

LEASE AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 2006, by and between the **SCHOOL BOARD OF SARASOTA COUNTY, FLORIDA** a body corporate under the laws of the State of Florida, herein referred to as “LESSOR”, and **SARASOTA COUNTY, FLORIDA**, a political subdivision of the State of Florida, herein referred to as “LESSEE”.

WHEREAS, LESSOR is the fee simple owner of a parcel of real property in Sarasota County, Florida, which is described on attached Exhibit “A”, which by this reference is incorporated into and made a part of this agreement;

AND WHEREAS, the parties have agreed to enter into this agreement to permit LESSEE to utilize property as a Debris Management Site in general conformance with the Standards set forth in Exhibit “B” attached hereto and made a part hereof.

NOW, THEREFORE, in consideration of the mutual promises herein contained, the parties agree as follows:

SECTION I GRANT OF LEASE: DESCRIPTION OF PREMISES

LESSOR hereby grants to LESSEE a lease and use permit to operate a Debris Management Site, subject to all the terms hereof, on LESSOR’s property described on attached Exhibit “A”. LESSOR does not represent the nature or quality of its property rights in said parcel, and LESSEE shall be solely responsible for satisfying itself as to the quality of LESSOR’s property rights. LESSOR shall not be under any obligation to defend any action brought which may challenge this agreement, or the authority of LESSOR to enter into this agreement; however, LESSEE may defend such an action at its own expense. LESSOR reserves the right to use any or all of the above-described property for educational purposes.

From time to time, the premises may be needed on a short-term basis by LESSOR for public use in connection with the construction, maintenance or operation of the site.

SECTION II
TERM OF USE

This lease is for an indefinite or open ended term commencing on the date when the last one of LESSOR and LESSEE has signed this agreement, and continuing until this agreement is canceled. Either party may cancel this agreement, without cause, at any time upon sixty (60) days notice. The activation of this agreement and LESSEE's use of the property shall only take place upon (1) declaration of state of emergency in Sarasota County by the Board of County Commissioners, the Governor of Florida, or the President of the United States, (2) determination by LESSEE that property described in Exhibit "A" is required for County use in responding to said emergency for the purpose of a Debris Management Site, and (3) LESSEE has activated all other Debris Management Sites in the area prior to activating this specific site. LESSEE shall notify LESSOR of activation of this agreement pursuant to SECTION XI of this agreement.

SECTION III
USE OF PROPERTY

LESSOR grants LESSEE a lease to use LESSOR's property described on attached Exhibit "A" for use by LESSEE, Sarasota County contractors and Federal, State, and local disaster relief agencies, as a Debris Management Site located thereon, and LESSOR's property cannot be used for other purposes without written approval of LESSOR. The premises are leased as is. Any improvements installed upon or attached to the premises shall comply with all local building, zoning and use ordinances, and all applicable Federal and State statutes and regulations. LESSEE shall be solely responsible for all permits, and any improvements shall be installed at the sole expense and risk of LESSEE. The premises may

be used by LESSEE solely for the above purposes during the term of this agreement and for no other purposes without the prior consent of the LESSOR. LESSEE hereby acknowledges LESSOR's fee simple title to the premises and agrees never to assail, resist, or deny said title.

SECTION IV
NO LEASE FEE

This lease is being provided to LESSEE as an accommodation, on a rent-free basis.

SECTION V
CONDITIONS OF LEASE

This Lease is granted on the following conditions:

(a) LESSEE agrees to assume full responsibility for the operation of a Debris Management Site located on LESSOR's property described on attached Exhibit "A".

(b) LESSEE assumes full responsibility for compliance with all local, State and Federal ordinances, laws, rules and regulations regarding pollution, public safety, zoning and land use, as same relate to the use of LESSOR's property described on attached Exhibit "A".

(c) LESSEE shall maintain the Debris Management Site on LESSOR's property in a neat, orderly and functioning condition, to the extent possible under anticipated conditions, so that the premises in no way becomes a detriment to the neighborhood, or to the School Board of Sarasota County.

(d) LESSEE shall also maintain LESSOR's property so that at all times hereafter the premises will continue to be in full compliance with all Federal, State and local environmental laws and regulations, including but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), Public Law No. 96-510, 94 Stat. 2767, and the Superfund Amendments and Reauthorization Act of 1986 (SARA), Public Law No. 99-499, 100 Stat. 1613.

(e) LESSEE shall obtain and will maintain all leases, permits and approvals required with respect to its use of LESSOR's property, and will remain in full compliance with all of the terms, conditions and requirements of such leases, permits and approvals. LESSEE further warrants and represents that it will promptly notify LESSOR of any change in the environmental condition of LESSOR's property or in the nature or extent of any hazardous materials, substances or wastes maintained on, in or under LESSOR's property or used in connection therewith, and will transmit to LESSOR copies of any citations, orders, notices or other material governmental or other communication received with respect to any other hazardous materials, substances, waste or other environmentally regulated substance affecting LESSOR's property. In the event any remediation or clean up of LESSOR's property is required due to LESSEE's actions, LESSEE shall bear the full cost of all remediation or clean up activities.

(f) Each party agrees that it shall be solely responsible for the wrongful acts of its employees, contractors and agents. However, nothing contained herein shall constitute a waiver by either party of its sovereign immunity and the limitations set forth in Section 768.28, Florida Statutes.

SECTION VI IMPROVEMENTS

LESSOR acquired its property described above for educational purposes. At this time, the proposed use of LESSOR's property by LESSEE in no way hinders the property's use for educational purposes on a short term basis from time to time. If, at any time in the future, the LESSOR cancels and terminates this agreement as provided in Section II above, LESSEE shall vacate the leased premises and return the property to a condition acceptable to the School Board of Sarasota County, including without limitation, removing any

improvements and grading the property to return it to the approximate same level or grade as it was at the commencement of the term of this agreement.

SECTION VII
CONDITION OF PREMISES NOT WARRANTED

LESSOR does not warrant or represent that the premises are safe, healthful, or suitable for the purposes for which they are permitted to be used under the terms of this lease and use permit; nor does LESSOR warrant or guarantee that it has any title to, or right to convey the leased premises.

SECTION VIII
DEFAULT

Each agreement of LESSEE herein contained is material and of the essence of this agreement, and if LESSEE shall default or permit a breach in whole or in part of any covenant, agreement, or stipulation hereof to be kept by it, LESSOR may give LESSEE notice in writing to be sent by certified or registered mail, of such breach or default and LESSEE shall have thirty (30) days after the notice within which to cure and rectify such breach or default, and in the event LESSEE does not within such thirty (30) day period cure and rectify such breach or default, then it shall be lawful for LESSOR, its successors or assigns, without further notice, to declare this agreement and privilege terminated and to demand possession of the premises from LESSEE or any person or persons occupying same, without prejudice to claim or damages, to which LESSOR may be entitled.

