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STATE OF LOUISIANA

COMPREHENSIVE PLAN FOR DISASTER CLEAN-UP AND DEBRIS MANAGEMENT

PREPARED BY **THE LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**

Hurricane Katrina's wrath was felt in Louisiana, Mississippi and Alabama. Of the combined damage from the three states, 75 percent of the destruction was in Louisiana.

The magnitude of the tasks that faced the state after such destruction made it apparent that a proactive posture is needed to prepare for future catastrophic events. This Comprehensive Plan for Disaster Clean-up and Debris Management documents some of the lessons learned and extends beyond those lessons to allow this state to formulate a plan that allows it to address future disasters in a cohesive, organized and efficient manner, while ensuring protection of public health and the environment.

The removal and proper management of debris after these two hurricanes was and continues to be a critical element of the recovery efforts.[1] Without debris removal, there can be little rebuilding and repopulating. All kinds of debris, household contents, houses, cars, vessels, trees, white goods, electronics and more must be removed from the streets in order for citizens to return to their homes and businesses. Many homes and other structures need to be completely demolished to allow the recovery to continue.

The LDEQ prepared a Hurricane Katrina Debris Management Plan which was released on September 28, 2005, and revised on October 14, 2005. Additionally during the 2006 Regular Session of the Louisiana Legislature, Senate Bill 583 (SB 583, Act 662) was enacted. SB 583 directs the LDEQ to develop and implement a comprehensive debris management plan for certain debris generated by natural disasters. The bill states the goal of the comprehensive debris management plan is to "reuse and recycle material, including the removal of aluminum from debris, in an environmentally beneficial manner and to divert debris from disposal in landfills to the maximum extent practical and efficient which is protective of human health and the environment." Among other things, SB 583 dictates the use of the following debris management practices, in order of priority, to the extent they are "appropriate, practical, efficient, timely and have available funding: recycling and composting; weight reduction; volume reduction; incineration or co-generation; and land disposal."

The LDEQ, through this plan, utilizes portions of its 2005 Debris Management Plan in conjunction with the dictates of SB 583. In other words, this plan builds upon LDEQ's existing plan and is intended to be a living document. As such, it will be amended, as necessary, to address specific challenges as they arise.

[1] Hurricane Katrina generated more than 22 million tons of C&D debris. The largest landfill in Louisiana typically processes about one million tons a year.

Recycling and Beneficial Use

This plan is designed to encompass LDEQ's goal of reduction, conservation and management relative to debris management. The plan promotes reduction of the debris stream utilizing chipping, grinding, recycling or other methodologies. It promotes conservation and management by ensuring that adequate capacity exists for disposal and management of disaster-generated debris, including that generated by redevelopment and repopulation by businesses and residents. The plan also encompasses the legislative goal to reduce debris 50% by volume and 50% by weight prior to disposal in a landfill.

Local governments should identify sites where recycling and beneficial use options may be utilized. Local governments should have standby contracts to provide for the oversight, implementation and operation of recycling and beneficial use projects associated with disaster-generated debris activities. The standby contracts should include provisions to ensure that marketing outlets are available to receive and process the material resulting from the recycling and beneficial use activities. The recycling and beneficial use options provided below and later in this document will contribute to the plan goals.

Bricks and concrete removed from homes during the demolition process may be recycled utilizing stone crushing equipment. Equipment utilized for this purpose shall be operated in accordance with manufacturers' instructions and any applicable LDEQ correspondence or guidance.

Debris Management Definitions[2]

Construction and Demolition Debris –
Non-hazardous waste generally considered not water-soluble, including but not limited to:

- Metal, concrete, brick, asphalt, roofing materials (shingles, sheet rock, plaster), or lumber from a construction or demolition project
- Furniture, carpet, painted or stained lumber contained in the demolished buildings
- The incidental mixture of construction and demolition debris with asbestos-contaminated waste. (i.e., incidental asbestos-contaminated debris that cannot be extracted from the demolition debris)
- Yard Trash (vegetative matter resulting from landscaping and yard maintenance, including tree and shrubbery leaves and limbs, grass clippings, and flowers.)

Debris Management Site – is a location that has been identified by the local government and evaluated and approved by LDEQ for the purposes of staging, reduction or final disposal of disaster-generated debris.

The activities conducted at these sites might include:

- Woodwaste Chipping and Grinding and/or Composting Woodwaste Burning Operations
- Construction and Demolition Debris Staging or Disposal
- Staging of Vessels and Vehicles
- Staging of Special Debris (Munitions and Ordnance, Household Hazardous Materials, Liquefied Petroleum Gas Tanks, Electronic Goods, White Goods and Tires)

[2] These definitions apply to debris management activities related specifically to the emergency response activities associated with the aftermath of a natural disaster (e.g. a hurricane, tornado, etc.)

Vegetative Debris – is green woody material consisting of trees, limbs, and branches, generated by the clearing of downed and damaged trees. It does not include processed wood or other lumber used in construction.

Debris Management Sites

In general, local governments will need to determine appropriate sites for the following temporary activities: staging and transfer of construction and demolition (C&D) debris; staging of vehicles and vessels; staging of household hazardous waste; chipping, grinding and/or burning of vegetative debris; composting of vegetative debris; staging of munitions and ordnances; staging of white goods, electronic goods and other consumer items; and recycling and beneficial use activities. Use of a site as a permanent disposal site may also be considered.

