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**WATER INTRUSION AND FLOOD CONTROL MAINTENANCE PLAN**

**[Insert District Name]**

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Location:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Water Intrusion Plan**

**Overview**

In order to have an effective water intrusion plan, a school or district should ensure that the information that follows is understood and communicated throughout the organization. This plan is a minimum guideline for water intrusion and must be customized for each location. Responsible staff should be trained, competent and have proper levels of authority to act quickly in the event of a leak, spill or flood regardless of size.

**Plan Management**

Plan implementation is imperative to effectively control moisture and prevent water intrusion and subsequent mold growth within buildings. Components of a comprehensive water intrusion plan include:

* Specifying responsibilities for management, maintenance and facilities workers and the general employee population.
* Understanding and documenting locations of equipment and/or sources that may contaminate the building due to leak or flooding such as locations and routes of piping for bathrooms, locker rooms, chillers, water heaters, boilers, water supply lines, fire system supply and HVAC units and the like.
* Integrating preventative practices to identify issues before they create more catastrophic damage occurs. This includes routine building and equipment inspections, ensuring drains, gutters and the like remain clear of blockage and strictly adhered to preventative maintenance procedures on mechanical, HVAC and plumbing equipment.
* Seasonal plans to prevent damaged piping and/or equipment due to freezing temperatures.
* Availability of materials to prevent damage due to extreme weather causing floods or water entry into the building.
* Ensuring proper equipment is available for prompt remediation on small incidents and securing vendors that can react to more catastrophic or emergent needs.
* Procedures to evaluate suspect mold which should include environmental monitoring and contingency plans for alternative facilities, classrooms or administrative activities.
* Accident/incident reporting procedures, documentation and record keeping logs/maintenance.
* Comprehensive training practices that anticipate seasonal variations, communicate best practices and reinforce procedures and responsibilities.

**Responsibilities**

**Maintenance& Operations Director**

The M&O Director is responsible for general oversight of plan policies and procedures, and periodic revisions as new guidelines or best practices evolve. The M&O Director has authority to allocate resources where needed, and approve necessary corrective actions. The M&O Director also provides factual and timely responses to school site work orders. Prompt and thorough responses to questions concerns regarding cause, cleanup, and completion of a moisture or mold intrusion incident will encourage confidence in management’s handling of the situation and minimize speculation by residents.

Maintenance & Operations Director:

Phone: (     )      -      Email:

**Maintenance Supervisor**

The Maintenance Supervisor is responsible for administering the general maintenance procedures outlined in the plan. The Maintenance Supervisor shall also coordinate response and elimination of moisture problems, water-damaged building materials, and mold remediation. These duties may include contracting with outside specialists; supervising on-site employees conducting cleanup work; and overseeing contractor’s remediation work.

Maintenance Supervisor:

Phone: (     )      -      Email:

**Onsite Maintenance Staff**

Onsite maintenance staff is responsible for immediate investigation and reporting of any water intrusion or moisture collection incident, water damage, or mold growth discovered during routine building inspections or reported by residents. The maintenance staff must notify the Maintenance Supervisor of all water occurrences.

# Training

The Plan should be reviewed with all maintenance staff at least twice annually. These reviews should include a discussion of any new information; communication and prevention procedures; inspection requirements; small area cleanup guidelines; and personal protective equipment required for small remediation projects conducted by onsite personnel. New hires will receive training on plan procedures during their initial safety and training orientation.

# Documentation and Record Keeping

Maintaining accurate and well-organized records is the responsibility of the M&O Director, who must document all water intrusion events, response activities, and follow-up. Sample templates are attached in the appendix and should be modified to suit individual occurrences. All original records shall be retained for at least eleven years (or as required by law) at the site and at the district office in accordance with local laws and regulations. Records should be filed by building number. **These records may be requested by CSRM in the event a claim is filed.**

**Building Inspections**

Regularly scheduled building inspections can help identify water intrusion problems before mold has a chance to establish itself. [**INSERT PROPERTY NAME**] currently conducts the following inspections:

* *Monthly Building Inspections* – Performed by Maintenance Supervisor or competent maintenance staff with written results submitted to the M&O Director.
* *Bi-Annual Utility Closet Inspections* – Performed by maintenance staff with written results submitted to the M&O Director.
* *Scheduled HVAC Filter Inspections/Change Outs*: Performed by staff per manufacturer’s recommended maintenance schedule. Results are documented in maintenance log.
* *Scheduled HVAC Equipment Maintenance*: All equipment is inspected and serviced per manufacturer’s recommended schedule and are documented on the HVAC Checklist.
* *Daily observations of the properties* by Management Staff, Maintenance Supervisor, and maintenance staff.