LESSOR's failure to give the notice mentioned in this Section shall not be construed as a waiver of any breach or default of any of the terms or provisions of this Agreement. The waiver of any breach of any covenant or condition by LESSOR shall not constitute a waiver of any other breach regardless of knowledge thereof. In the event of such breach or default

and LESSEE's failure to rectify same, as provided above, LESSOR is hereby authorized, with or without process of law, to enter on the premises, expel, remove and put off LESSEE, together with all property of every kind belonging to it, and repossess and enjoy the premises as before the making of this Agreement.

Notwithstanding any other provisions of this agreement, where the work of curing an alleged default cannot reasonably be accomplished within the time otherwise permitted herein, and where LESSEE has commenced the work of curing said default and is diligently pursuing same, then LESSEE shall be entitled to reasonable time extensions to permit the completion of said work of curing said default, as a condition precedent to any re-entry by LESSOR or termination of this agreement by LESSOR, and any defect that is cured shall not thereafter be grounds for re-entry or for termination.

LESSEE agrees not to violate or abandon the premises at any time during the activation of this agreement. Should LESSEE vacate or abandon said premises, or be dispossessed by process of law or otherwise, such abandonment, vacation, or dispossession shall be a breach of this agreement, and in addition to any other rights which LESSOR may have, LESSOR may remove any personal property belonging to LESSEE which remains on the leased premises.

SECTION IX
PERSONAL LEASE ONLY

It is agreed between LESSOR and LESSEE that this lease and use permit is personal to LESSEE and shall not inure to the successors or assigns of LESSEE. No assignment of this lease and use permit or any interest therein, and no sub-lease for any purpose shall be made and granted by LESSEE without the prior written consent of LESSOR. LESSEE agrees that it does not have and shall not claim at any time any interest or estate of any kind

or extent whatsoever in the premises by virtue of this lease and use permit, or its occupancy and use hereunder.

SECTION X
ENTIRE AGREEMENT

The making, execution and delivery of this Agreement by LESSEE has been induced by no representation, statements, warranties, or agreements other than those herein expressed. This Agreement embodies the entire understanding of the parties and there are no further or other agreements or understandings, written or oral, in effect between the parties, relating to the subject matter hereof. This instrument may be amended or modified only by an instrument of equal formality signed by the respective parties.

SECTION XI
DELIVERY OF NOTICES

Any notice mailed, addressed and delivered to LESSEE Debris Management Coordinator at 8750 Bee Ridge Road, Sarasota, Florida 34241, shall be notice hereunder by LESSOR unless and until LESSEE shall designate in writing a different representative or address. Any notice mailed, addressed and delivered to LESSOR's offices at 1960 Landings Boulevard, Sarasota, Florida 34231-3331, Attention: Superintendent of Schools, shall be notice hereunder by LESSEE, unless and until LESSOR shall designate in writing a different representative or address.

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IN WITNESS WHEREOF, the parties have executed this Lease Agreement the day and year first above written.

SCHOOL BOARD OF SARASOTA COUNTY

By: _____

Title: _____

Date: _____

Witnesses as to LESSOR

Print Name

ATTEST:
KAREN E. RUSHING, Clerk of Circuit Court
and Ex-Officio Clerk of the Board of County
Commissioners

