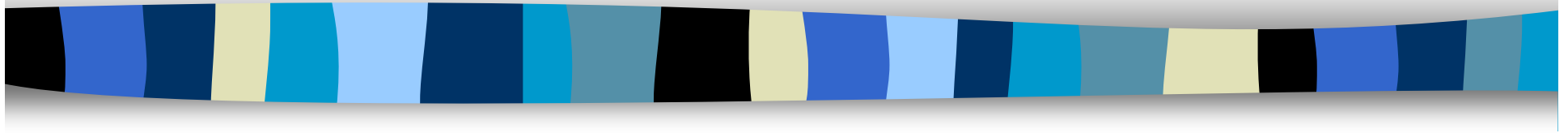


# DEBRIS MANAGEMENT



FOR PUBLIC  
ASSISTANCE



# DEBRIS REMOVAL PROBLEMS AFTER A DISASTER EVENT

- REMOVAL OF DEBRIS IN CRITICAL ROADWAYS & FACILITIES
- REMOVAL OF DEBRIS ON CURBSIDES
- HAULING DEBRIS FROM ELIGIBLE FACILITIES TO TEMPORARY OR PERMANENT DISPOSAL SITES



# DEBRIS REMOVAL PROBLEMS CONTINUED

- OPERATION OF TEMPORARY DEBRIS STORAGE & REDUCTION SITES
- DEMOLITION OR REMOVAL OF DISASTER-DAMAGED STRUCTURES & FACILITIES

# PRE-PLANNING



PRE-PLAN WHAT YOU  
WILL DO BEFORE A  
DEBRIS GENERATING  
EVENT OCCURS



# COUNTY DEBRIS PLAN

- AT THE PRESENT TIME A DEBRIS PLAN IS NOT NECESSARY FOR FEMA REIMBURSEMENT:
- HOWEVER.....
- IN THE NEAR FUTURE WE EXPECT FEMA TO REQUIRE A DEBRIS PLAN AS PART OF THE ELIGIBILITY REQUIREMENTS FOR REIMBURSEMENT



# DEBRIS PILOT PROGRAM

- FROM JAN 2007-DEC 2008 A NEW FEMA PILOT PROGRAM IS IN EFFECT
- PILOT PROGRAM ALLOWS STRAIGHT TIME ELIGIBILITY FOR DEBRIS REMOVAL ONLY
- INDIANA IS BE ELIGIBLE TO PARTICIPATE
- PILOT PROGRAM ELIGIBILITY NOT CONTINGENT ON HAVING A DEBRIS PLAN

# Debris Coordination Committee



Establish a Debris Coordination  
Committee before a debris/disaster  
event.



DESIGNATE AN  
AGENCY/DEPT TO BE  
RESPONSIBLE FOR THE  
COORDINATION OF ALL  
DEBRIS REMOVAL



# ADVANCE CONTRACT INITIATIVE

- CONTRACTORS PRE-SELECTED THRU BID PROCESS
- PRICE PRE-SET THRU BID PROCESS
- PRIORITIES PRE-SET BEFORE DEBRIS/SNOW EVENT