The sites that were approved by LDEQ for use after Hurricanes Katrina and Rita and which met all applicable monitoring and operational requirements, do not need to obtain prior approval from LDEQ for use following a future disaster provided there have been no significant changes in surrounding land use and potential receptors, and the site's authorization to operate was not rescinded or revoked by LDEQ as a result of non-compliant activity during its previous use. The sites must still comply with the criteria listed in the section below. The sites will be automatically approved and available for use by local and parish governments to manage disaster-generated debris. This approval is ONLY for the purposes for which they were previously approved. For instance, if a site was approved for staging debris, it is automatically approved for staging debris for future disasters, but it IS NOT approved for another use such as chipping and burning of vegetative debris. If a site is reactivated, the local governing authority shall notify LDEQ within 5 days of its reactivation. LDEQ will notify the local governing authority if a site cannot be approved for use as previously approved.

Finding the Right Location

When selecting a proposed debris management site, the local government should consider the following:

- What is the proposed use for this site?
- Is it easily accessible?
- Is it removed from obstructions such as power lines and pipelines?
- Is the site considered to be a wetland area, as defined by the U.S. Army Corps of Engineers?
- Is the general site topography conducive to the activity that will be conducted there?
- Are there nearby residences and/or businesses that will be inconvenienced or adversely affected by use of this site?
- Is the size sufficient for its intended use?
- Is the soil type suitable for its intended use?
- Is the site a previously authorized location that is being reactivated for use?
- Is the site located near water bodies such as rivers, lakes or streams and their proximity to occupied dwellings?
- What is its proximity to the impacted area?

In addition to the criteria listed above, LDEQ will evaluate proposed burn sites based on their proximity to water bodies such as rivers, lakes or streams, and occupied dwellings.

Site Approval

In order for a location to be considered by the LDEQ as a debris management site, the local government must submit an Emergency Disaster Cleanup Site Request Form to LDEQ. The form is available on LDEQ's website at http://www.deq.louisiana.gov/portal/tabid/259/Default.aspx. Authorizations may be issued prior to or following a site inspection by LDEQ personnel for staging areas to be used for temporary storage and chipping, grinding or burning of disaster-generated debris. Sites that have been identified by local government and evaluated and authorized by LDEQ for use in response to a hurricane disaster will be provided on LDEQ's website. If the site is approved, LDEQ will inform the local government and will document the approval, usually by letter. The letter will also contain any restrictions or operational conditions that must be adhered to relative to the site. Operational conditions will be outlined in an Interim Operational Plan.

Site Closure

Each temporary debris management site with the exception of authorized vegetative debris and C&D debris disposal sites, and sites where ash is land-applied, will eventually to the extent practicable, have disaster-related debris cleared and be restored to its previous condition and use.[3] Closure must be in accordance with approved LDEQ practices and/or the Interim Operational Plan. Sampling of soil and/or ash that is left at the site may be required by the LDEQ. The local governing authority will be required to take necessary steps to ensure that no environmental contamination is left on-site. Monitoring and/or remediation of a site must be coordinated through the LDEQ's Office of Environmental Assessment. Closure should be accomplished within the time limits established by the LDEQ.

C&D Debris Management

LDEQ recognizes that decisions on the disposition of wastes and debris need to be made at the collection point. Use of best professional judgment will be necessary to determine the ultimate disposition of collected material. Contractors chosen by the local governing authority, or by state or federal agencies, should possess knowledge of applicable regulations and of any LDEQ Declarations of Emergency and Administrative Order in order to correctly route waste streams to appropriate sites and/or facilities.

C&D Debris Staging/Transfer

LDEQ expects a considerable amount of the disaster-generated C&D debris to be staged at temporary sites and transported to permitted Type III facilities or to be placed into LDEQ authorized C&D debris disposal sites. Materials approved for receipt at these facilities include roof shingles, roofing materials, carpet, insulation, wallboard, treated and painted lumber, etc.

Site operations will comply with an Interim Operational Plan provided by the LDEQ. It is the responsibility of the local government to provide this Interim Operational Plan to any entity that may be charged with operation of the site.

Arrangements should be made to segregate unsuitable materials such as household garbage, white goods, asbestos containing materials (ACMs), and household hazardous waste. These materials should be placed in containers and transported to facilities that are approved for their receipt. If more than de minimus amounts of these wastes are present, the waste should be handled in a manner consistent with the most stringent management technique necessary for the waste stream.

C&D Debris Grinding

In order to contribute to the reduction in volume of C&D debris that may be destined for disposal,

[3] If the site is used for C&D debris disposal and the debris will remain in place, site closure shall be in accordance with the Interim Plan and specific tasks such as deed recordation must be accomplished. If the site is used for vegetative debris burning, the ash generated may be land applied.

grinding of C&D debris may be proposed for utilization by the local government. LDEQ will endeavor to ensure that the location chosen for this activity is thoroughly evaluated to make any impacts as minimal as possible. Grinding of C&D debris will help ensure reduction in the volume of material to be hauled to landfills for ultimate disposal.

C&D debris grinding shall be performed in accordance with a plan that has been prepared by the local government and reviewed and approved by LDEQ. It is the responsibility of local government to provide the plan to any entity that may be charged with operation of the site. All equipment (grinders, chippers, air curtain burners) shall be operated in accordance with manufacturers' instructions and any applicable LDEQ permits or directives.

Local, state and federal partners associated with the C&D debris grinding operation will be advised of locations that have been approved for this purpose. All sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other LDEQ correspondence or guidance.