By: _____
Deputy Clerk

BOARD OF COUNTY COMMISSIONERS OF
SARASOTA COUNTY, FLORIDA

By: _____
Chairman

DATE: _____

Approved for form and correctness

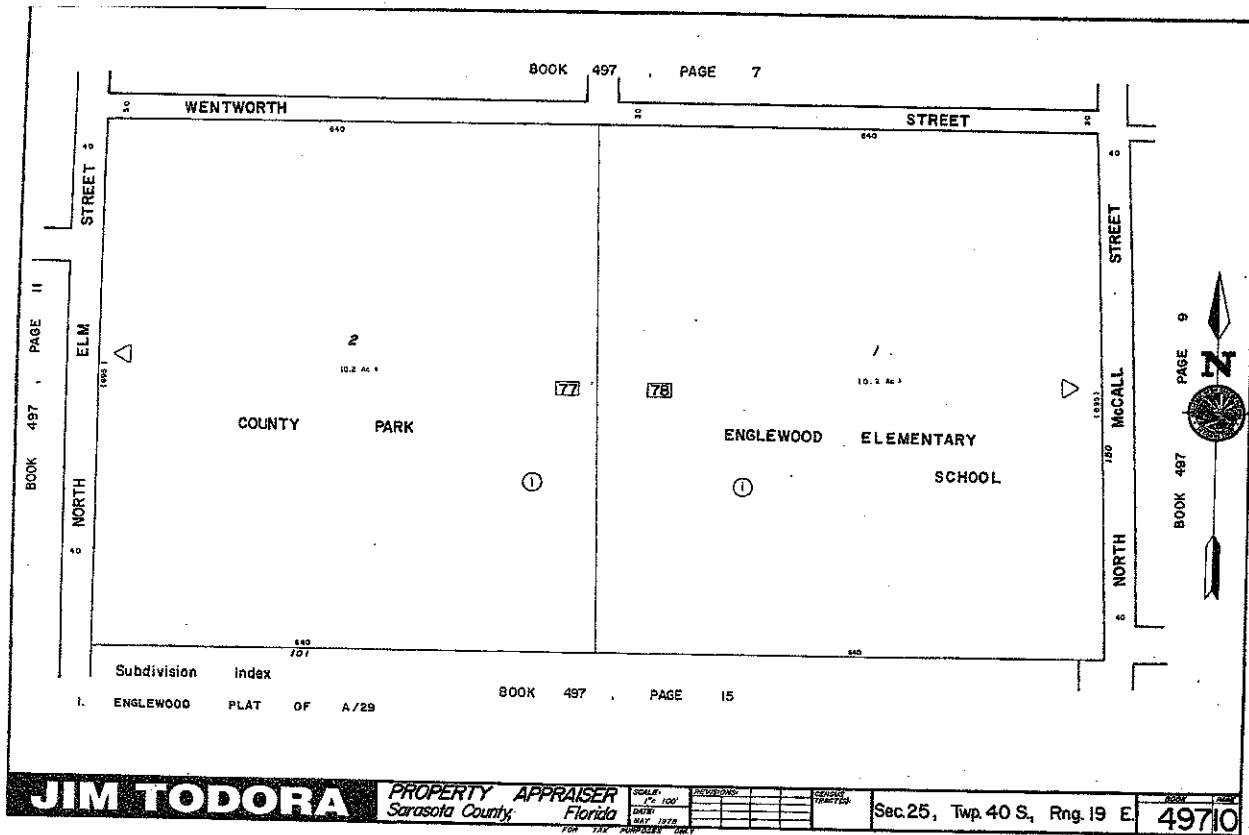
BY: _____
LESSEE Attorney

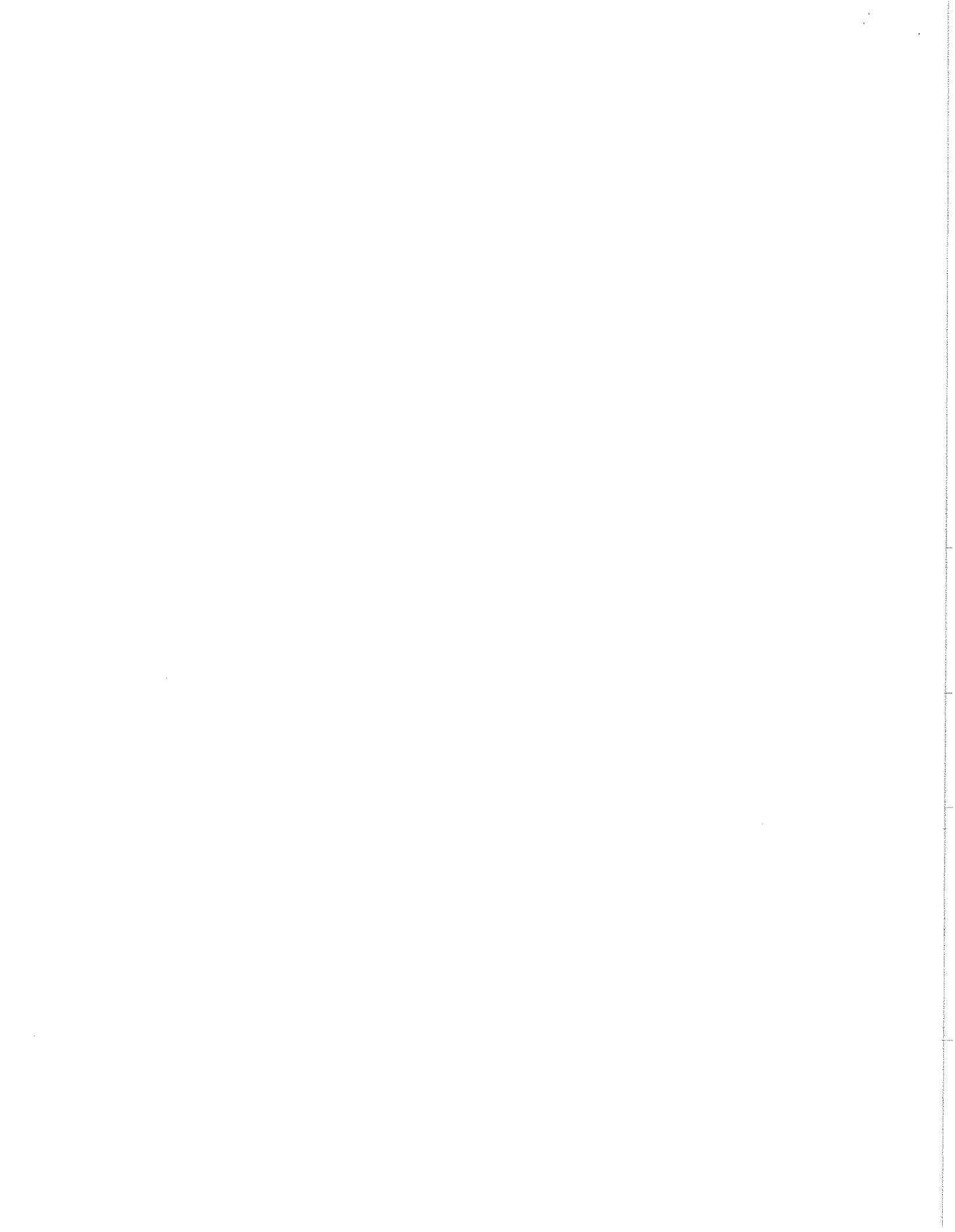
DOCUMENT APPROVED FOR LEGAL CONTENT
9/13 2006, BY
A. LAMAR MATTHEWS, JR.
MATTHEWS, EASTMOORE, HARDY, CRAUWELS & GARCIA
ATTORNEYS FOR
THE SCHOOL BOARD OF SARASOTA COUNTY, FLORIDA
SIGN: ASH

EXHIBIT "A"

Parcel Description – PID 0497-10-0002

Englewood Recreation Center Lot 77 Plat of Englewood.





Parcel Site Use Plan

Englewood Recreational Center

PID 0497-10-0002



Site Notes:

Entrance/Exit →

Yellow Area – Public Drop Off Blue Area – Debris Site

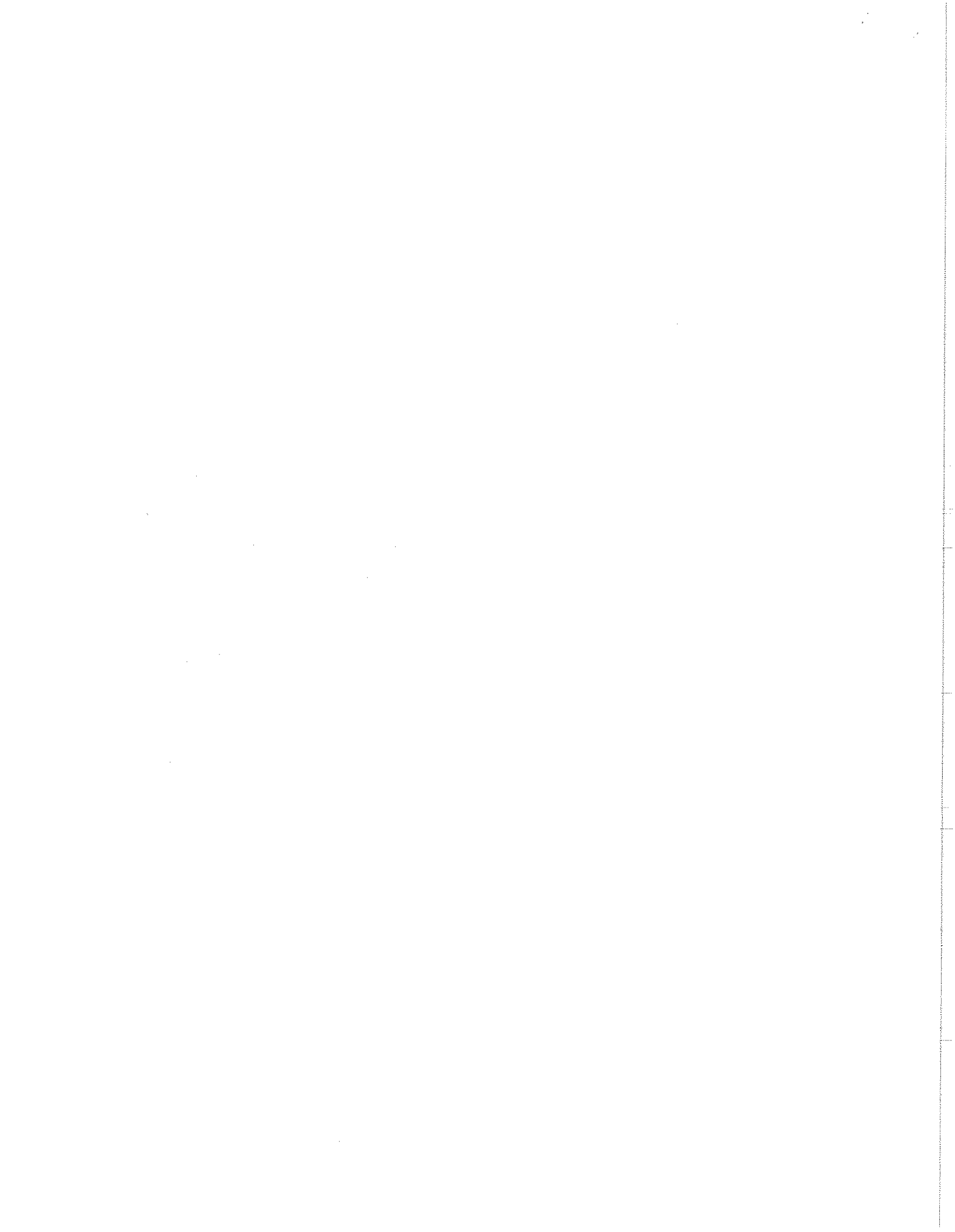
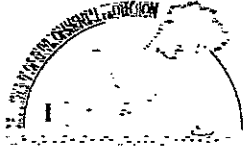