# Investigating Suspected Moisture and Mold Problems

If water intrusion, water damage is suspected or reported, the Maintenance Supervisor or designated maintenance staff member must investigate the situation as soon as possible. **Response to water intrusion events MUST occur immediately upon discovery to avoid further damage.**

**Reporting Incidents**

If the incident or condition is reported by a school site, the Maintenance Supervisor shall complete a Work Order Request form and assign responsibility for investigation and evaluation of the situation to a maintenance staff member within 8 hours of the report. Ideally, the incident should be investigated within 12 hours of the report, but not more than 24 hours after.

**Safety Procedures While Investigating Moisture and Mold Problems**

* Employees must not touch mold or moldy items with their bare hands. Wear latex gloves and use a screwdriver or other tool to probe or scrape contaminated areas. After the investigation, wash hands thoroughly before touching eyes or face.
* Do not get mold or mold spores in eyes.
* Do not breathe in mold or mold spores.
* Use Personal Protective Equipment when disturbing mold. The minimum PPE is an N-95 respirator, latex glove, and safety glasses.
* Ensure moisture investigation training is incorporated into regular scheduled safety meetings for maintenance and facilities personnel.

**Investigation Follow Up**

When the investigation is completed, the M&O Director shall determine what course of action is necessary and, if needed, complete a Work Order Request form for immediate start of repair or remediation efforts. This must be done in addition to any Incident Report submitted by the Maintenance Supervisor. Service requests and Mold and Moisture Incident Reports shall be assigned a number, logged in the tracking file, and filed by school site for later reference. **When in doubt, please consult with you CSRM Risk Manager.**

# Response to a Water Intrusion

Staff responding to a water intrusion event should initially identify the source of water and, if possible, shut off the source or repair the damage that is allowing the intrusion. If the situation is beyond the employee’s ability to control, the employee must immediately contact a supervisor or the Maintenance Supervisor to report the problem and request assistance. The Maintenance Supervisor or M&O Director will determine if a pre-qualified outside contractor is required and contact the contractor immediately.

Pre-qualified remediation/drying restoration contractors shall be identified for response to water damage situations prior to water intrusions.

# Remediation of Water Intrusion

Mold growth can be minimized by expedient, appropriate water damage cleanups. Response to a water intrusion event should occur immediately upon discovery, with substantial action completed within 24 to 48 hours after discovery to mechanically pickup up to 95% of accumulated water to minimize the potential for mold growth.

**Appendix A**

**(Emergency Notification and Inspection Checklists)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **District Loss Notification Contacts:** | | | | This table must be updated on a regular basis (at minimal quarterly) to ensure correct contact information. | | | | **Last Update:** | | | | **School Sites:** |  | **Notes:** | | School Site: |  |  | | Contact Person: |  |  | | Phone No.: |  |  | | Email: |  |  | | School Site: |  |  | | Contact Person: |  |  | | Phone No.: |  |  | | Email: |  |  | |  |  |  | | School Site: |  |  | | Contact Person: |  |  | | Phone No.: |  |  | | Email: |  |  | |  |  |  | | School Site: |  |  | | Contact Person: |  |  | | Phone No.: |  |  | | Email: |  |  | |  |  |  | |  | **Insert others as needed** |  | |
| |  |  |  | | --- | --- | --- | | **Property Loss Notification Contacts:** | | | | This table must be updated on a regular basis (at minimal quarterly) to ensure correct contact information. **Losses over $100K, requires JPA Authority.** | | | | **Last Update:** | | | |  |  | **Notes:** | | Company Name: | Carl Warren & Company |  | | Contact Person: | Jill Sibler/Neil Butterbaugh |  | | Phone No.: | 909-884-8669 |  | | Email: | [jsibler@carlwarren.com](mailto:jsibler@carlwarren.com)  [nbutterbaugh@carlwarren.com](mailto:nbutterbaugh@carlwarren.com) |  | |  | **REMEDIAL CONTRACTORS:** |  | | Company Name: | Padgett’s |  | | Contact Person: | Greg Padgett |  | | Phone No.: | 1-800-273-1194 |  | | Email: | GREGP@TRUSTPADGETTS.COM |  | |  |  |  | | Company Name: | All County Environmental Restoration |  | | Contact Person: | Don Moser |  | | Phone No.: | 1-866-839-8049 |  | | Email: | [dmoser@allcountyevnironmental.com](mailto:dmoser@allcountyevnironmental.com) |  | |  |  |  | | Company Name: | BELFOR, Inland Empire |  | | Contact Person: | Mitch Lavine, EGE |  | | Phone No.: | 1-877-543-8236 |  | | Email: | [Mitch.lavine@us.belfor.com](mailto:Mitch.lavine@us.belfor.com) |  | |  |  |  | |  | **Insert others as needed** |  | |