C&D Debris Burning

In order to contribute to the volume and weight reduction of C&D debris that may be destined for disposal, the burning of C&D debris may be proposed for utilization by the local government. As dictated by circumstances and contingent upon applicable local, state and federal requirements, occasions may arise where LDEQ will allow C&D debris to be burned. The burning of C&D debris may be considered on a case-by-case basis, after review of the specific circumstances of the emergency. Any burning must utilize equipment to reduce emissions if the LDEQ and respective local governing authority deem the use of equipment necessary to protect public health and the environment.

LDEQ will endeavor to ensure that the location chosen by the local governmental entity for this activity is thoroughly evaluated and deemed acceptable in order to minimize, to the greatest extent possible, any potential impacts to the environment. The burning of C&D debris shall be performed in accordance with a plan that has been prepared by the local government and reviewed and approved by the LDEQ. It is the responsibility of local government to provide the plan to any entity that may be charged with operation of the site. All equipment (grinders, chippers, air curtain pit burners) shall be operated in accordance with manufacturers' instructions and any applicable LDEQ permit.

Local, state and federal partners associated with the C&D burning operation will be advised of locations that have been approved for this purpose. All sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other LDEQ correspondence or guidance.

Ash generated as a result of burning of C&D debris must be analyzed to determine if contaminants are present that would render the material unsuitable for use as a soil amendment, or would render the material a hazardous waste. Disposal or use of this ash can occur ONLY AFTER review of analytical results by LDEQ.

C&D Debris Disposal

To the extent possible and practicable, C&D debris will be disposed of in permitted C&D Debris Landfills. However, due to the devastation caused by a natural disaster, it may be necessary to allow accumulation and disposal of C&D debris at sites that are deemed appropriate but have not had time to go through the normal permitting process. LDEQ will evaluate requests by local governments and, if it is determined to be warranted for an efficient, expeditious and environmentally safe response, will allow disposal at authorized temporary C&D disposal sites. If approved, site operations must comply with the Interim Operational Plan provided by LDEQ.

Vegetative Debris Management

Every effort will be made to consolidate material from fallen trees and other vegetative debris in an attempt to beneficially use as much of this material as possible. Where local industries can utilize the wood for fuel, it will be used in that manner. Material will be chipped or otherwise reduced in volume to allow for composting or other beneficial reuse. This debris may be used in coastal restoration projects, as compost, or as fuel. It may not be disposed of in a landfill as the first option, but may be used as a component of the cover system for a landfill or a means for providing erosion control. The burning of vegetative debris may be allowed on a case-by-case basis if it is deemed to be necessary.

Vegetative Staging/Grinding/Chipping/Composting

Materials approved for receipt at these sites include vegetative debris such as yard waste, trees, limbs, stumps, branches and untreated or unpainted wood. Sites should be identified as chipping/grinding/composting sites and/or burn sites. All sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other LDEQ correspondence or guidance. It is the responsibility of local government to provide the LDEQ plan, correspondence or guidance to any entity that may be charged with operation of the site. All equipment (grinders, chippers, air curtain burners) shall be operated in accordance with manufacturers' instructions and any applicable LDEQ permit.

Chipping and grinding provide material for use in landscape mulch, compost preparation, coastal stabilization/restoration projects, and industrial boiler fuel. These options will be the top priorities for uses of vegetative debris.

In preparing compost and/or mulch piles, care should be taken to reduce the potential for spontaneous combustion. Placing ground organic debris into piles can result in rapid microbial decomposition that generates heat and volatile gases. Temperatures in large piles containing readily degradable debris can rise to greater than 160° F, increasing the chance of spontaneous combustion.

Spontaneous combustion is more likely in large, dense piles of debris under dry, windy conditions. Maintaining windrows with a height of less than 6 feet and base width of less than 10 feet provides greater surface area for dissipation of heat and volatile gases, thereby minimizing the risks of spontaneous combustion.

Turning piles when temperatures reach 160 degrees can also reduce the potential for spontaneous combustion by allowing accumulated heat and gases to escape. Turning piles when temperatures decline can restore microbial activity and composting temperatures. Optimal moisture should be maintained to reduce combustibility. As a rule, optimal moisture is obtained when squeezing a handful of material yields a drop or two of water. Shredded leafy debris will decompose more rapidly and retain more heat than wood chips. Sufficient wood chips or other bulky materials should be mixed with leafy material to ensure rapid diffusion of heat and gases during the early stages of decomposition.

Large piles or windrows should be located away from wooded areas, power lines and structures. They should be accessible to fire fighting equipment, if a fire were to occur.

Vegetative Debris Burn Sites

Proximity to roads and dwellings is of particular importance in the selection of sites for this activity. LDEQ may approve open burning of vegetative debris on a case-by-case basis. As with all proposed debris management sites, open burning locations must be approved by LDEQ in advance of their use. Even though, burning of vegetative debris is a less desirable option than the reuse of that material in another manner as described above, local governments may utilize open burning during the initial disaster response for specified timeframe (e.g. 2 to 4 weeks) to allow for the reestablishment of critical arteries for transportation, emergency response and governmental operations. In addition where continued burning is necessary, any burning shall utilize equipment to efficiently combust waste and reduce emissions if LDEQ or local governing authority deem the use of equipment necessary to protect public health and the environment. Local, state and federal partners associated with the vegetative debris burning operation will be advised of locations that have been approved for this purpose. All sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other LDEQ correspondence or guidance.