EXHIBIT "B"



General Information

Florida Department of Environmental Protection Guidance for Establishment, Operation and Closure of Staging Areas for Hurricane-generated Debris
November 19, 2004 (updated 5/26/05)

1. The Department of Environmental Protection (Department) understands that in addition to other requirements by the Federal Emergency Management Agency (FEMA), staging areas must be approved by the Department in order for the owner / operator of the staging area to receive Public Assistance funds from FEMA. Field authorizations for staging areas by the Department may be issued prior to or following a site inspection by Department personnel for staging areas to be used for temporary storage and processing of Hurricane-generated debris. Field authorizations for debris staging areas may only be issued by the Department subsequent to an Executive Order by the Governor declaring a state of emergency or an Emergency Final Order by the Secretary of the Department authorizing debris staging areas.
2. Field authorizations for staging areas may be requested by providing oral or written notice to the Department containing the following information.
 - A description of the staging area design: For example, is the staging area an open field or paved? Is it near bodies of water or potable wells? What areas would be used for staging debris and for processing?
 - Plans for operation of the staging area: For example will it be used for staging only or also processing? What wastes will be managed and what are the anticipated operating hours and days of the week when the site will be open? Who can bring wastes to the site? If processing occurs, what type is expected?
 - The location of the staging area should be provided including the address and if possible, its latitude and longitude or directions from major roadways.
 - The name, address, and telephone number of the site manager should be provided.
3. The Department prefers that requests for approval of staging areas be made by solid waste officials in the LESSEE or city where the staging area is located. Such staging areas do not need to be owned by the local government but must have LESSEE or city (or its designated contractors) oversight and management. The Department may

consider approving the private operation of staging areas on a case-by-case basis.

4. The owner or operator of each staging area should keep records of the amount and type of waste received, waste sent off-site for disposal or recycling, and waste left on-site. Such records can be very valuable for demonstrating that the staging area has been operated in accordance with applicable regulations and orders. These records should be kept at a location designated by the site manager and made available for review by Department staff upon request.

Location of Staging Areas

5. If possible, it is advisable to test the soil, groundwater and/ or surface water at a proposed staging area prior to receipt of Hurricane-generated debris to establish pre-existing conditions.
6. Staging areas for debris other than yard trash and uncontaminated vegetative debris must not be located within 500 feet of a potable water well, unless otherwise approved by the Department. Staging areas for yard trash and uncontaminated vegetative debris must not be located within 100 feet of a potable water well, unless otherwise approved by the Department.
7. Staging areas for debris other than yard trash and uncontaminated vegetative debris must not be located within 200 feet of a natural or artificial body of water, unless otherwise approved by the Department. Staging areas for yard trash and uncontaminated vegetative debris must not be located within 50 feet of a natural or artificial body of water, unless otherwise approved by the Department.
8. In no case should a staging area be located in wetlands or a water body.

Operation of Staging Areas

9. Staging areas should have:
 - Stormwater controls, such as silt fences, to prevent discharge of contaminated runoff into water bodies where such discharge may cause violations of Department standards (example: turbidity);
 - Some method to control the offsite migration of dust, wood chips or other debris residuals from vehicular traffic and from the handling of debris and ash;
 - Some type of access control to prevent unauthorized dumping and scavenging; and,
 - Spotters to correctly identify and segregate waste types for appropriate management.

10. Only construction and demolition debris, land clearing debris, yard trash, vegetative waste, or Class III waste may be stored at the staging area. Class I waste (such as household garbage, putrescible waste, or mixed wastes containing these materials) must be removed from the staging areas and disposed of as soon as practicable to prevent odor, vectors and sanitary nuisances. Again, spotters should be used during waste pickup and/ or at the staging areas to correctly identify and segregate waste types for appropriate management. The following management options for the Hurricane-generated debris must be followed.
- Class I wastes, including all mixed wastes, must be disposed of at a Class I landfill or, except for asbestos-containing materials, in a waste-to-energy facility.
 - Non-recyclables and residuals generated from segregation of Hurricane-generated debris shall also be disposed of in a Class I landfill or waste-to-energy facility.
 - Uncontaminated yard trash may be disposed of in permitted lined or unlined landfills, permitted land clearing debris facilities or permitted construction and demolition debris disposal facilities.
 - Uncontaminated yard trash and clean wood may be processed at a registered yard trash processing facility.
 - Construction and demolition debris that is mixed with other Hurricane-generated debris need not be segregated from other solid waste prior to disposal in a lined landfill. Construction and demolition debris that is either source-separated or is separated from other Hurricane-generated debris at an authorized staging area may be managed at a permitted construction and demolition debris disposal or recycling facility upon approval by the Department of the methods and operational practices used to inspect the waste during segregation.
 - Unsalvageable refrigerators and freezers containing solid waste such as rotting food that may create a sanitary nuisance may be disposed of in a Class I landfill; provided, however, that chlorofluorocarbons and capacitors must be removed and recycled to the greatest extent practicable using techniques and personnel meeting the requirements of 40 CFR Part 82.
11. Burning of Hurricane-generated yard trash, other vegetative debris, and in some cases demolition debris, provided reasonable efforts are made to limit the demolition debris being burned to untreated wood, is allowed in air curtain incinerators (ACIs) if the conditions of the Emergency Order¹, OGC No. 04-1659, are followed. The following additional information is provided for operation of the ACIs and management of the ash residue.
- The ACI burn area should have a minimum setback distance of 100 feet from the debris piles and 1000 feet from the nearest building, or as required by the local Fire Department.

