New Jersey Waterway Debris Removal from Superstorm Sandy: Unprecedented!

Superstorm Sandy

Sandy Pinned & Pushed West
Markings of a “Freakerstorm”

Superstorm Sandy

Waterway Debris
Superstorm Sandy

Waters of the State:
- Atlantic Ocean
- Bays
- Back Bays
- Lagoons
- Beaches
- Private Marinas
- Mean High Tide v. Storm Surge
- Private Property

Response – Goal

Goal: remove 75% of debris by June 1st & maximize reimbursement

Response – Reimbursement

- FEMA funding for debris removal requires:
  - Eliminate immediate threats to life, public health, and safety;
  - Eliminate threat to property;
  - Ensure economic recovery of the community
Response - Agencies

New Jersey State Government Executive Branch

Law & Public Safety
- State Police
- Highway & Maritime Safety Enforcement
- Emergency Preparedness & Response

Environmental Protection
- Natural & Historic Resources
- Office of Water Quality
- Division of Fish & Wildlife

Transportation
- Transportation Systems Management
- Office of Motor Carrier
- Office of Motor Vehicles

General Agencies Involved:
- Federal Emergency Management Agency
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- National Park Service

Response – Program Manager

Never before had a state agency contracted with a private firm to manage this type of operation

- Dewberry Role – Program Manager
  - Acted as NJDEP’s agent – managed state-contracted debris removal contractors and debris removal monitoring firms
  - Ensured work was in accordance with all Federal and State regulations
  - Gained maximum reimbursement to the State of eligible costs from FEMA

Response - Contracting

- 3 Debris Removal Monitoring Firms
- 3 Debris Removal Contractors hired by State
Response - Protocols

Protocols Developed

Response – FEMA Policy

- Sediment Removal
  - Over-wash Sediment Removal/Beach Restoration
  - Geomorphic Sampling
- Side Scan Sonar and Bathymetric Surveying

Response - Permits

- Permits
  - USACE
    - Nationwide Permit 3 – Maintenance Removal of Sediment and Debris
    - Nationwide Permit 16 – Return Water from Upland-Contained Disposal Areas
    - Nationwide Permit 35 – Maintenance Dredging of Existing Basins
    - Nationwide Permit 22 – Removal of Vessels
  - NJDEP
    - Dredging and Land Use permits

Accelerated Schedule – all agencies involved were “leaning forward” to accomplish the established goals
Response – T&E Species

- Mapping of Nests and Rookeries
- Confidential Information
- Certified Wildlife Biologists Required
- Waivers for Select Timing Restrictions
- Reduced Buffers
- Monitoring of Debris Removal

Response – T&E Species

The Red Knot

- Delaware Bayshore - most important stop on 20,000 mile migration
- Red Knots double their body weight feeding on horseshoe crab eggs for a 2-3 week time period in May/June.
- Coincided with proposed house demolition and debris removal

Response – Section 106

Historic Preservation

- Compliance with Section 106 of the National Historic Preservation Act
- Maritime Archaeologists Required
- Terrestrial Archaeologists Required
- US Army Corps of Engineers and New Jersey State Historic Preservation Officer (SHPO) Coordination
- Impact to Debris Removal Operations
  - Review and Interpretation of Side-Scan Sonar Imagery
  - Over 1,500 buffers established around potentially historic sonar targets
**Response – Civil War Era Barge**

**Historic Preservation Unanticipated Discoveries**

**Bowers Creek Barge**
- Civil War era barge
- Remaining decking is 83.5 feet long, 31 feet in beam
- Originally had a large deck house
- Located during debris operations and reported to EHP
- Barge was recorded and left in place and 500 foot buffer administered
- Assigned a New Jersey State Museum Archaeological Site number

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**Response – Wooden Ship**

**Historic Preservation Unanticipated Discoveries**

**Liberty State Park Vessel**
- Revealed with Maritime Archaeological Monitor Onboard
- Starboard bow of a heavily built wooden ship
- Implemented Section 106 “Unexpected Discoveries or Unanticipated Effects Protocol”
- Vessel recorded and placed back within original location
- A 500 foot buffer zone was assigned to vessel
- Vessel assigned a New Jersey State Museum Archaeological Site number

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**Response: Impact to Operations**

**Environmental & Historic Preservation Map**

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Conducted Side-Scan Sonar of nearly 200,000 acres of State waters and identified over 6,000 submerged targets.

Debris Removal:
- 106,000 CY of sediment from private marinas
- 323,214 CY of sediment from back bay over-wash areas
- screened and placed on beach
- 106,353 CY of debris: primarily C&D debris
- 195 Vessels and Vehicles
- 4 mostly intact homes
Success – Open for Business

Before and after image of the damage sustained to the Seaside Heights Pier following Hurricane Sandy. Photo by Liz Roll/FEMA

A beach party at Seaside Heights celebrates completion of the new boardwalk. Photo by Rosanna Arias/FEMA

Long Branch, NJ Mayor Adam Schneider cuts a ribbon to re-open the beach for Memorial Day. Photo by Sharon Karr/FEMA

A beach party at Seaside Heights celebrates completion of the new boardwalk. Photo by Rosanna Arias/FEMA

Success – Waterways Cleaned

100% of debris removed as of January, 2014

Unprecedented Success

“A Summer Saved”

“The waterway debris removal project represents the finest efforts of New Jersey, showcasing our ability to pull together the best resources available to get the job done safely, on time, and with utmost respect and consideration for the environment, and of course, our residents and businesses.”

-- Jane Kozinski, NJDEP Assistant Commissioner for Environmental Management
Awards

Jane Kozinski, NJDEP Assistant Commissioner of Environmental Management, was presented the New Jersey Chapter of the American Council of Engineering Companies Chapter’s Distinguished Service Award for her outstanding work leading post-Sandy clean-up efforts of New Jersey’s waterways.

Dewberry and the NJDEP Superstorm Sandy Waterway Debris Removal Project were recognized by the ACECNJ at their Engineering Excellence Awards Banquet in March 2014 with an Honor Award.

For Additional Information

http://www.state.nj.us/dep/special/hurricane-sandy/wwdebris.htm

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QUESTIONS ?