



RDPO

Regional Disaster Preparedness Organization

Unified. Prepared. Resilient.

Workshop 1

Introduction to Debris Planning

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What should a plan cover?

- **Response**
- **Recovery**
- **Additional tasks**
 - **Maintain debris management readiness**
 - **Training**
 - **Exercises**
 - **Plan maintenance**

Debris in the past

- **Hurricane Andrew**
 - 43 million cubic yards of debris
- **September 11th, 2001**
 - 2.8 million cubic yards from twin towers
- **Hurricane Katrina**
 - Alabama – 3.4 million CY
 - Mississippi – 45.8 million CY
 - Louisiana – 64.3 million CY



**When jurisdictions fail to
plan, they plan to fail**



What causes debris?

■ Natural disasters

- Hurricanes
- Tornados
- Wind Storms
- Ice Storms
- Floods
- Fires
- Earthquakes



■ Man-made events

- Civil unrest
- Terrorist attacks



Goals of Debris Planning

- **Remove debris as quickly as possible**
- **Protect life, public health, and safety**
- **Reduce public health risk**
- **Timely return to normalcy**
- **Maximum reimbursement following Federal Declaration**

Pre-planning

- **Identify planning team**
- **Identify and forecast debris amounts/types**
- **Evaluate any applicable environmental rules**
 - **Include Federal, State and Local statutes**
 - **HAZMAT, asbestos, lead paint**
- **Determine debris capacity**
 - **Where are the facilities?**
 - **Consider recycling and waste to energy disposal**

Pre-planning

- **Pre-select debris management sites**
 - Permitting issues?
 - Public/private land use
 - Pre-negotiate necessary contracts
- **Equipment needs**
 - Staffing
 - Mutual Aid



Pre-planning

- **Communications plan**
 - Debris team
 - Local, State and Federal agencies
 - Residents of the community?
- **Debris prevention**
 - Ways to protect property



Identify Debris

- **Will vary from community to community**
 - Planners should identify items specific to their community
- **Industries and commercial enterprises**
 - What roles does the business community play?
- **Consider travelling debris**
 - Hurricanes
 - Floods
 - Tornadoes

Debris Generating Events

- **Hurricanes**
 - Powerful Winds
 - Storm Surge
 - Rain
- **Earthquakes**
 - Destruction closest to epicenter
- **Tornadoes**
 - High winds
 - Projectile materials

Debris Generating Events

- **Floods**

- Destruction to personal property
- Damage to trees, soil & sediment
- Impact to infrastructure

- **Wildfires**

- Mixed debris, charred waste
- Loss of vegetation increasing mud slides

- **Winter storms**

- Vegetative debris
- Snow/ice accumulations

- **Volcanoes**

- Landslides
- Debris avalanche



Estimating Debris

- **Forecasting is paramount in determining extent of plan**
 - **Types of disasters**
 - **Scope of debris**
- **Previous experience or forecasting tools?**
- **U.S. Multi-Hazard Program (HAZUS-MH)**
- **USACE**
- **Private companies**

Environmental Regulations

- **Federal, State & Local regulations**
- **Include a list of regulations as part of plan**
- **Include how debris type must be managed accordingly**
- **Update contact list of applicable agencies**
 - **FEMA**
 - **USACE**
 - **EPA**

Debris Capacity

- **Assess region's capacity to manage debris**
- **Facilities**
 - What is the current inventory?
 - What is their capacity?
 - What additional debris can they accommodate?
- **Develop map and contact list for facilities**
- **Transportation/movement plans**
- **What if disaster meets capacity limits?**

Debris Sites

- **Most common improvement – pre-select sites!**
- **Identify space and sites**
 - Staging
 - Storing
 - Processing
- **Temporary locations**
 - Local Parks
 - Industrial/military facilities
 - HAZMAT
 - Distribution of reusable/recycled products?
- **Ensure local/regional codes are followed**



Debris Sites

- **Sites should include the following:**
 - Sufficient in size with appropriate topography
 - Located away from potable water sources
 - Not located in a wetland or floodplain
 - Free from obstructions
 - Public lands
- **Include communities in site selection**
- **Include locations in briefings to public**
- **Establish hours of operation**