- Ash should be removed from the ACI bum pit when the level reaches approximately two feet below the lip of the bum pit and the bum should be extinguished 2 hours before removal of the ash.
 - As required in the Order, ash residue from the combustion of yard trash or clean wood wastes may be disposed of in a permitted disposal facility, or may be land spread in any areas approved by local government officials except in wellfield protection areas or water bodies.
 - As required in the Order, ash from the combustion of other Hurricane-generated debris shall be disposed of in a Class I landfill. Metals or other non-combustible materials segregated from the ash residue may also be disposed of in an unlined, permitted landfill.
12. Open burning of Hurricane-generated vegetative debris must receive prior authorization from the Division of Forestry. Ash from this burning may be disposed or used as described above for ACIs.
13. Chipping and/ or grinding of Hurricane-generated vegetative debris is encouraged to help reduce the volume of the material. The Department recommends the following guidelines for managing the volume reduced material.
- In accordance with National Fire Protection Association², mulch and chip piles should not exceed 18 feet in height, 50 feet in width and 350 feet in length. Piles should be subdivided by fire lanes having at least 25 feet of clear space at the base around each pile. These piles should not be compacted.
 - Smoking should only be allowed in designated areas well away from the combustible material.
 - Possible uses of the size reduced material include: (1) a soil amendment where it is disked into the soil or mixed with potting soil; (2) as mulch for weed control, moisture retention, soil temperature control, erosion control or slope stabilization; (3) fuel; (4) feedstock for composting operations; (5) animal bedding material; and (6) pulp wood.
 - Use of the size reduced material as a soil amendment must be at normally accepted agronomic rates as determined by industry practice. Recommendations for appropriate application rates by the Institute of Food and Agricultural Sciences³ (IF AS) may be used, and can be obtained from the local IF AS Agricultural Extension agent.
 - The use of mulch must be considered beneficial rather than disposal. Mulch must not be placed in water bodies or on wetlands.

Closure of Staging Areas

14. Staging areas for Hurricane-generated debris are temporary locations that can be used for the duration of the Emergency Order or as otherwise approved by the Department. The following guidelines apply to the closing of temporary staging areas.

- Owner/operators of the staging areas must contact the Department prior to closing a staging area to discuss and coordinate what will be required for closure including environmental sampling, if needed.
- All Hurricane-generated debris must be removed by the expiration of the Emergency Order, unless otherwise approved by the Department.
- Mulch produced from processing vegetative debris may be left on-site if prior approval is obtained from the Department. The Department will consider these requests on a case-by-case basis.
- Areas that were only used to stage vegetative debris, or ash from burning solely vegetative debris, will not require any environmental sampling after the debris or ash is removed unless there is reason to believe that the area may have become contaminated (e.g., significant visible staining or known contaminant releases in the area).
- Areas that were used to stage mixed debris, or ash from burning mixed debris, will normally require environmental sampling after the debris or ash is removed unless there is reason to believe that no contamination of the area occurred (e.g., the area is paved with asphalt or concrete and there is no visible evidence of staining or known contaminant releases).
- When environmental sampling for soils and groundwater is needed, it should typically include at least one soil sample and one groundwater monitoring well in areas showing significant visible staining or areas believed to be impacted by the staged waste or ash. Unless otherwise approved by the Department, these samples should normally be analyzed for total RCRA metals, volatile organic compounds and semivolatile organic compounds using approved EPA methods. The Department can also require other approaches to conducting environmental sampling at staging areas on a case-by-case basis.

15. The Department must be informed in writing when all closure activities at the staging area are completed. If environmental sampling was conducted as part of the closure activities, then the closure notice should include the results of this sampling, unless otherwise approved by the Department.

Chapter 7

TEMPORARY DEBRIS STORAGE SITE OPERATIONS AND VOLUME REDUCTION METHODS

The preparation and operation of a temporary debris storage and reduction site are usually left to the contractor. However, the designated debris manager and debris staff should understand how a temporary debris storage and reduction site is set up and operated. This information will be extremely valuable in developing ultimate disposal plans, keeping local government officials and the public informed on debris clearance, removal and disposal operations and ensuring compliance with various regulations. This chapter provides guidelines on temporary site operations, the handling of household hazardous waste and the volume reduction methods of incineration, chipping, grinding and recycling.

Temporary Debris Storage Site

Site Preparation. The topography and soil/substrate conditions should be evaluated to determine best site layout. When planning site preparation, think of ways to make site closure and restoration easier. For example, if the local soils are very thin, the topsoil can be scraped to bedrock and stockpiled in perimeter berms. Upon site closeout, the uncontaminated soil can be respread to preserve the integrity of the tillable soils.

Site Operations. Lined temporary storage areas should be established for ash,

household hazardous waste, fuels and other materials that may contaminate soils and groundwater. Plastic liners should be placed under stationary equipment such as generators and mobile lighting plants.

These actions should be included as a requirement in the contract scope of work.

See Appendix H for an example Scope of Work for a Site Management for Debris Reduction Contract.

If the site is also an equipment storage area, fueling and equipment repair should be monitored to prevent and mitigate spills of petroleum products and hydraulic fluids. Include clauses in the contract to require immediate cleanup by the contractor.

Be aware of and lessen the effects of operations that might irritate occupants of neighboring areas. Establishment of a buffer zone can abate concerns over smoke dust, noise and traffic.

Consider on-site traffic patterns and segregate materials based on planned volume reduction methods.

Operations that modify the landscape, such as substrate compaction and over excavation of soils when loading debris for final disposal, will adversely affect landscape restoration.

Debris removal and disposal should be viewed as a multi-staged operation with continuous volume reduction. There should be no significant accumulation of debris at temporary storage sites. Instead, debris should be constantly flowing to incinerators and grinders, or recycled with the residue

and mixed construction and demolition materials going to a landfill.

Baseline Data Collection. Private land and public land used as debris storage and reduction sites should be returned to its original condition following site closeout. Baseline data are essential to document the condition of the land before it is used as a debris storage and reduction site. As soon as a site is selected, the designated debris manager and staff should work closely with local, tribal and State officials to develop baseline data. The following actions should be taken to develop baseline data on all selected sites:

Videotape and Photograph the site.

Thoroughly videotape and/or photograph (ground or aerial) each site before any activities begin and periodically update video and photographic documentation to track site evolution.

Document Physical Features. Notations about existing structures, fences, culverts, irrigation systems and landscaping can help evaluate possible damage claims made later.

Sample Soil and Water. Random soil samples can be easily collected prior to volume reduction activities. More time consuming groundwater sampling can be done soon after operations commence. Household hazardous waste, ash and fuel storage areas should be sampled prior to site setup. Advance planning with community and State environmental agencies can establish requirements, chain of custody, acceptable collection methods, certified laboratories and test parameters. If in-house assets are not available, consider establishing an off-the-shelf contract with an environmental consulting firm that can respond rapidly.

Sketch Site Operation Layout. Periodically map or sketch activity locations so that areas of concern can be pinpointed later for additional sampling.

Document Quality Assurance Issues.

Document contractor operations that will have a bearing on site closeout, such as petroleum spills at fueling sites, hydraulic fluid spills at equipment breakdowns, contractor installation of water wells for stock pile cooling or dust control, discovery of household hazardous waste in debris and details on any commercial, agricultural or industrial hazardous and toxic waste storage and disposal.