# TYPES OF DEBRIS REMOVAL & DISPOSAL CONTRACTS

## ■ TIME & MATERIALS CONTRACTS

- LIMITED TO 70 HRS OF ACTUAL EMERGENCY DEBRIS CLEARANCE WORK

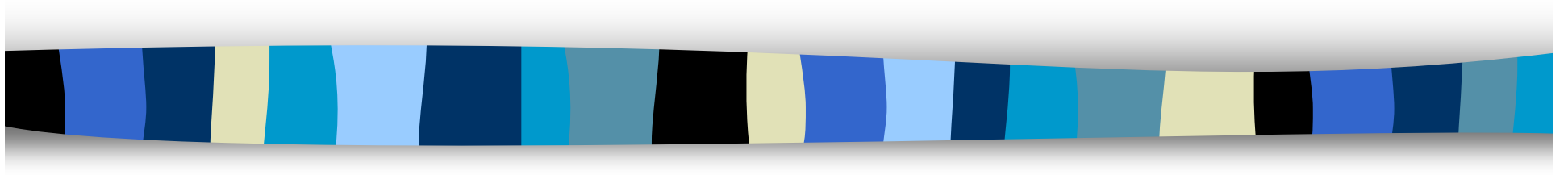
## ■ UNIT PRICE CONTRACT

- USED WHEN SCOPE OF WORK IS DIFFICULT TO DEFINE & BASED ON ESTIMATED QUANTITIES

## ■ LUMP SUM CONTRACT

- USED ONLY WHEN SCOPE OF WORK IS CLEARLY DEFINED

# DEBRIS CLEARANCE



REMOVAL AND  
DISPOSAL  
STRATEGY



# CRITICAL STEPS NECESSARY TO CLEAR, REMOVE & DISPOSE OF DEBRIS FOLLOWING A NATURAL DISASTER

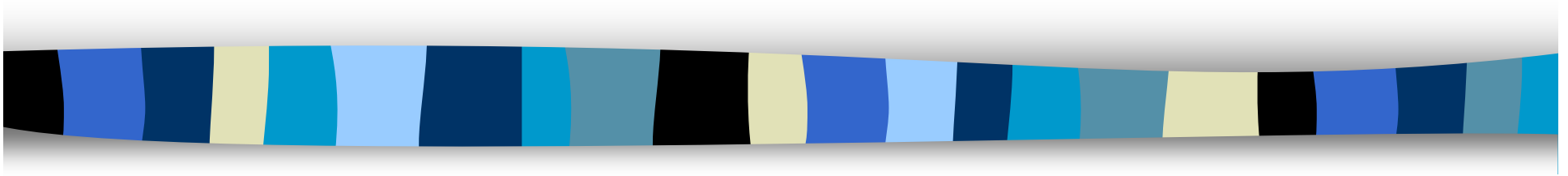
- PRELIMINARY DAMAGE ASSESSMENT
- PHASE 1: DEBRIS CLEARANCE OPERATIONS
- PHASE 2: DEBRIS REMOVAL AND DISPOSAL OPERATIONS



# CONDUCT A JOINT PDA TO:

- DEVELOP INITIAL DEBRIS ESTIMATES
- IDENTIFY CRITICAL ROUTES
- PRIORITIZE KEY ROUTES

# PHASE 1:



EMERGENCY DEBRIS  
CLEARANCE  
OPERATIONS



ROADWAY DEBRIS SHOULD BE QUICKLY MOVED TO THE SIDE OF THE ROAD TO PROVIDE ACCESS TO DEVASTATED AREAS TO ALLOW FOR:

- MOVEMENT OF EMERGENCY VEHICLES
- LAW ENFORCEMENT
- RESUMPTION OF CRITICAL SERVICES
- DAMAGE ASSESSEMENT OF CRITICAL PUBLIC FACILITIES & UTILITIES



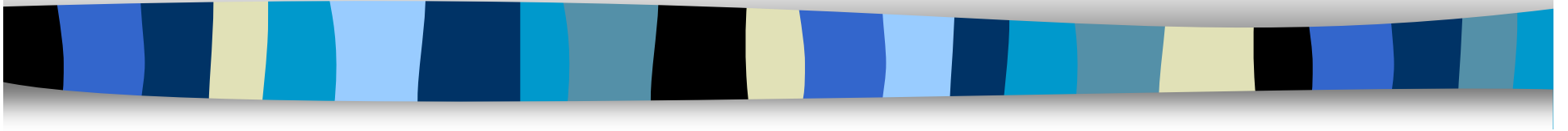
# INITIATE DEBRIS CLEARING OPERATIONS USING:

- FORCE ACCOUNT PERSONNEL AND EQUIPMENT
- MUTUAL AID PROVIDERS
- VOLUNTEERS
- RENTAL EQUIPMENT
- LOCAL CONTRACTORS



THE DESIGNATED  
RESPONSIBLE AGENCY  
SHOULD COORDINATE ALL  
DEBRIS REMOVAL AND  
DISPOSAL ACTIVITIES  
INCLUDING GARBAGE  
PICKUP