Air Curtain Pit Burners (Air Curtains or Pit Burners) should be operated in accordance with manufacturers' instructions and with any applicable LDEQ permits or directives.

Ash from Vegetative Debris Burn Sites may be land applied on site or off site. Whenever possible, soil test data and analysis of the ash should be available to determine appropriate application rates. Ash should not be applied during periods of high winds. Ash should not be applied within 25 feet of surface waters or ditches or drains on vegetated sites. These distances should be doubled on sites that are not vegetated, and the ash should be promptly incorporated into the soil. As an alternative to land application, ash from combustion of clean vegetative debris may be utilized as a blending or stabilization component, chemical activator, replacement component in masonry products or a component of pozzolanic concrete. Ash that cannot be land applied or used in an alternative manner shall be disposed at a permitted solid waste landfill.

Assistance in obtaining soil test data and waste analysis of ash should be available through parish offices of the LSU Cooperative Extension Service.

Vegetative Debris Disposal

To the extent possible and practicable, vegetative debris that cannot be beneficially used will be disposed of in permitted landfills. However, due to the devastation caused by a natural disaster, it may be necessary to allow accumulation and disposal of vegetative/woody debris at sites that are deemed appropriate but have not had time to go through the normal permitting process. LDEQ will evaluate requests by local governments and, if it is determined to be warranted for an efficient, expeditious and environmentally safe response, will allow disposal at authorized temporary vegetative/woody debris disposal sites. If approved, operations must comply with the Interim Operational Plan provided by LDEQ.

Of the total green and woody debris intended for final disposal in a landfill, fifty percent shall be reduced by volume and fifty percent by weight prior to transport to a landfill. This debris may be used in coastal restoration projects, as compost, or as fuel. It may not be disposed of in a landfill as the first option, but may be used as a component of the cover system for a landfill or a means for providing erosion control.

Marsh Debris Management

Retrievable Debris

Retrievable debris items (e.g., vessels, containers, orphan drums, propane tanks, vessels, vegetative/woody matter, white goods, etc.) that are not in a marsh but are located in or near land or a water-body adjacent to a wetland marsh area shall be retrieved for transport to an authorized debris management site. Those items will then be either recycled and/or disposed in accordance with this plan.

Retrievable debris items that are in the wetland marsh area shall be retrieved in accordance with ESF-10 protocol[4] and transported to an authorized debris management area. Those items will then be either recycled and/or disposed in accordance with this plan.

The debris should, if possible, be retrieved during the initial recovery operation, managed and transported to facilities that are approved for their receipt and management. These debris recovery and removal activities are not expected to result in appreciable habitat disturbance.

Irretrievable Debris

Irretrievable debris items that are located in the marsh, especially sensitive marsh areas, shall be managed in accordance with ESF-10 protocol. These debris management activities are expected to result in appreciable habitat disturbance and therefore, would require an expedited or emergency trustee consultation.

[4] ESF-10 – Emergency Support Function #10 describes the lead coordination roles, the division and specification of responsibilities among federal agencies, and the national, regional, and onsite response organizations, personnel, and resources that may be used to support response actions. ESF #10 is applicable to all federal departments and agencies with responsibilities and assets to support state, local, and tribal response to actual or potential oil or hazardous materials incidents.

Marsh Burning

Burning is a practice utilized in marsh areas, especially in areas designated as a refuge. Refuge areas utilize marsh fires on a 2 to 3 year rotational schedule to manage the accumulation of marsh grass and other vegetative/woody debris. The refuges and other entities (i.e. private, parish, state, or federal) owning marsh areas that are non-oil contaminated areas may utilize this method to address the accumulations of marshy grass and debris generated as a result of a natural disaster. The utilization of a marsh fire to address the disaster-generated debris must be communicated to and coordinated with local, state and federal entities (i.e., parish government, property owners, Department of Natural Resources, Department of Wildlife and Fisheries, Department of Environmental Quality, Environmental Protection Agency, United States Coast Guard, United States Army Corps of Engineers, Parish/Local Fire Department) participating in the disaster response and management activities. The plans and procedures pertaining to marsh burning are to be evaluated and authorized by all entities involved in the effort. The plan must take into consideration the potential presence of hazardous, flammable, ignitable or reactive materials that could impact the marsh burning operation.

This is needed so that the proper environmental and personal safety precautions will be set forth in the marsh burning plans and procedures.

Transportation in the Marsh

The specific methods of maneuvering transport vehicles (i.e. marsh buggies, pontoons, etc.) in the various areas of the marsh for the purposes of debris management and retrieval activities will need the concurrence of the Department of Natural Resources (Coastal Management), the Louisiana Department of Wildlife and Fisheries and other pertinent state level agencies. This coordination is also needed to address potential navigation hazards or obstructions posed by the presence of disaster-generated debris in the marsh areas.

Special Debris Management

Munitions and Ordnance

Munitions or ordnance associated with the aftermath of a disaster that remain unexploded either by malfunction, design, or any other cause, shall be handled by an Emergency Response Specialist trained in chemical or conventional munitions or explosives handling, transportation, render-safe procedures, or destruction techniques.

Either the Louisiana State Police or U.S. Environmental Protection Agency's (EPA) regional office staff will be the project manager for disaster-related activities, projects, plans and contracts associated with explosives, munitions, and ordnance. Explosives or munitions emergency response specialists include Department of Defense emergency explosive ordnance disposal, technical escort unit, DOD-certified civilian or contractor personnel, and other federal, state, or local government or civilian personnel similarly trained in explosives or munitions emergency responses.