Plan Environmental Remediation. Final restoration of the landscape must be acceptable to the landowner. Therefore, plan the landscape restoration as early as possible, preferably incorporating a basic plan in the lease. Come to an agreement with the landowner prior to occupancy to establish reasonable expectations of site conditions upon site closeout.

Baseline Data Checklist. The following is a suggested baseline data checklist:

Before activities begin.

- o Take ground or aerial video/photographs.
- o Note important features, such as structures, fences, culverts and landscaping.
- o Check with the State Historic Preservation Officer to determine if any structures identified are listed on or eligible for the National Register of Historic Places.
- o Take random soil samples.

- o Take water samples from existing wells.
- o Check the site for volatile organic compounds.

After activities begin.

- o Establish groundwater monitoring wells.
- o Take groundwater samples.
- o Take spot soil samples at household hazardous waste, ash and fuel storage areas.

Progressive updates.

- o Update videos and photographs.
- o Update maps and sketches of site layout.
- o Update quality assurance reports and fuel spill reports.

Household Hazardous Waste

Pre-Disaster Planning. The designated debris manager and staff should be aware of the effects that household hazardous waste can have on the overall debris clearance, removal and disposal mission. Pre-disaster planning should include having professional hazardous waste response teams assigned ahead of time to provide assistance in identifying and disposing of household hazardous waste.

Household hazardous waste generated by a natural disaster may consist of common household cleaning supplies, pesticides, motor oil, lubricants, transmission and brake fluid, gasoline, anti-freeze, paints, propane tanks, oxygen bottles and batteries. Household hazardous waste may become mixed with other debris, requiring close attention throughout the debris clearance, removal and disposal process.

The designated debris manager and staff should implement the following pre-disaster planning actions:

- Assign trained hazardous waste response teams to collect, sort, store and dispose of excessive quantities of household hazardous waste.
- Have emergency hazardous waste contracts in place or prepare generic scopes of work that can be fine-tuned with minimal effort for removal and disposal of accumulated household hazardous waste.
- Coordinate with local, tribal, State and Federal regulatory agencies concerning possible regulatory waivers and other emergency response requirements.

Removal and Disposal Operations.

Household hazardous waste items should be segregated at curbside or brought to a designated drop-off site. Specially trained field technicians can identify dangerous product constituents, segregate incompatible chemicals and properly store or pack the waste for transportation to a facility specially permitted to accept hazardous waste. The following actions are required to ensure that household hazardous waste items are removed and disposed of safely:

- Where possible, separate household hazardous waste from other debris before removal. Arrange for salvageable household hazardous waste materials to be collected and segregated based on their intended use.
- Properly trained environmental contractors or emergency response personnel should remove industrial, commercial or agricultural hazardous and toxic waste.

- Maintain contact with regulatory agencies to ensure cleanup actions meet local, tribal, State and Federal regulations.
- Complete household hazardous waste identification and segregation before any demolition work begins.
- Qualified environmental contractors should remove any questionable debris that may be contaminated by household or commercial hazardous waste.
- Regular demolition contractors can remove uncontaminated debris.

Special Handling at Temporary Storage Sites. A separate storage area for household hazardous waste materials, contaminated soils and contaminated debris should be established at each site. The household hazardous waste storage site should be lined with an impermeable material and bermed to prevent contamination of the groundwater and surrounding area. Household hazardous waste materials should be removed from the temporary storage area and disposed of by a qualified environmental contractor in accordance with local, tribal, State and Federal regulations.

Commercial, Agricultural and Industrial Hazardous and Toxic Waste

Removal and disposal of large quantities of commercial, agricultural and industrial hazardous and toxic waste, such as asbestos, lead-based paint, pesticides, or fertilizers, may require the use of professional hazardous and toxic waste contractors. A contractor's inspection team should do the following:

- Establish contacts with local, tribal, State and Federal regulatory agencies.

- Interview tenants and building owners.
- Assess sites to document potential commercial or agricultural hazardous and toxic waste problems.
- Search buildings to establish potential hazards, such as asbestos, lead-based paint and underground tanks.
- Prioritize problems based on risk to human health and safety.

Volume Reduction Methods

Volume Reduction by Incineration. There are several incineration methods available for volume reduction. Each method should be considered in developing a volume reduction strategy.

Uncontrolled Open-Air Incineration. The least desirable method of volume reduction is uncontrolled open-air incineration because it lacks any type of environmental control. However, in the haste to make progress, local officials and/or independent landowners may employ this method early in a disaster. Uncontrolled open-air incineration should be closely monitored to ensure that only clean, woody debris is incinerated.

Controlled Open-Air Incineration. Controlled open-air incineration is a cost-effective method for reducing clean, woody debris in rural areas. Incineration of clean woody debris presents little environmental damage and the local agricultural community can use the resulting ash as a soil additive. Local agricultural extension personnel should be consulted to determine if the resulting ash can be recycled as a soil additive. The controlled open-air incineration option should be terminated if mixed debris enters the waste stream.

Air Curtain Pit Incineration. Air curtain pit incineration offers an effective means to expedite the volume reduction process while substantially reducing the environmental concerns caused by open-air incineration. The air curtain incineration method uses a pit constructed by digging below grade or building above grade (if a high water table exists) and a blower unit. The blower unit and pit comprise an engineered system that must be precisely configured to function properly.

The blower units deliver air at predetermined velocities and capacities. The blower unit must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. A nozzle 20 feet long will provide air at a velocity of over 120 miles per hour and will deliver over 20,000 cubic feet of air per minute to the fire. The air traps smoke and small particles and recirculates them to enhance combustion, which reaches over 2,500 degrees Fahrenheit. Manufacturers claim that combustion rates of approximately 25 tons per hour are achievable while still meeting emission standards.

Specifications and statements of work should be developed to expedite the proper use of the system. Before awarding a contract, the designated debris manager and staff need to ensure that the contractors are knowledgeable about air curtain pit incinerator design and operating procedures.

See Appendix H, Figures 1,2 and 3 for air curtain site setup and pit specifications.

Following are recommendations and warnings to assist the designated debris manager and debris staff in planning for air curtain pit incineration operations:

- Be aware that there are no industrial standards for air curtain pit incinerator operations. The set-up has to be customized using the information provided by the manufacturer and should consider such specifications as minimum blower air velocity, pit construction configuration, pit materials, ash handling, acceptable smoke levels and air monitoring requirements.
- Pits must be constructed out of a highly compacted material that will hold its shape.
- The water table elevation governs whether the pit is constructed above or below grade.
- Controls should be implemented to prevent contamination of the ground water. An acceptable solution is to use compacted limestone fill placed over an impervious clay layer.
- Planners should take the initiative in keeping the public informed. Local officials, environmental groups and local residents should be thoroughly briefed on the incineration means being used, how the systems work, environmental standards, health issues and the risk associated with each type of incineration. A proactive public information strategy should be included in any operation that uses incineration as a primary means of volume reduction.