**Self-assessment for mitigation and prevention of liquid damage**

**Instructions:**

1. Complete for each building or other major complex.
2. Prepare a written plan that details what to do in the event of a leak or liquid damage. Assign overall responsibility to a person in authority to oversee the process.
3. Review this plan at least once a year. Several items should be checked quarterly, such as the list of responders and the inventory check of materials and equipment needed for leak response and clean-up.

|  | **Item** | **Yes** | **No** | **Actions/Comments** |
| --- | --- | --- | --- | --- |
| 1 | Is there a written plan detailing what to do in the event of a leak and liquid damage? |  |  |  |
| 2 | Is the plan reviewed for changes and discussed at staff meetings at least quarterly? |  |  |  |
| 3 | Has the “Checklist for valuable equipment areas” been completed for all areas containing critical electronic and operational equipment, main telephone rooms, computer centers etc.? (Please also refer to Food Checklist) |  |  |  |
| 4 | Is the “Checklist for valuable equipment areas” reviewed during the planning or design stage for new construction, renovation or relocation projects? |  |  |  |
| 5 | Is someone immediately available at all times (24 hours, 7 days) with authorization to call and bring in the professional cleanup and restoration companies? (Please refer to the Property Loss Notification Contacts List) |  |  |  |
| 6 | Are the names and phone numbers for professional cleanup and restoration companies readily available? (Please refer to the Property Loss Notification Contacts List) |  |  |  |
| 7 | Is someone available on all shifts trained to respond immediately to any leak? |  |  |  |
| 8 | Is this list of responders reviewed at least quarterly to check for turnover? (Please refer to the Property Loss Notification Contacts List) |  |  |  |
| 9 | Are all those responding to a leak aware of the location of valves? |  |  |  |
| 10 | Does the staff have immediate access to a spill response cart/supplies and emergency pipe repair supplies? |  |  |  |
| 11 | Is the supply of spill response and pipe repair materials complete, readily accessible and checked at least quarterly? |  |  |  |
| 12 | Are pipe diagrams or prints up-to-date and showing the location of valves for all liquid-carrying systems? Isometric drawings are very beneficial. (Note 1) (Appendix C) |  |  |  |
| 13 | Are valves placarded or tagged for easy identification? |  |  |  |
| 14 | Are shutoff valves “exercised” (closed, reopened and lubricated as needed) at least annually to verify they can be quickly closed during an emergency? |  |  |  |
| 15 | Are small leaks promptly repaired? A small leak may be a sign of hidden corrosion or other problem with potential for growing into a catastrophic leak. |  |  |  |
| 16 | Is the cause of any leak analyzed to determine if it was an isolated occurrence or a symptom of a system-wide problem? |  |  |  |
| 17 | Are housekeeping personnel instructed to immediately notify maintenance when any types of dripping, leakage or clogged drains are found? |  |  |  |
| 18 | Is there a lockout/tagout procedure in place when valves are shut on liquid-carrying systems under repair or modification? |  |  |  |
| 19 | Is there close monitoring of third-party work that may affect piping systems (sprinklers, water, etc.)? |  |  |  |
| 20 | Are there any liquid storage tanks or vessels (hot water, condensate, boilers, fuel oil, etc.) inside the building, mechanical penthouse or on the roof? |  |  |  |
| 21 | If so, is there a dike around the tank or vessel and/or drains to contain or effectively carry away leaking fluids? Dikes are required around fuel tanks. |  |  |  |
| 22 | Are there leak detection sensors at low points and inside diked areas? If so, have these been tested regularly? |  |  |  |
| 23 | Are there any floor openings or cracks through which a leaking fluid may pass through and damage areas below? (Note 2) |  |  |  |
| 24 | For basement areas, are there any water mains, sprinkler mains or liquid utility piping entering through the walls or floor? |  |  |  |
| 25 | Is there any evidence of leakage or seepage through the wall or floor openings? If so, indicate repair schedule. |  |  |  |
| 26 | Is an underground plan of these mains immediately available showing the location of shutoff valves? (in case an underground leak occurs and water flows through the wall or floor opening) (Note 3) |  |  |  |
| 27 | If any part of the property is exposed to potential flood, is there a formal flood emergency plan or similar flood preparation plan? (Please also refer to Food Checklist) |  |  |  |
| 28 | If your office is in an earthquake- prone area, has your automatic sprinkler system been surveyed by a professional to determine extent of vulnerability for leakage? (Note 4) |  |  |  |
| 29 | Are roofs inspected regularly (minimum of every 6 months, or after severe storms) to check for damage or deterioration such as cracking, splitting, blistering, separation, holes or other potential sources of leakage? |  |  |  |
| 30 | Are there any roof leaks or evidence of ponding on the roof? If so, indicate reasons and the repair schedule. |  |  |  |
| 31 | Are roof-mounted cooling towers inspected regularly, and are cooling tower basins “watertight”? (Note 2) |  |  |  |
| 32 | Are there any areas directly adjacent to the building where rainwater can accumulate during heavy rains? Large landscaping planters built next to grade wall and windows are an example where water can pond and find its way into the building. (Please also refer to Food Checklist) |  |  |  |