Munitions and ordnance shall be managed in a manner that shall minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated runoff to the soil, groundwater, surface water and atmosphere. They shall be stored in accordance with a standard operating procedure specifying procedures to ensure safety, security, and environmental protection; and transported to an LDEQ approved or permitted hazardous waste treatment, storage, or disposal facility.

Household Hazardous Materials

Local governments should require that contractors demolishing condemned housing units, to the greatest extent practicable, remove and properly handle household hazardous materials such as:

paints and varnishes, solvent, acids, pesticides, cleaning fluids, pool chemicals, used motor oil, propane tanks, mercury thermostats, liquid mercury, mercury containing devices, smoke detectors and refrigerants.

Local governments should request or set up drop off collection sites for citizens. Precautions must be taken at these sites to prevent the release of materials into the environment. Such precautions include providing lined temporary storage areas for accumulation of the material.

Liquefied Petroleum Gas Tanks

Liquefied petroleum gas tanks typically contain propane gas. Propane is a flammable gas that is sometimes generically referred to as LP-Gas, LPG, or Liquefied Petroleum Gas. LPG is typically a propane-butane mixture. Propane might also contain small amounts of other flammable gasses, such as, ethane, ethylene, propylene, isobutane, or butylenes. LPG tanks may be found in a number of urban and rural environments such as motor homes, travel trailers, grills, camp stoves, lanterns, etc. Liquefied petroleum gas is stored under pressure. The gas will leak from any joint or connection which is not sealed properly.

Liquefied petroleum gas is heavier than air and any significant leak will accumulate in any low-lying area such as depressions in the ground, drains or pits. Since LPG is stored in two phases, liquid and gaseous, there is potential for either a liquid leak or a gas leak. If the LPG leak is a gas leak it may not be seen (because LPG is colorless), except where the leak is of sufficient size to be seen shimmering in the air. When a liquid LPG leak occurs, the release will be seen as a patch of ice around the area of the leak, or as a jet of white liquid. This white appearance is due to the cooling effect created by the rapid expansion of the LPG liquid into a gas. The condensing atmospheric moisture makes the leak visible. In concentrated amounts and in uncontrolled conditions, LPG has the potential to create a fire or an explosion.

Debris workers must be observant for LPG tanks. Basically, there are two types of tanks found; they are portable and bulk. Portable, consumer-type tanks can be sized from 4 to 40 pounds, though the most common is the 20 pound tank. Bulk tanks are often 100 to several hundred thousand pounds.

It is vital that LPG tanks be located. Portable tanks can be re-located to a staging area for recertification, refurbishment or dismantling. Bulk tanks should not be moved except by properly train personnel. Tanks measuring 25 gallons and larger should be listed in the LPG Commission database.

Vehicles and Vessels

Local governments need to propose an aggregation point for the temporary storage of abandoned vessels and vehicles. These sites should be secure, fenced and lighted. LDEQ shall evaluate and, if appropriate, authorize the aggregation site. The Office of State Purchasing will negotiate contracts related to the recovery and recycling of abandoned vehicles. The Louisiana Department of Transportation and Development will be the project manager for the vehicle recovery and recycling project associated with the disaster response.

Vehicles and vessels brought to the storage areas should be inventoried by license plate, make, model, color and vehicle identification number. They shall be staged and site tagged for easy retrieval. Scrap vehicles should be dismantled and properly recycled. The following materials must be recovered: gasoline and diesel fuel, refrigerants, lubricating oils, mercury ABS switches, mercury convenience switches, lead acid batteries, brake and transmission fluid, antifreeze and tires. Propane tanks and large appliances in recreational vehicles should be removed.

Vessels deemed for scrap should be crushed to reduce volume for easier handling and management, shredded and properly recycled when possible. The following materials must be recovered: gasoline and diesel fuel, refrigerants, lubricating oils, mercury bilge switches, propane tanks, large appliances, lead acid batteries, transmission fluid and electronics such as radar sets, radios, GPS units, and depth finders.

Electronic Goods

In order to contribute to increased recycling and to reduce the volume of waste disposed in landfills, electronic waste (electronic goods or e-goods) should be segregated, to the greatest extent possible, at the curbside. Local governments should set up drop-off collection sites for citizens for electronic goods. Local governments should require contractors demolishing condemned structures, to the greatest extent practicable, to remove and properly handle televisions, computers/computer peripherals, audio/video equipment, VCR's, DVD players, video cameras, telephones, fax and copy machines, cell phones, wireless devices and video game consoles, including those at commercial locations.

If staged at an authorized or permitted solid waste facility prior to scrapping/recycling, electronic goods shall be stored in an area separate from other solid wastes.

White Goods

Local governments should set up drop-off collection sites for citizens for large appliances (white goods). Local governments should require contractors demolishing condemned structures, to the greatest extent practicable, to remove and properly handle household appliances, televisions and computers, including refrigeration and freezing units at commercial locations.

If staged at an authorized or permitted solid waste facility prior to scrapping/recycling, white goods (i.e. unsalvageable refrigerators, freezers, air conditioners, stoves, range tops, etc) shall be stored in an area separate from other solid wastes and shall be stored in a manner that prevents vector and odor problems and shall be removed from the facility within 90 days. Refrigerant Containing Appliances (RCAs) such as refrigerators, freezers and air conditioning window units shall be handled in a manner, which will prevent a release of refrigerants.