Portable Air Curtain Incinerators. Portable incinerators use the same methods as air curtain pit incinerator systems. The only difference is that portable incinerators use a pre-manufactured pit in lieu of an onsite constructed earth/limestone pit. Portable air curtain incinerators are the most efficient incineration systems available

because the pre-manufactured pit is engineered to precise dimensions to complement the blower system. The pre-manufactured pit requires little or no maintenance as compared to earth or limestone constructed pits, which are susceptible to erosion. Portable air curtain units are ideal for areas with high water tables and sandy soils and areas where smoke opacity must be kept to a minimum.

Environmental Controls. The following are recommended environmental controls for all incineration methods:

- A setback of at least 100 feet should be maintained between the debris piles and the incineration area. Keep at least 1,000 feet between the incineration area and the nearest building. Contractors should use fencing and warning signs to keep the public away from the incineration area.
- The fire should be extinguished approximately two hours before anticipated removal of the ash mound. The ash mound should be removed when it reaches 2 feet below the lip of the incineration pit.
- The incineration pit should be either constructed above ground or below ground so that it is less than 8 feet wide and between 9 and 14 feet deep.
- The incineration pits should be constructed with limestone and reinforced with earth anchors or wire mesh to support the weight of the loaders. There should be a 1 foot impervious layer of clay or limestone on the bottom of the pit to seal the ash from the aquifer.
- The ends of the pits should be sealed with dirt or ash to a height of 4 feet.
- A 12 inch dirt seal should be placed on the lip of the incineration pit area to seal the blower nozzle. The nozzle should be 3

to 6 inches from the end of the pit.

- There should be 1 foot high nonflammable warning stops along the edge of the pit's length to prevent the loader from damaging the lip of the incineration pit.
- To prevent explosions, hazardous or contaminated flammable material should not be placed in the pit.
- The airflow should hit the wall of the pit approximately 2 feet below the top edge of the pit opposite the blower and the debris should not break the path of the airflow except during dumping.
- The pit should be no longer than the length of the blower system and should be loaded uniformly along its length.
- Check with appropriate State agencies for State specific requirements.

Smoke. Smoke generated by any of the above incineration methods is often interpreted by the general public as having an environmental impact. Therefore, it is important to also address smoke as part of the air monitoring guidelines. The visual measure of smoke emitted by a burning source is referred to as its "opacity." For disaster situations, the recommended opacity requirements should be set at 15% for 50 minutes out of an hour, not to exceed 40% for the remaining 10 minutes. This allows for additional debris that may be put into the incinerator during that hour. A 30-minute start-up time with a maximum of 40% opacity should be allowed.

Volume Reduction by Grinding and Chipping. Hurricanes, tornadoes and ice storms may present the opportunity to employ large-scale grinding and chipping operations as part of the overall debris volume reduction strategy. Hurricanes can

blow away scarce topsoil in the agricultural areas and cause extensive tree damage and blow-down. This two-fold loss, combined with local climatic conditions, may present an opportunity to reduce clean, woody debris into suitable mulch that can be used to replenish the topsoil and retain soil moisture.

The economic feasibility of grinding and chipping woody debris must be studied carefully. The cost of chipping and grinding is basically equal to that of incineration; however, there are significant differences in volume reduction. Incineration, for example, reduces the volume approximately 95%, leaving only an ash residue for disposal. Chipping and grinding reduces the volume on a 4-to-1 ratio (4 cubic yards is reduced to 1 cubic yard) or by 75%. For chipping and grinding to be feasible, the 25% of volume remaining must have some benefit or use. The ability to use the recycled wood chips as mulch for agricultural purposes or as fuel for industrial heating or in a cogeneration plant helps to tip the economic scale toward chipping and grinding. Because of shallow topsoil conditions in some locations, mulch is a desirable product. In other locations, however, the mulch may become nothing more than a landfill product. The designated debris manager and staff should work closely with local environmental and agricultural groups to determine if there is a market for mulch.

There are numerous makes and models of grinders and chippers on the market. When contracting, the most important item to specify is the size of the mulch. If the grinding operation is strictly for volume reduction, size is not important; however, mulch to be used for agricultural purposes must be of a certain size and virtually free of paper, plastic and dirt.

Grinders are ideal for use at debris storage and reduction sites because of their high volume reduction capacity. However, there is a need for a large area to hold the resulting mulch. Ingress and egress to the site is also an important consideration. Finally, properly locating the grinders is critical for noise and safety considerations.

The following specifications should provide a mulch product that is suitable for agricultural purposes:

- The average size of wood chips produced should not exceed 4 inches in length and $\frac{1}{2}$ inch in diameter.
- Production output should average 100 to 150 cubic yards per hour when debris is moderately contaminated with plastic and dirt and feeding operations are slow and 200 to 250 cubic yards per hour for relatively clean debris. Note that this is not machine capability; this is contractor output or performance capability.
- Chips or mulch should be stored in piles no higher than 15 feet and located so as not to hinder hauling operations.
- Contaminants are all materials other than wood products and should be held to 10% or less for the mulch to be acceptable.
- Plastics should be eliminated completely. To help eliminate contaminants, root rake loaders should be used to feed or crowd materials to the chipper or grinder. Bucket-loaders tend to scoop up earth, causing excessive wear to the grinder or chipper. Hand laborers should remove contaminants prior to feeding the grinders. Shaker screens should be used when processing stumps with root balls or when large amounts of soil are present

in the woody debris. The separated soil can also be recycled back to the agricultural community.

Brush chippers are ideal for use in residential areas, orchards, or groves. The damaged and uprooted trees present significant problems if they are pushed to the right-of-way to wait for eventual pick-up and transport to storage and reduction sites. In addition, the use of on-site chippers allows the material to be used as mulch in the area where it is chipped, thereby saving the cost of transporting it.

Volume Reduction by Recycling. Recycling should be considered early in the debris clearance, removal and disposal operation because it may present an opportunity to reduce the overall cost of the operation. Metals, wood and soils are prime candidates for recycling.

Hurricanes and earthquakes may present opportunities to contract large-scale recycling operations and achieve an economic return from some of the prime contractors who exercise their initiative to segregate and recycle debris as it arrives at the storage and reduction sites.

Specialized contractors should be available to bid on disposal of debris by recycling, if it is well sorted. Contracts and monitoring procedures should be developed to ensure that the recycling contractors comply with local, tribal, State and Federal environmental regulations.

Residue that cannot be recycled, such as cloth, plastic, mattresses, rugs and trash, should be shredded to reduce volume before being sent to a landfill for final disposal.

The following materials are suitable for recycling:

Metals. Hurricanes and tornadoes can cause extensive damage to mobile homes, sun porches and green houses. Most of the non-ferrous and ferrous metals are suitable for recycling. Metal maulers and shredders can be used to shred trailer frames, trailer parts, appliances and other metal items. Ferrous and non-ferrous metals are separated using an electromagnet and then sold to metal recycling firms.