**Notes:**

1. Liquid-carrying systems may include: sprinkler systems, hot and cold water piping, chilled water lines for cooling, hot water lines for heating, condensate piping, sewer lines, drain lines, fuel oil piping, etc.
2. Floor openings often occur around penetrations made for pipe and conduit. Seal the open space around the pipe or conduit to prevent passage of liquid. Often, these are penetrations in concrete floors that are required to be fire stopped anyway. Use a fire stop that produces a tight liquid seal as well. A fire stop is a UL-listed fire-resistive material used to fill holes in fire-rated floors and walls. Some types resemble caulk.
3. Accurate drawings of the underground water mains are important in a large complex with private mains. A leak may occur in an underground pipe near a building. There may be a control valve in the basement or just outside the building. Closing this valve may not stop the leak if the break is upstream of the valve and the water is flowing along the outside of the pipe then into the building. A plan showing the location of all valves in the system will be needed to quickly locate another valve to shut and stop the leak.
4. Sprinkler pipes and heads often break during earthquakes when they are hit by swaying fixtures or ceiling tile systems. Breaks or leaks also occur if the sprinkler pipes are not adequately braced per the latest code. In these situations, breaks or leaks occur from excessive pipe swaying or when pipe movement is not in sync with the building’s movement.

**Post Event Water Intrusion Checklist**

The following actions will help staff begin the cleanup process when water intrusion occurs. Restoration contractors have the equipment necessary to quickly remove large volumes of water and to clean and treat buildings and furnishings. They have the experience and resources to effectively clean and repair electronic equipment and to recertify it if necessary.

|  |  |
| --- | --- |
| Action Taken (Please also refer to Food Checklist) | Check |
| **Building** | |
| Remove wet items such as carpeting, padding and ceiling tile, anything that holds moisture to an exterior location or cutoff dock area. |  |
| Use all available and rentable vacuum equipment to eliminate water on floors as soon as possible. Also use squeegees and mops. |  |
| Use fans to help circulate the air and assistdrying. |  |
| Open drawers and closet doors to enhance drying. |  |
| Blot hard surface furniture dry. Place non-staining blocks or aluminum foil under furniture legs. |  |
| Lift draperies off carpet and suspend. |  |
| Move photos, paintings and art objects to a safe, dry location. |  |
| Use air conditioning if water damage occurs during a warm season. |  |
| **Equipment** | |
| Turn off power immediately! Do not energize wet equipment! |  |
| Do not reenergize equipment until authorized by qualified restoration personnel or manufacturer's technical representative. |  |
| Open cabinet doors/side panels/covers/drawers - drain all water. |  |
| Remove equipment to a cool, dry area after wiping down and eliminate as much moisture and contaminants as possible. |  |
| Set up fans to move ambient air through equipment. |  |
| Blow water out with clean compressed air (or preferably liquid nitrogen) and/or other drying equipment. |  |
| Spray water displacement solvent on electronic components (such as contact cleaner, LPS 1 or alcohol/Freon mixture). |  |
| Wipe down and dry metal surfaces as soon as possible - use protective surface treatments to slow corrosion (CRC, LPS 1). |  |
| Follow up with professional restoration services |  |