RCAs will be delivered to approved collection sites for refrigerant removal. EPA certified refrigeration technicians will remove refrigerants and handle in accordance with EPA standards. Refrigerants shall be removed from condemned structures with split system air conditioning units prior to demolition. Only EPA certified refrigeration technicians will remove and handle refrigerants in accordance with EPA standards. Condensing units will then be removed from site and sent to an appropriate collection site. When possible, evaporator and air handling units should be removed and sent to an appropriate collection site.

Asbestos

Licenses Required by the Louisiana State Licensing Board for Contractors (LSLBC):

Contractors performing asbestos abatement must be licensed by the Louisiana State Licensing Board for Contractors. Licensing for asbestos abatement is established under the Commercial license with a specialty in Asbestos. Additional information for licensing can be found at http://www.lslbc.louisiana.gov/index.asp or by calling (225) 765-2301.

A licensing requirement is that one Supervisor/Contractor acting as the responsible individual for the company must be accredited with LDEQ. Following approval from the Louisiana State Licensing Board for Contractors, all abatement workers/supervisors performing work in Louisiana are required to be accredited by LDEQ. The LDEQ Asbestos Accreditation Form (AAC-1) can be found at http://www.deq.louisiana.gov/portal/Portals/0/permits/AsbestosandLead/AAC-1%20Asb%20App%20Form%2020106.doc. Note that there is a fee for emergency processing (3 days or less).

Asbestos Accreditations and Notifications Required by LDEQ:
The Louisiana Air Quality regulations, Chapters 27 and 51, Section 5151, contain the requirements for Asbestos Demolition and Renovation abatement activities and accreditation for Workers, Supervisor/Contractors (including air monitoring personnel), Inspectors, Management Planners, and Project Designers. These regulations may be found at http://www.deq.louisiana.gov/portal/Portals/0/planning/regs/title33/33v03.doc.

All personnel working as Asbestos Workers, Supervisor/Contractors (including air monitoring personnel), Inspectors, Management Planners, or Project Designers must be accredited by LDEQ. Initial and subsequent Asbestos Hazard Emergency Response Act (AHERA) training by an EPA recognized training provider or a training provider recognized by a state program authorized by EPA is required for accreditation. A picture I.D. card and the appropriate fee(s) are also required. The LDEQ Asbestos Accreditation Application form can be found at http://www.deq.louisiana.gov/portal/Portals/0/permits/AsbestosandLead/AAC-1%20Asb%20App%20Form%2020106.doc.

Also, a list of Louisiana recognized training providers can be found at http://www.deq.louisiana.gov/portal/Portals/0/permits/AsbestosandLead/Current%20Asb%20Course%20Schedule%206706.pdf.

The LDEQ is capable of expediting the accreditation process for the disaster affected areas, including disaster related abatement, and is able to provide almost immediate accreditation by letter, if necessary. Follow up certificates are then generated as soon as possible for all approved applicants. During the review process, if an applicant does not submit the necessary credentials, additional paperwork will be requested. If the requested paperwork is not submitted, the accreditation for that person will be halted.
The LDEQ Asbestos Notification form for Demolition or Renovation can be found at http://www.deq.louisiana.gov/portal/Portals/0/permits/AsbestosandLead/AAC-2%20Asb%20Not%20Form%20022106.doc

Complying with the LESHAP Asbestos Regulations:
The purpose of this portion of this document is to provide guidance for compliance with the standards for the demolition and renovation activity pursuant to the Louisiana Emission Standard for Hazardous Air Pollutants (LESHAP) for asbestos (LAC 33:III.Chapter 51.Subchapter M). Subchapter M has been deemed to be at least as stringent as the federal regulation and the LDEQ has received delegation of the National Emissions Standard for Hazardous Air Pollutants program from the US EPA. The LDEQ has used EPA guidance to provide similar guidance in the wake of Hurricanes Katrina and Rita in the determination of compliance with Chapter 51 (and through delegation, the NESHAP). In the aftermath of Hurricanes Katrina and Rita, LDEQ also received “No Action Assurance” letters from EPA that provided targeted flexibility regarding compliance with NESHAP regulations. Should the nature or magnitude of the disaster warrant, LDEQ will initiate contact with EPA for similar regulatory flexibility.

General Guidelines for Demolition and Related Activities:
Best Management Practices – Conduct all asbestos demolition, LDEQ approved grinding of non-regulated asbestos containing material, transportation, and disposal activities using best management practices and engineering controls to control emissions. These include, but are not limited to, wetting structures/materials before, during and after demolition or grinding, controlled collapse of walls, and taking all reasonable steps to avoid running over asbestos containing material with heavy equipment.

Site Security – For all demolition, grinding and disposal sites handling asbestos containing material, establish and implement procedures to restrict public access.

Air Monitoring – Conduct air monitoring for the presence of asbestos fibers at enhanced construction and demolition debris landfills and LDEQ approved grinding facilities.

Structures Demolished by the Disasters and Debris on the Ground:
If a house or structure has been effectively demolished by the disaster, collection, treatment and disposal of the debris is not covered by LAC 33:III.5151.F. Additionally, this debris is not subject to the asbestos LESHAP, in accordance with EPA guidance.[5]

Structures That Remain Standing After the Disasters:

1. Demolition or renovation of any facility, as defined in LAC 33:III.5151, is required to comply with LESHAP regulations.

2. Demolition/renovation conducted by homeowner or homeowner's contractor. Renovation or demolition by the individual homeowner of residential buildings with four or fewer dwelling units is not covered by the asbestos LESHAP.[6] Additionally, the resultant debris is not subject to the asbestos LESHAP.

