MDEQ Preparation and Response for Disaster Events

ASTSWMO Mid-Year Meeting
Renaissance Hotel, Montgomery, AL
April 25, 2012
Introduction

- MS natural disasters have included:
  - Hurricanes
  - Tornadoes
  - Ice storms
  - Floods

- MS manmade disasters have included:
  - Oil Spills
  - Train Derailments
  - Fires and Explosions
MDEQ Authority in Emergencies

MDEQ Authorization to Address Disaster Related Emergency Conditions Originates from:

- MS Code Annotated, §17-17-27 (Part 8)
- MS Nonhazardous Solid Waste Management Regulations Section II.O
- Emergency Declaration by Order of the Governor of the State of Mississippi
- Emergency Declaration by Order of the Executive Director of the Mississippi Department of Environmental Quality
Mississippi Disaster Events

August 2005 – Hurricane Katrina

- 125 Billion Dollars in Damage
- 236 Identified Dead Statewide and 67 Persons Missing and Presumed Dead
- Almost 70,000 homes in South Mississippi Destroyed
- 120,000 people living in temporary FEMA trailers or other forms of temporary housing after the Storm
- All 82 Counties in Mississippi were declared Federal Disaster areas with 47 counties declared for full public disaster assistance.
Debris Field: Coastal Mississippi
August 2005 – Hurricane Katrina

- Hurricane Katrina created almost 46 million cubic yards of debris in Mississippi, approximately 23 million cubic yards of debris in the three Coastal Counties.
- 25% of the wastes in the coastal counties was vegetative and 75% structural or other.
- 90% of the wastes in the remaining counties was vegetative debris and 10% was structural or other.
Mississippi Disaster Events

- April 2008 – Tornados Hit Jackson Metropolitan Area
- September 2008 – Hurricane Gustav swipes Coastal counties and spawns tornadoes in Southwest Mississippi
- April 2010 - Tornados strike Yazoo, Holmes, and Monroe Counties creating 300,000 cubic yards of debris
Mississippi Disaster Events

- April 2010 - BP Oil Spill impacts Gulf Coast States
- May 2010 – Floods in Corinth/Alcorn County area
- April 2011 - 67 Tornados hit Central, East, & North MS creating 620,000 cubic yards of debris
- May/June 2011 - Mississippi River Flooding – 120,000 cubic yards of debris
MDEQ Process for Disaster Preparation and Response

- Plan
- Prepare
- Respond
- Restore
Planning for Disasters

- MDEQ requests all local governments develop a disaster debris management plan
- Why Plan?
  - Required by comprehensive local solid waste management plans
  - Disasters happen
  - Helps expedite removal and disposal of debris
  - FEMA/MEMA assistance
Planning for Disasters

The Local Disaster Debris Management plan should:

- Identify the debris related issues
- Outline the actions to facilitate debris operations
- Contemplate funding issues for debris management
- Document debris related decision making
- Identify the various local agencies/staff that may be involved
Planning for Disasters

- Plans should also address:
  - Response actions
    - Progression of needs
  - Communication Plans
  - Contractual arrangements
    - Early preparedness contracts, FEMA
    - Locally available contractors
  - Predetermined debris management site options
    - Must be periodically evaluated for continued suitability
    - Still requires MDEQ approval
Pre-Event Preparation

- MDEQ places Emergency Responders, Emergency Contractors and other key staff on stand-by for immediate deployment;

- MDEQ places staff at Mississippi Emergency Management (MEMA) Headquarters during storm event;

- MDEQ disaster response team conducts prep meeting and assigns key disaster coordinators
Event Response

- First Responders Deploy to High Impact Areas to identify hazardous material conditions;
- MDEQ in coordination with EPA, Agency contractors, Coast Guard, and others to initiate hazard mitigation actions;
Event Response

- MDEQ establishes debris coordinators and points of contacts at Agency headquarters;
- MDEQ establishes call center in larger events;
- MDEQ deploys debris specialists to the impact areas for coordination with local governments;
Assessment of Debris Options

- Many factors influence debris management options for local governments
  - Eligibility for FEMA funding
  - Eligibility and timing for Insurance Settlements
  - Types of debris
  - Amounts of debris
  - Population of area – Urban vs. Rural Communities
  - Existing waste management infrastructure
    - Availability and location of existing landfills and other facilities
    - Size and remaining life of landfills
Know FEMA Assistance Conditions

- Who has Category A Assistance – Public Assistance
- Who has Category B Assistance – Individual Assistance
- Who has Both Category A and Category B Assistance
- Who is receiving additional funding for the event?
  - Katrina – 47 of 82 counties received 100% funding assistance
  - 2011 Tornado events – 1 county received 100% funding for Corps activated assistance
Types of Debris

- MDEQ works with FEMA and other agencies to identify the types and amounts of debris generated:
  - Vegetative Debris
    - Most common, likely in most natural events
    - Downed trees, limbs, and other vegetation
  - Structural Debris
    - Damage to homes, businesses, industry
    - Amounts dependant on event type, severity and location
    - Engineered and treated wood, shingles, concrete, brick, metals, wallboard/drywall, and other structural debris
Types of Debris

- Structural debris (continued)
  - Contents of structures include: appliances (white goods), furniture, clothing, electronics, household and business hazardous wastes, food wastes, etc.
  - Some special wastes such as asbestos, lead paint, treated lumber, etc.