# PHASE 2:



DEBRIS REMOVAL AND  
DISPOSAL OPERATIONS



## DURING PHASE 2:

- DECIDE WHERE TO DISPOSE OF THE DEBRIS
- DECIDE IF TEMPORARY STORAGE SITES ARE NEEDED
- DECIDE IF VOLUME REDUCTION OR OTHER PROCESSING IS REQUIRED
- DETERMINE TYPE OF CONTRACTS TO USE
- INITIATE DEBRIS REMOVAL & DISPOSAL OPERATIONS



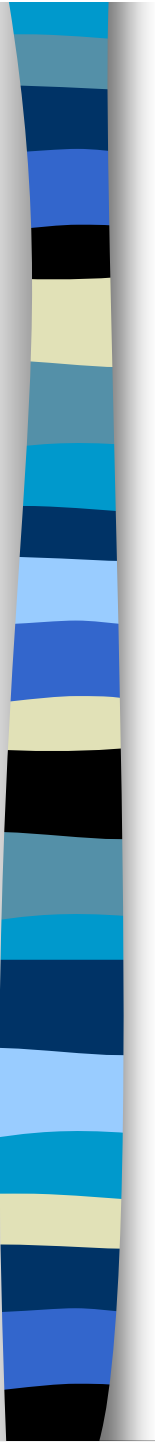
## THE RESPONSIBLE AGENCY SHOULD BE PREPARED TO REMOVE AND DISPOSE OF THE FOLLOWING TYPES OF DEBRIS:

- YARD TRASH SUCH AS OUTDOOR FURNITURE AND TRASHCANS
- BUILDING DEBRIS, SUCH AS ROOFS, SHEDS, BLOCK WALLS AND CHIMNEYS
- PERSONAL PROPERTY, SUCH AS TREE BLOW-DOWN & BROKEN LIMBS
- CLOTHING, APPLIANCES, AND FURNITURE
- SILT FROM FLOODING AND EARTH & ROCKS FROM LANDSLIDES



# TEMPORARY DEBRIS STORAGE AND REDUCTION SITE CONSIDERATIONS

- SITE OWNERSHIP?
- SITE SIZE?
- SITE INGRESS/EGRESS?
- SITE ENVIRONMENTAL CONCERNS?



REMOVAL OF UTILITY  
POLES, POWER, TELEPHONE  
& CABLE LINES,  
TRANSFORMERS & OTHER  
ELECTRICAL DEVICES IS  
THE RESPONSIBILITY OF  
THE PRIVATE/PUBLIC  
OWNER/OPERATOR



# VOLUME REDUCTION METHODS

- BURNING WOODY DEBRIS
- CHIPPING AND GRINDING
- RECYCLING



# VOLUME REDUCTION METHODS- CONTINUED

## ■ BURNING WOODY DEBRIS

- CONTROLLED OPEN AIR BURNING
- AIR CURTAIN PIT BURNING
- PORTABLE AIR CURTAIN BURNER



## VOLUME REDUCTION METHODS- CONTINUED

- CHIPPING AND GRINDING
  - WOODY DEBRIS
- RECYCLING
  - METALS
  - SOIL
  - CONSTRUCTION & DEMOLITION MATERIALS
  - WOOD