3. Demolition of residential structures conducted as a result of a government order.

The EPA has indicated that multiple residential buildings of four units or less, being demolished as a result of the disaster in accordance with a government order, are considered an "installation" as defined in the asbestos LESHAP[7, 8, 9]. Assuming the demolition of multiple residential buildings with four dwelling units or less by a single entity are covered by the asbestos LESHAP, the department will consider compliance with this guidance as compliance with the asbestos LESHAP. It will be the responsibility of the local government or its contractors to determine the boundaries of the installation site. EPA's guidance with respect to "site" states that the site should be a "relatively compact area", but "the local government should use common sense when applying this guide."[10] EPA also states that "EPA believes that if a demolition project involves the demolition of several contiguous city blocks, the entire area could be considered a site."[11]

Notification of demolition and wetting requirements apply in all instances of demolition using the AAC-2 form. The AAC-2 form may be located on the LDEQ's Asbestos and Lead web page at http://www.deq.louisiana.gov/portal/Default.aspx?tabid=2251.

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[5] Letter dated November 9, 2005, EPA (Coleman) to US Army Corps of Engineers (Smithers), which states: "If a building or other structure was totally destroyed by a hurricane, then the National Emission Standard for Asbestos, 40 C.F.R. Part 61, Subpart M (Asbestos NESHAP) does not apply to any subsequent activities. For such destroyed structures, you may immediately begin removal and proper disposal of the resulting debris."

[6] NESHAP Clarification of Intent, Federal Register, July 28, 1995, Volume 60, Number 145, pages 38725-38726 which states: "EPA believes that individual small residential buildings that are demolished or renovated are not covered by the asbestos NESHAP. This is true whether the demolition or renovation is performed by agents of the owner of the property or whether the demolition or renovation is performed by agents of the municipality. EPA believes that the residential building exemption applies equally to an individual small residential building regardless of whether municipality is the "owner or operator" for the purposes of demolition or renovation."

[7] NESHAP Clarification of Intent, Federal Register, July 28, 1995, Volume 60, Number 145, pages 38725-38726 which states: "However, EPA believes that the residential building exemption does not apply where multiple (more than one) small residential buildings on the same site are demolished or renovated by the same owner or operator as part of the same project or where a single residential building is demolished or renovated as part of a larger project that includes demolition or renovation of non-residential buildings." The notice further states: "EPA does not believe the residential building exemption was designed to exempt larger demolitions or renovations on a particular site, even where smaller residential buildings are involved."

[8] EPA has also issued subsequent Applicability Determinations which support this position. See Determination Detail, Control #A960033, dated 11/01/1995 and Control #A970008, dated 09/04/1997.

[9] Letter dated November 9, 2005, EPA (Coleman) to US Army Corps of Engineers (Smithers), which states: "Please note that demolition and disposal of "partially-damaged" or "standing-but-unsafe-to enter" structures are subject to Asbestos NESHAP requirements."

[10] NESHAP Clarification of Intent, Federal Register, July 28, 1995, Volume 60, Number 145, pages 38725-38726.

[11] Ibid.

A. Facilities that are structurally unsound or uninhabitable

It is the responsibility of local governments and their contractors to determine which houses should be demolished because they are unsound or otherwise uninhabitable, and to prepare a list of the houses to be demolished. These residences may be demolished in accordance with more streamlined demolition requirements provided by EPA.

Since no inspections are performed, the entire waste stream must be disposed of in a permitted Type I or II landfill or other LDEQ approved landfill that meets federal NESHAP disposal standards (such as an enhanced C & D landfill which are required to have additional controls to meet or exceed the federal standards under NESHAP (see 40 CFR § 61.154).).

B. Structurally Sound Homes

For the installations consisting of sound residential structures, the LESHAP/NESHAP requires a thorough inspection of such residential structures by an asbestos inspector accredited by the LDEQ. The "LDEQ Inspection Protocol for "thorough inspections," is considered compliant with LESHAP, and can be found at http://www.deq.louisiana.gov/portal/Default.aspx?tabid=2251.

C. Thorough Asbestos Inspections

Thorough asbestos inspections must be conducted by asbestos inspectors accredited by LDEQ. The LDEQ Inspection Protocol for "thorough inspections", which is considered compliant with LESHAP, must be followed when conducting a "thorough inspection" for the purposes of compliance with LESHAP.

Disposal of Waste Streams Resulting From Inspections and Demolition Activities

In order to address debris disposal needs as a result of recovery efforts after Hurricanes Katrina and Rita, LDEQ established criteria for Enhanced C& D Landfills. These enhanced landfills meet federal NESHAP disposal standards. Facilities meeting these requirements and approved by the LDEQ were utilized to effectively dispose of storm related debris. Should the nature or magnitude of the disaster warrant, LDEQ will reactivate the Enhanced C&D Landfill procedures to maximize debris disposal options.

- Debris from residences that are being treated as structurally unsound and in danger of imminent collapse must be disposed of in LDEQ permitted Type I or II landfills authorized to accept asbestos or other LDEQ approved landfills that meet federal NESHAP disposal standards (such as an enhanced C & D landfill).

- Non-regulated Category I and II ACM (Non-RACM) may be disposed of at designated areas within permitted Type III landfills that are LDEQ approved for Non-regulated Category I and II disposition.