Soil. Cleanup operations using large pieces of equipment pick up large amounts of soil. The soil is transported to the temporary storage and reduction sites, where it is combined with other organic materials that will decompose over time. Large amounts of soil can be recovered if the material is put through some type of screen or shaker system. This procedure can produce significant amounts of soil that can either be sold or recycled back into the agricultural community. It is more expensive to transport and pay tipping fees at local landfills than to sort out the heavy dirt before moving the material. Shakers can be used to remove dirt from mixed debris. The dirt can be stored on-site, used as landfill cover material or sold to the agricultural community.

In agricultural areas where chemical fertilizers are used heavily, recovered soil may be too contaminated for use on residential or existing agricultural land. Monitoring and testing the soil may be necessary to ensure that it is not contaminated with chemicals. If the soil is not suitable for any agricultural use and is a risk to the public health, it may be used as cover material at a landfill.

Construction Materials. Construction and demolition waste is material generated in the demolition of disaster damaged structures and facilities. This waste stream includes concrete, asphalt, gypsum, wood waste, glass, red clay bricks, clay roofing tile and asphalt roofing tile. Much of this material can be recycled, if recycling contractors are readily available.

Wood. Clean, woody debris can be ground, chipped, shredded, or removed by timber operations or pulpwood cutters.

Chapter 8

TEMPORARY DEBRIS STORAGE AND REDUCTION SITE ENVIRONMENTAL CONSIDERATIONS

Debris clearance, removal and disposal activities can have significant environmental ramifications. The temporary storage and reduction sites must be set up, operated and closed out properly to minimize environmental harm. This chapter provides guidelines for air quality monitoring and site closeout procedures, including ash, soil and groundwater testing.

Air Quality Monitoring

Following a major natural disaster, emphasis is on rapid debris removal from the public rights-of-way. This results in debris coming into a temporary storage site faster than it can be reduced and ultimately disposed of. As a result, organic matter in debris piles begins to decompose and may create toxic or volatile vapors. Incineration operations may also produce pollutants that impact the air quality of the area. Air quality must be monitored to ensure compliance with local, tribal, State and Federal environmental regulations.

Air quality monitoring should be instituted at all debris storage and reduction sites to check for volatile organic vapors of a petrochemical origin and airborne pollutants caused by incineration operations.

Actions should be taken by the temporary debris storage and reduction site operators to keep pollutants at or below acceptable local, tribal, State and Federal environmental standards. Testing procedures should include readings for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead and particulate matter smaller than 2.5 microns.

Flame- and photo-ionization detectors should be used to detect volatile organic vapors. The flame-ionization detector is used to establish parts-per-million at the debris pile. If readings are above acceptable standards, the photo-ionization detector should be used to verify the initial readings.

Incineration site readings should be taken at the edge of the incineration pit and approximately 150 feet away. Scattered locations should be established and checked periodically. Wind direction, temperature and any other pertinent meteorological information should be recorded.

Coordinate with the appropriate local, tribal, State and Federal environmental agency responsible for implementing the Quality Assurance Sampling Plan.

The following situations may negatively affect the air quality at a temporary storage and reduction site:

- The incineration pit is not properly constructed.
- The incineration pit has degraded to the point where key specifications are no longer met.
- A poorly trained operator improperly feeds the pits.
- The material is not properly segregated.

- Prolonged rains may accelerate the decomposition process, thereby causing the emission of volatile organic gases.

Site Closeout Procedures

Each temporary debris storage and reduction site will eventually be emptied of all material and restored to its previous condition and use. The contractor must assure the designated debris manager and staff that all sites are properly restored. Local, tribal, State and Federal government monitors should verify this. Site restoration will go smoothly if baseline data were properly collected and site operation procedures were followed.

Closeout Steps. The key to timely closeout of the sites is the efficient advance scheduling of activities for multiple sites. The basic closeout steps are:

- Remove all debris from the site.
- Conduct an environmental audit or assessment.
- Develop a restoration plan.
- Submit the plan for review and approval by the appropriate environmental agency.
- Execute the plan.
- Get acceptance from the landowner.
- Terminate lease payments.

Potential Problems.

- The length and terms of private property leases can create suspense dates that become very costly to meet and difficult to manage.
- Differences between local, tribal, State and Federal government environmental regulations may cause problems.
- Failure to collect baseline data can result in

fraudulent claims for damage to nonexistent structures or the land itself. Videotape recordings and/or photographs should be taken prior to opening a site to prevent fraudulent claims. Background soil and water samples should also be taken before site activities begin to compare with closeout soil and water samples.

Planning Requirements. The following planning requirements should be implemented to closeout a temporary storage and reduction site:

- Coordinate with local, tribal and State officials responsible for construction, real estate, contracting, project management and legal counseling regarding requirements and support for implementation of a site restoration plan.
- Establish a testing and monitoring program for air, ash, soil and groundwater.
- Ensure that the contractors are required to remove all residual debris from temporary sites to approved landfills prior to closure.
- Reference appropriate and applicable environmental regulations.
- Prioritize site closures.
- Schedule closeout activities.
- Develop cost estimates.
- Develop decision criteria for certifying satisfactory closure based on limited baseline information.
- Develop administrative procedures and contractual arrangements for site closeout.
- Designate approving authority to review and evaluate contractor closure activities and progress.

- Retain staff during the closure phase to develop site-specific restoration actions.

Temporary Site Closure Checklist The following is a recommended temporary site closure checklist. Narrative responses may be required along with other closure documents.

- Site number and location.
- Date closure complete.
- Household hazardous waste removed.
- Contractor equipment and temporary structures removed.
- Contractor petroleum spills cleaned.
- Ash piles removed.
- Comparison of baseline information to conditions after the contractor has vacated the temporary site.
- Appendices.
 - Closure documents.
 - Contracting status reports.
 - Contract.
 - Testing results.
 - Correspondence.
 - Narrative responses.

Ash, Soil and Groundwater Testing

Ash, soil and groundwater need to be tested to determine that no long-term environmental contamination is left on the site. High levels of site activity may require additional testing and contaminated material may need to be disposed of in an approved landfill.

Ash Testing. All ash piles should be tested using the Toxicity Characteristic Leaching Procedure. One composite sample from each separate ash pile should be analyzed. A minimum of ten samples taken from different strata within the pile is appropriate to develop the composite sample. If unacceptable contamination is not found, ash may be placed in a Class I landfill. If unacceptable levels of contamination are detected, the material should be further evaluated, if appropriate and placed in a

hazardous material landfill, as appropriate.

Soil Testing. After the stockpiles are removed from the site, soils should be tested for the presence of volatile hydrocarbon contamination. Samples should be taken immediately below the surface, if it is determined that the contractor spilled hazardous materials, such as oil or diesel fuel, on the site.

The entire incineration site should be inspected for any areas of discoloration, odor, or obvious problems. Such areas should be identified and restored, as necessary .

Groundwater Testing. Runoff from the incineration sites and other debris stockpiled within storage areas have the potential to contaminate the aquifer. Although the probability of contamination is low, consideration should be given to placing ground water monitoring wells around the perimeter of the site, if it is adjacent to an important aquifer. Groundwater should be tested to determine the probable effects of rainfall leaching through either the ash areas or the stockpile areas and be compared to generally accepted water quality standards.