# TYPES OF DEBRIS REMOVAL & DISPOSAL CONTRACTS

## ■ TIME & MATERIALS CONTRACTS

- LIMITED TO 70 HRS OF ACTUAL EMERGENCY DEBRIS CLEARANCE WORK

## ■ UNIT PRICE CONTRACT

- USED WHEN SCOPE OF WORK IS DIFFICULT TO DEFINE & BASED ON ESTIMATED QUANTITIES

## ■ LUMP SUM CONTRACT

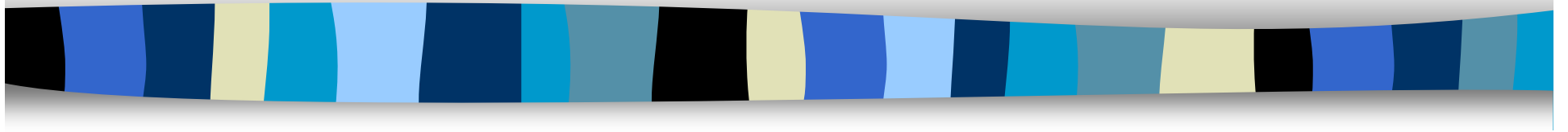
- USED ONLY WHEN SCOPE OF WORK IS CLEARLY DEFINED



# APPLICANT MONITORING RESPONSIBILITIES

- THE APPLICANT SHOULD EMPLOY FULL TIME, TRAINED DEBRIS MONITORS TO ACCOUNT FOR THE ACTUAL QUANTITY OF DEBRIS BEING HAULED AND DISPOSED OF UNDER A UNIT PRICE CONTRACT
- PAYMENT UNDER A UNIT PRICE CONTRACT IS NORMALLY MADE ON THE BASIS OF LOAD TICKETS

# ESTIMATING DEBRIS QUANTITIES



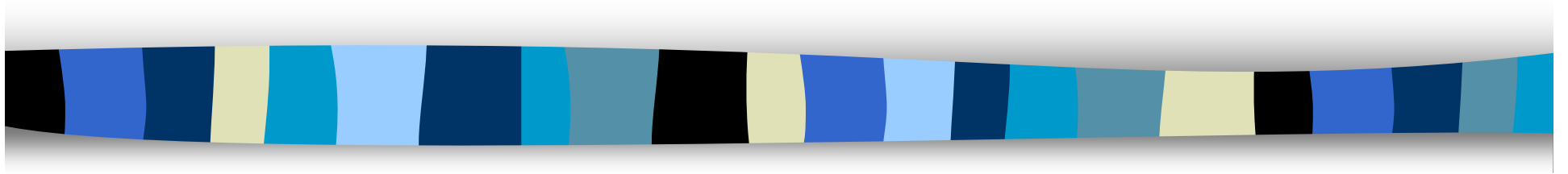
USE THE CUBIC YARD METHOD



# SIMPLE METHOD

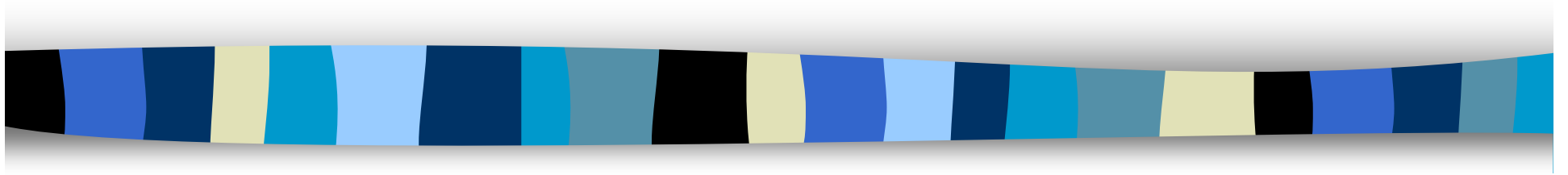
- ESTIMATE THE NUMBER OF TRUCKLOADS OF DEBRIS
- MULTIPLY THE ABOVE NUMBER BY THE CUBIC YARD SIZE OF THE TRUCK BED
- THE SIMPLE METHOD WORKS FOR THE PRELIMINARY DAMAGE ASSESSMENT