- RACM that has been removed from residences for which a thorough inspection has been conducted must be disposed of in permitted Type I or II landfills authorized to accept asbestos.

- C&D debris waste may be disposed of at LDEQ approved construction and demolition debris waste sites.

Handling of Debris and Waste Materials from Demolition Activity

The following applies to demolition activities conducted on residential structures that are considered part of an installation:

1. For installations where residences are being thoroughly inspected prior to demolition and RACM is identified, or where residences are being treated as structurally unsound and in danger of imminent collapse, appropriate procedures for asbestos emission control provided by LAC 33:III.5151.F.3 shall be employed. The wet method (fogging/misting) should be used prior to demolition, during demolition and during loading of the material. Mist the houses, including asbestos-containing roofing shingles and siding, remove, segregate and transport in an appropriate manner to a permitted asbestos Type I or II landfill, enhanced C&D debris landfill or regular C&D debris landfill as appropriate. The removal and segregation of material suspected to contain asbestos, including asbestos containing roofing and siding, is recommended.

2. Each structure should be knocked down in a controlled manner to minimize excess breakage of asbestos containing material. Debris should be wetted during demolition, interim staging, and loading activities.

3. It may not be necessary that Category I asbestos containing material (vinyl tile, mastic, etc.) be removed and segregated from the construction and debris waste if it does not have a high probability of becoming friable. If this material does not become friable by the forces expected to act on the material in the course of demolition, it may be disposed at a designated area in an approved C&D disposal site. Regarding Category I asbestos containing material, follow the LDEQ Inspection Protocol for “thorough inspections.”

4. Removal of RACM from Inside Sound Structures. For structurally sound structures, shut windows and doors. If they cannot be shut, install critical barriers (e.g. polyethylene sheeting). However, sufficient wetting is required to manage emissions during removal.

    a. Negative air is not required;
    b. The wet method must be employed to remove the regulated ACM;
    c. Regulated ACM waste must be bagged and labeled;
    d. Bulk material left behind must be visually inspected and cleaned appropriately;
    e. No air monitoring clearance is necessary;
    f. Walls, ceilings, floors, etc. must be encapsulated to ensure ACM fibers are not being released during demolition and loading;
    g. Follow demolition procedures as noted in this plan, and use OSHA worker protection guidelines.

Tires

Because the occurrence of a disaster has the potential to generate a staggering number of waste tires removed from flooded or inoperable vehicles and may potentially cause an enormous drain on the Waste Tire Management Fund (WTMF), the decision on whether or not the tires will be eligible for payment through the WTMF will be made at the time of the issuance of an Emergency Declaration and Administrative Order by the Secretary of LDEQ. Regardless of payment or nonpayment from the fund, if tires cannot be resold or recycled through existing programs or processes, they will be managed as disaster-generated debris in accordance with LDEQ regulations or provisions of the Emergency Declaration and Administrative Order.

Final Disposal Options

This plan is designed to ensure that disaster-generated debris that requires disposal is managed and disposed in a manner that is protective of public health and the environment. Disaster-generated debris requiring disposal shall be managed and disposed at sites that have either been permitted or authorized by the LDEQ.

Uncontaminated disaster-generated trees, leaves, vines, twigs, branches, grass, and other vegetative debris may be disposed of in permitted Type II or Type III landfills. Uncontaminated wood debris generated from construction intended for final disposal must be segregated and reduced in volume and weight prior to transport to a landfill.

Disaster-generated debris contaminated with oil (i.e. crude oil, petroleum refined product) shall be disposed in a Type I Solid Waste Landfill, except that oil contaminated marsh grass may be approved for burning on a case by case basis. Disaster-generated debris that is visibly covered with oil is considered to be oil contaminated debris.

The burning of disaster-generated debris contaminated with or containing hazardous waste is prohibited.

Creosote treated telephone poles, railroad crossties or treated wood chips must be disposed in a Type I Solid Waste Facility.

Construction and demolition debris that is mixed with other disaster-generated debris need not be segregated from other solid waste prior to disposal in a permitted solid waste landfill. Non-recyclables and residuals generated from segregation of disaster-generated debris shall also be disposed of in a Type II or III landfill.

Putrescible waste (e.g. rotting food that has been removed unsalvageable refrigerators and freezers) shall be disposed of in a Type II landfill.

The disposal of excessive accumulations of small animal carcasses shall be in accordance with the Louisiana Department of Health and Hospitals sanitary code. The disposal of large animal carcasses (e.g. horses, cows) shall be in accordance with the instructions from the Louisiana Department of Agriculture.

Hazardous waste generated as a result of the disaster event must be separated from other disaster-generated waste and disposed of at a permitted commercial hazardous waste disposal facility. Recyclables and hazardous waste must be segregated for beneficial environmental use prior to transport to a landfill. While household wastes are classified as solid wastes that are not hazardous wastes, it is imperative that the household waste collected during this event be managed not only in an environmentally sound manner but also in accordance with the appropriate LDEQ rules and regulations governing the storage and processing of this type of waste.

Formosan Termite Control

Landfills are an ideal environment for these subterranean termites, especially in humid Louisiana. For this reason, restrictions are in place from the Louisiana Department of Agriculture and Forestry designating where in Louisiana potential Formosan termite contaminated debris might be disposed. Landfill operators, contractors and waste generators should consult with the Department of Agriculture and Forestry regarding proper disposal of Formosan termite debris. Contact Mr. Bobby Simoneaux at (225) 925-3763 or bobby_s@ldaf.state.la.us