (PDT) Meeting

1. On 9 March 2005, a Project Delivery Team (PDT) Meeting was held for the subject feasibility study in North Carolina Department of Transportation's (NCDOT) Office in Raleigh, NC. The purpose of this particular meeting was to hold discussions with other agencies/NCDOT consultants to discuss the Corps' information needs and what information was currently available. The intent is to prevent duplication/minimize duplication of efforts in obtaining data necessary for preparation of the feasibility report. The following team members were in attendance:

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2. Rob Hanson started the meeting by giving an overview of the Hatteras and Ocracoke Feasibility Study. He asked everyone to introduce him or herself and give a brief synopsis of their involvement/interest in this study.

3. Glenn McIntosh gave a brief overview of the funding situation and schedule for the study. He then reiterated what Rob had stated about why we were all here today – to learn of the information that has been gathered through various efforts that could be utilized on the Corps' Feasibility Study. This will minimize efforts as well as help keep costs down and save time. Glenn then introduced Jim Jacaruso, Geographic Information System (GIS)

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Coordinator for Wilmington District, US Army Corps of Engineers. Jim made a brief PowerPoint® presentation on how we would be utilizing GIS on the study and how we would be taking any available data and incorporating the information into our GIS database. A copy of this presentation is included as an attachment to these minutes.

4. Rob then asked that each agency/consultant represented present the information that they currently have or are working on that could be made available to the Corps for use on the feasibility study. That information is synopsisized below:

**EcoScience:**

Wetland delineation has been accomplished within hotspots on a 2-mile stretch of the northern end of Ocracoke Island. Ecological communities mapping and protected species habitat is available for the same area. **L**ight **D**etection **A**nd **R**anging (LIDAR) data used for work performed by EcoScience is also available for the entire area of interest for this study. Isabel change detection analysis was performed using NC Flood Maps and Eyesafe Atmospheric Research LIDAR (EARL) to examine the effects of dune breach and overwash within study corridor on wetlands within the hotspot. EARL is an experimental LIDAR system in use by United States Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), and National Aeronautics and Space Administration (NASA) that has previously performed in conjunction with CHARTS in Florida. More details can be found at <http://coastal.er.usgs.gov/hurricanes/Isabel/lidar.html>.

**URS:**

Working on 4 hot spots at Hatteras Village, Rodanthe, Canal and sandbag. Wetland delineation, natural communities, threatened and endangered species information available. Cross-sections are available along stretch. Historical Architecture data is available for Hatteras Village. Archaeology data has been collected by NCDOT. Water penetrating LIDAR data is available from the Corps of Engineers. Ground penetrating LIDAR has been flown by the Corps but not completed yet because of other hurricane work in Florida. Natural resources data – wetland delineation, natural communities, species – available for Avon to Buxton reach. Some gaps have been filled in with natural resources data from Rodanthe to Oregon Inlet since Isabel.

**Coastal Geology/North Carolina Geological Survey (NCGS):**

Working with USGS Woods Hole Office. Geophysics offshore, CHIRP™ side-scan sonar, turf sonar, seismic 8-meter depths. To 8 miles offshore, other information available 5-10 miles offshore. Applied flood plain mapping to geomorphic mapping for Cape Hatteras and Cape Lookout – draft of Cape Hatteras under review. Drilled 17 core holes on Outer Banks between Kitty Hawk and Ocracoke Village – 8 in study area, 65/75 feet down to 225 feet with most still under analysis. Original offshore study survey were done in MapInfo [Outer Banks Task Force – (OBTF) study in mid 1990s] to include track line maps of seismic and 153 vibracores offshore utilizing the Corps' Snag Boat Snell. Imagery and grain size analysis of these cores have been performed. Cores have been archived. Some of the report information can be found on the OBTF website at <http://www.obtf.org>.

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**ECU:**

Working with USGS – Geological Cooperative Program. In 5<sup>th</sup> year, 40 people, in geologic study ranging from Currituck to Cape Lookout. Data sets at ECU – ground penetration radar data. Some data great. Some data not so good where saltwater is present. High-resolution seismic data in estuarine system – 2000 miles or more. Vibracores – several hundred down to 10 meters but most around 20 feet, various places on Barrier Island and behind it. Estuarine and shoreline erosion data – 1850s to present with more estuarine than ocean data. Aerial photo time slice analysis – geomorphology through time – long-term evolution with sea level rise. Radiocarbon dates, cesium dates, amino acid dates, and **Optically Stimulated Luminescence (OSL)** dates – all various dating of the different materials found. Barrier island inlet vulnerability study is going on now. Historical and prehistorical inlet vulnerability analysis is also available. Data is a big source, but it is raw data. Dr. Riggs needs an idea of how his data would work for us and the objectives for using the data. Phase 1 of the work is finishing in FY 06. Reports about island, shoal, **Submerged Aquatic Vegetation (SAV)** variances with years of storm processes and storm patterns are available. Real information comes from the people, not the raw data. Inlet data presented at last OBTF meeting.

**NCDOT:**

Photogrammetry, location surveys, SAV line established by location surveys which exists in their Photogrammetry section.

**MOFFAT & NICHOLS:**

Cross-section profiles at Ocracoke hot spots for both pre and post Isabel. Sediment sampling data is available along the profiles. Bridge maintenance data is obtained regularly. Tony Young, Corps of Engineers, is knowledgeable of the Bonner Bridge 10 years ago. Croatan Sound Bypass Bridge project produces some modeling results. The Corps of Engineers' **Field Research Facility (FRF)** survey data is on FRF website. Look at some of the **Federal Emergency Management Agency's (FEMA)** modeling for sound side flooding information and high water marks.

**ARCADIS:**

Land use data along 16 miles of shoreline, **Global Positioning System (GPS)** locations of roadways, overwash area, GPS locations of SAVs at hot spot "C" – Rodanthe to Avon and most of the Corps' geological layers list provided earlier. **National Parks Service (NPS)** may have **Threatened and Endangered (T&E)** species data, which includes turtles and Amaranths, but the data may need to be updated and/or compiled. NCDOT flies north end of Hatteras Island every year for monitoring the groin. Putting together a Master Technical Report for compilation of all natural resources data.

**PARSONS-BRINKERHOFF:**

Some shipwreck information from remote sensing around Oregon Inlet and natural resources information from Rodanthe to north of Oregon Inlet. Parsons-Brinkerhoff has Scanning

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Hydrographic Operational Airborne LIDAR Survey (SHOALS) [now called Compact Hydrographic Airborne Rapid Total Survey (CHARTS)] under contract to map SAVs with LIDAR around Bonner Bridge and Currituck Sound. Remote sensing surveys west of Bonner Bridge and along proposed long bridge-background research. Non-scientific visitor study of Pea Island – visitor surveys. Soil borings and sand movement tests conducted with design of West Oregon Inlet Bridge. Community land use information. Supplemental Environmental Impact Statement (EIS) on Bonner Bridge replacement due for approval in August 2005. This will identify NC 12 maintenance for long-term options. Work is scheduled for completion in 5 weeks. Original EIS was submitted to Wilmington District Regulatory Division 1996-1997 timeframe. NPS and NC Division of Coastal Management (DCM) are other sources of data.

5. After this information sharing session, it was agreed that the Corps would evaluate the information presented and make determination of what would be useful to us. We will then advise the meeting participants. Information about this study can be found on the Wilmington District's website by going to the following address:

<http://www.saw.usace.army.mil/hatteras-ocracoke/main.htm>

6. With no further information to be shared, the meeting adjourned.



Glenn McIntosh  
Sr. Project Manager