- Other special wastes
  - Animal carcasses (Animal Board of Health)
  - Industrial and commercial wastes
  - Contaminated materials
  - Food Wastes
Event Response

- MDEQ conducts assessment of debris management conditions and needs:
  - Storm Debris Estimates;
  - Types of Debris;
  - Existing disposal capacity;
  - Options for managing debris;
  - Special waste management needs;
Event Response

- MDEQ develops and distributes event specific debris guidance that addresses:
  - Allowable Methods for Debris Management
  - Criteria for Selecting Debris Sites
  - Process for Requesting Approval of Debris Sites
  - Typically Must Request in writing
Establish and Maintain Communication Channels

- Identify and Communicate with Key Stakeholders:
  - Local Government Emergency Management Contacts
  - Local Debris Management Contacts
  - FEMA and State Emergency Management Contacts
  - Corps of Engineers contacts where activated
  - Debris Contractors
  - Debris Monitors
  - Volunteer Coordinators in the high impact areas
  - Other Agencies – EPA, Animal Board of Health, State and Local Health Departments
Event Response

- Development and implementation of Public Outreach Efforts
  - Warnings on Hazards and Environmental Issues
  - Notices of Debris Collection Requirements
  - Available Debris/Waste Services and Facilities
  - Notice of Special Programs or Services
  - Progress Reports on Debris Clean Up
Debris Management Options

- Recycling and Reuse Opportunities
- Permitted Solid Waste Management and Disposal Facilities
- Temporary Emergency Debris Management and Disposal Facilities
  - Storage/Processing
  - Burn Sites
  - Landfill Sites
Location Criteria

- Pre-selected sites should be continually evaluated for suitability
- Consider sites that have been previously evaluated or that have environmental permits
  - Old landfills (must maintain landfill cap integrity)
  - Mining sites
- Avoid sites with pre-existing environmental problems
  - Illegal Dumps
  - Industrial Contamination
  - Environmental Justice Concerns
Location Criteria

- Setback requirements dependant on type of activity
  - Inhabited dwellings
  - Property lines
  - State water body
  - Avoid flood prone areas and wetlands
  - Drinking water supply wells
  - Airport runways (burning)
  - Vegetated areas (burning)
  - Suitable soils and distance to ground water (disposal)
  - Endangered species, archaeology, historically significant areas
- Adequate acreage to conduct activity
- Property owned by local governments is preferred
Operating Criteria

- Typical authorization requirements include:
  - Segregating and managing unauthorized materials
  - Maintaining personnel and equipment
  - Maintaining location criteria and setbacks
  - Limits on pile size, height, slopes, etc.
  - No burning of unauthorized materials
  - Fire prevention and extinguishing agents
  - Storm water controls
  - Proper management of special wastes
Operating Criteria

- Typical authorization requirements (continued):
  - MDEQ right to inspect operations
  - Dates for ceasing operations and final closure
  - Notification/certification to MDEQ of final closure
    - Often critical for FEMA reimbursement
  - Other site specific criteria
  - Be sensitive weather impacts to debris management
    - Katrina drought conditions
    - Transition from warm to cold weather conditions
Authorization Requests for Debris Sites

- Written Request made by Local Government
  - Location (physical address, GPS coordinates)
  - Ownership information
  - Operator information
  - Operating information
  - Location criteria Compliance
  - State disposal fee information (commercial disposal)
  - Closure information
  - Site restoration/closure plan
MDEQ Evaluation of Debris Sites

Upon receipt MDEQ conducts an evaluation of the request:

- Field review of proposed site
- Coordinate with FEMA, CoE or other agencies as necessary
- If approved, issue letter of authorization (verbal approval may be granted initially in some instances)
- If approved, MDEQ will conduct compliance assurance inspections
- If denied, MDEQ will provide notification and assist with evaluating alternative sites
Vegetative Debris Management

- Chipping or Mulching Sites
  - Used for landscaping by local governments or distributed to commercial companies or nurseries
  - Agricultural purposes (blueberries)
  - Fuel for industrial boilers

- Landfill Disposal
  - Permitted Landfills
  - Emergency Fills

- Controlled Burning
  - Temporary Open Burning Sites
  - Forced Air Burn Sites
Vegetative Debris Management

- Hurricane Katrina – Vegetative Debris
  - Mississippi lost 19 billion board feet of timber in Katrina
  - MDEQ set up emergency wet yards and worked with timber processors to recover timber from damaged forest lands
  - MDEQ worked with local governments to set up vegetative debris chipping operations across many areas of south Mississippi.
  - Worked with EPA to sponsor a forum on the reuse of the millions of tons of chipped vegetative debris
  - MDEQ worked with the Corps of Engineers to develop a distribution plan for various end uses
If You Chip It, Will They Come?