# ADVANCED METHOD

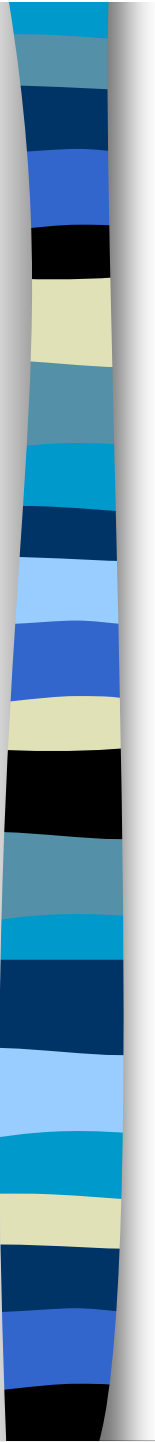


**SEE DEBRIS MANAGEMENT  
GUIDE OR JOB AID**

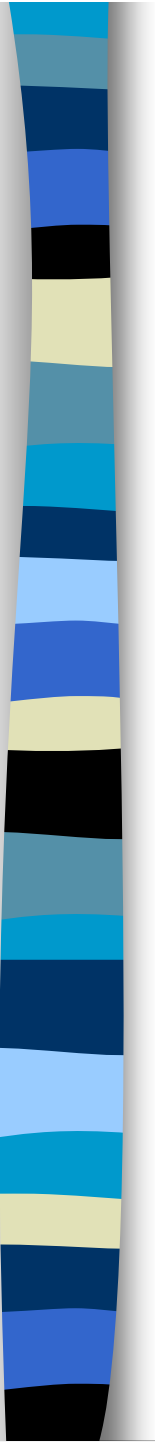
# CURBSIDE DEBRIS REMOVAL



PRIVATE PROPERTY  
ISSUES



REMOVAL OF DEBRIS  
FROM PRIVATE PROPERTY  
IS PRIMARILY THE  
RESPONISBILITY OF THE  
INDIVIDUAL PROPERTY  
OWNER, AIDED BY  
INSURANCE SETTLEMENTS  
OR VOLUNTEER  
ORGANIZATIONS



WITH ISSUES OF “HEALTH &  
SAFETY” & “ECONOMIC  
RECOVERY” FEMA MAY  
ALLOW CURBSIDE PICKUP



# ELIGIBILITY OF CURBSIDE PICK-UP

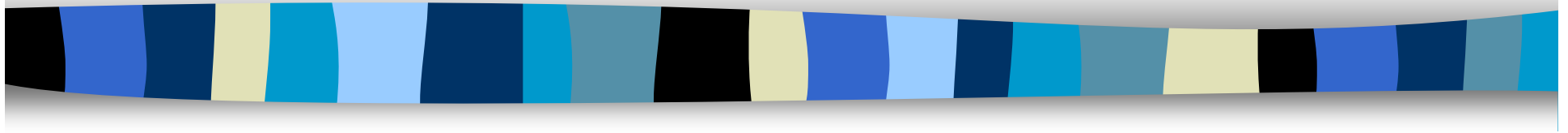
- WOODY DEBRIS AND YARD WASTE MUST BE MOVED TO RIGHT-OF-WAY
- HOUSEHOLD WASTE, SUCH AS DAMAGED PERSONAL GOOD, MOVED TO RIGHT-OF-WAY
- DEBRIS MUST BE SORTED AS INSTRUCTED



## ELIGIBILITY OF CURBSIDE PICK-UP, CONTINUED

- HOMEOWNER SHOULD NOT MIX GARBAGE WITH DEBRIS
- INSURANCE & INDIVIDUAL ASSISTANCE PAYMENTS WILL BE DEDUCTED FROM THE PROJECT WORKSHEET

# HAZARDOUS MATERIALS DISPOSAL



DURING EMERGENCY  
RESPONSE



## EMERGENCY RESPONSE ACTIVITIES RELATED TO HAZARDOUS MATERIALS

- IN THE RESPONSE PHASE OF A DISASTER, THERE MAY BE A NUMBER OF REQUIREMENTS RELATED TO CONTAMINATION BY HAZARDOUS & TOXIC WASTES, RETRIEVING & DISPOSING OF ORPHAN DRUMS & BARRELS, ETC.
- CHECK WITH IDEM OR FEMA FOR OTHER THAN HOUSEHOLD HAZARDOUS WASTE (EPA RESPONSIBILITY)