Equipment Needs

- Identify equipment and supplies needed to implement plan
- Include administrative and collection needs
 - Chainsaws
 - Generators
 - Road signs
 - Jack hammers
 - Wood grinders
 - Conveyors
- Pre-negotiate any mutual aid agreements and contracts



Communication Plans

- Normal methods include radio, cellular phone, etc.
- Clear descriptions of who can make decisions
- Ensure cross jurisdictional/agency plans
 - Police
 - Health Officials
 - Emergency managers
 - Industrial/commercial agencies
- Include other community organizations

Communication Plans

- **Public communications**
 - Provide public education before and during operations
 - When, where, how debris collection will occur
 - Special materials
- **Radio/television announcements**
- **Telephone hotlines**
- **Websites**
- **Timely, consistent, updatable and right language!**

Debris Prevention

- **Should be considered part of the plan**
- **Reduction in how much debris is generated**
 - Educational outreach
 - Building code modifications
 - Planning/zoning changes
- **Hazard Mitigation Plans**
- **Specific measures based on specific threats**
 - Hurricanes
 - Earthquakes

Harmful Materials

- Include planning for controlling and diverting HAZMATs
- Asbestos
- PCBs
- Storage Tanks
- Firearms/Ammunition

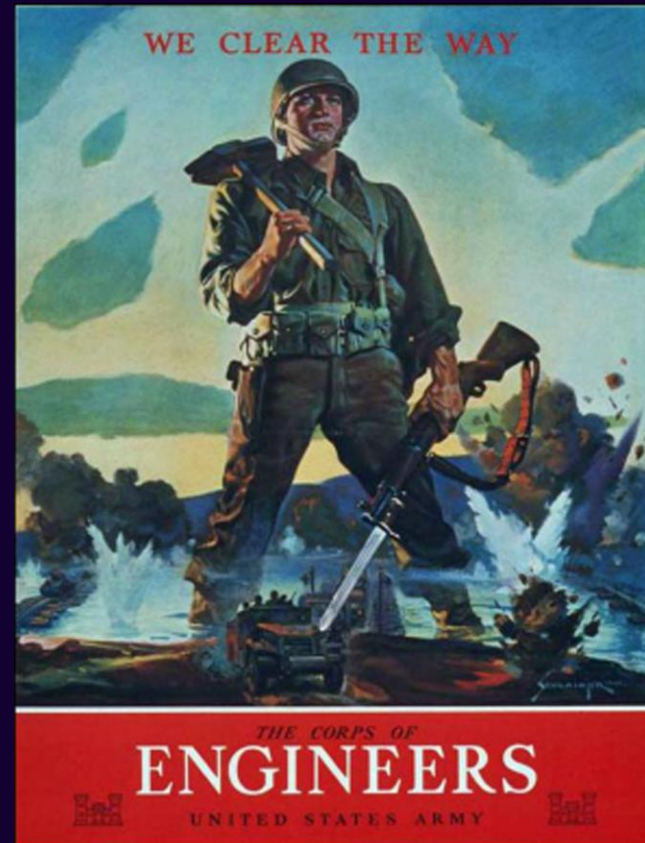


Recycling

- **Reuse of materials can reduce burden on facilities**
 - **When does it start?**
- **Think outside the box!**
- **Natural disasters generate a lot of reusable debris**
- **Pre-identify local recyclers**
- **Place sites close to debris area**
- **1994 LA Earthquake**
- **Waste to energy options?**

Resources Available

- State
- EMAC/Mutual Aid
- Private sector
- Federal
 - FEMA
 - U.S. Army Corps of Engineers
 - EPA
 - Coast Guard



Summary

- **Plan should cover response and recovery**
- **Plan should be deployable to any scenario**
- **Know the needs of your jurisdiction**
 - **Sites**
 - **Equipment**
- **Don't be afraid to think outside the box!**

TWENTY QUESTIONS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



DICK

HERB



VAN



FLORENCE



ALDO RAY