- Hurricane Katrina – Vegetative Debris
  - Saw spontaneous combustion at numerous chip stockpile sites across south Mississippi.
  - Formosan termite infestation became a concern for some mulch materials in extreme southern Mississippi.
  - MDEQ ultimately approved a number of emergency landfill sites in south Mississippi for the chipped vegetative debris.
Vegetative Debris Management

- April 2008 Tornados – MDEQ worked with Jackson area local governments to ensure majority of the debris was chipped for boiler fuel.

- April 2011 Tornados – We had a half dozen of the 60 local governments that chose to chip vegetative debris. MDEQ distributed articles and press information on those communities that chose to mulch and seek uses for the debris.
Structural Debris Management

- Recycling Opportunities
  - Structural Steel Recycling
  - Concrete Crushing Operations
  - Deconstruction Projects/Opportunities

- Interim Management Sites
  - Storage and Staging

- Landfill Disposal
  - Permitted Municipal and C & D Landfills
  - Temporary Emergency Landfill Sites
Katrina Debris Landfill Sites

- 19 Landfill Sites Accepted Structural Debris for Disposal
  - 6 Existing Permitted C & D Landfills
  - 7 Upgraded Vegetative Debris Landfills
  - 6 Sites Never Before Used as Landfills

- MDEQ with FEMA support installed Groundwater Monitoring wells around all landfills and has conducted 4 monitoring events
Special Waste Management

- Recycling Opportunities
  - White goods processing
  - Electronics Waste
  - Automobiles

- Collection and Disposal of Special Wastes
  - Household Hazardous Wastes
  - Animal Carcasses
  - Asbestos Containing Materials
  - Food/Putrescible Wastes
Katrina White Goods Processing Site

- MDEQ Developed Metals Policy After Katrina
- Alter Trading Managed Operations
- Collected White Goods from 70,000+ Households
- Removed food wastes, refrigerants, capacitors, oils and other items;
- Processed and baled white goods for shipment to recycling facilities.
Household Hazardous Waste Collection

- Katrina HHW Collection
  - Curbside Collection/Events/Sites Managed by EPA in the three MS Coastal Counties
  - EPA Provided Additional Grant Funds for MDEQ Sponsored Collection Events
- April 2010 HHW Collection Events – Yazoo and Holmes Counties through MDEQ Contractors
- Spring 2011 HHW Events in Smithville Area and Curbside Collection Days in Flood Impacted Areas
Nutria Carcass Disposal

- Hurricane Gustav – April 2008, Nutria Carcasses
  - Experienced flooding and tornado damage in Hancock County and in Wilkinson and Amite Counties
  - Had to dispose of tens of thousands of dead nutria from Hancock County bayous and beaches;
  - Local governments pressed MDEQ to allow for large scale burial pits in the county for the nutria carcasses;
  - MDEQ ultimately was able to work with USDA for collection and disposal of the Nutria carcasses.
Asbestos Containing Material

- **Hurricane Katrina - Demolition of Thousands of Damaged Structures**
  - Had to be inspected for Asbestos
  - Had to have a No Action Assurance letter under NESHAP standards issued by EPA for demolition of the structures
  - Had to develop special policies for wet demolition of these structures
  - Had to upgrade landfill sites on the coast for temporary disposal of asbestos containing materials;
  - Had to train personnel on acceptable demolition procedures
  - Had to monitor the Asbestos Demolition and Disposal Activity
DANGER

ASBESTOS DUST HAZARD
CANCER & LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL
ONLY
Hurricane Katrina – Food/Putrescible Wastes

- Flooded Grocery Stores Filled With Food;
- Damaged refrigerators and freezers from 70,000 homes filled with food; and
- Shrimp Processing Wastes
- Fish, pork bellies, bananas and chicken from warehouses in the State Port at Gulfport and the Port of Pascagoula
Restoration and Closure of Debris Sites

- Removal of recyclables, HHW, other staged materials
- Removal and Disposal/Use of Residuals and Ash
- Closure and Installation of Final Cover System at Landfill Sites
- Repair and restoration of temporary sites
- Closure Certification Report Filed
- Inspection by MDEQ/Notice to FEMA
- Post Closure Monitoring
Contact Information:

Mark Williams, P.E.
Solid Waste and Recycling Programs
Mississippi Department of Environmental Quality
P.O. Box 2261, Jackson, MS 39225
Phone: 601-961-5304
Fax: 601-961-5785
Mark_Williams@deq.state.ms.us
www.deq.state.ms.us/solidwaste