**Spill Response Cart and Pipe Repair Supplies**

A spill kit and emergency plumbing repair supplies should be available for quick accessibility and use anywhere in the building. The following list contains suggestions for a spill response kit. The maintenance department should participate in selecting the contents and locations of the kits. Make plastic sheets to cover electronic equipment readily available in the applicable areas for use by operators.

|  |  |
| --- | --- |
| Items to Include (Please also refer to Food Checklist) | Check |
| **Spill Response Cart and Pipe Repair Supplies** | |
| Plastic sheets to throw over and protect equipment (should be immediately available in every valuable equipment area) |  |
| Plastic bags to dispose of wet material |  |
| Wet vacuums or other water removal equipment (commercial grade with effective GFls, squeegees, mops, buckets) |  |
| Portable pump(s) and hose |  |
| Water displacing solvents for applying to electrical equipment (examples: contact cleaner, LPS 1 greaseless lubricant) |  |
| Preservatives for metal (examples: CRC, LPS 1) |  |
| Towels for wiping up (assumed to be available from housekeeping) |  |
| Absorbent socks, to contain and absorb spills |  |
| Alcohol for computer equipment (ISA99 for purity) |  |
| Pipe clamps to place around and stop a leak (pipe repair kit) |  |
| Diagrams of piping systems with valve locations highlighted |  |
| Dehumidifiers (or ready rental source) |  |
| Boots |  |
| Portable dikes for diverting surface water away from below grade doorways and possible points of water entry. This would be necessary during unusually heavy rains, and especially if the hospital has a history of water accumulating near certain doorways, loading docks, parking ramps, etc. |  |

**Appendix B**

**(Flood Checklist)**

**FLOOD CHECKLIST**

The following may serve as a checklist when preparing for a flood. This checklist should be tailored to processes/operations, flood protection equipment and flood potentials at your specific District. The time required to complete each item should be determined in advance to allow proper planning.

**ACTION TO BE TAKEN BEFORE THE FLOOD SEASON**

**SECTION A - DISTRICT MANAGEMENT/EMERGENCY TEAM:**

Develop a Flood Emergency Response Team as part of the District Emergency Organization.

Review the Flood portion of the District Emergency Response plan and make any updates as required.

Prepare, or locate, and maintain a scaled plan or diagram of the facility which clearly shows the location of all fire protection and other emergency equipment.

Obtain and review applicable flood maps for each location and evaluate flood susceptibility of each building.

Pre-qualify and pre-commit as many emergency and remedial service contractors as possible, including both local and national firms.

Obtain multiple suppliers for critical building components, equipment and stock necessary to resume operations/business.

Obtain the home telephone numbers of all committed contracting firms, utilities, and other services critical to resumption of operations.

Establish good credit with service providers, suppliers and contractors. Good credit and cash speak loudly in difficult times.

Establish and maintain good relationships with local police and fire departments.

Understand your energy needs and make arrangements for backup utilities and fuel sources where possible. Consider emergency generators, alternative fuels, and the like.

Identify alternative means of transportation and alternative routes for all critical personnel, services, suppliers, contractors, etc. and establish relationships with lease and rental companies.

Develop a phone directory for critical suppliers, contractors, services, etc. Obtain phone books from surrounding major cities in the event you need to obtain services and supplies from surrounding areas.

**SECTION B - BUILDING AND STRUCTURES**

Review the structural integrity of each building and structure foundation including physical damage, etc. Check any Flood doors, gates, shields, or barriers for proper operation and water tightness including latches and hardware. Where possible, brick up lower building openings susceptible to flooding. Evaluate the need for floodwalls, flood drains and flood culverts.

Inspect the following to ensure they can withstand erosion and heavy water flow conditions:

|  |  |  |
| --- | --- | --- |
| Storm Drains | Culverts | Catch Basins |
| Driveways/Walkways | Grounds/Playgrounds | Other |

**SECTION C – EMERGENCY EQUIPMENT:**

Have plywood and sandbags available to barricade floodwaters.

Make arrangements for several forms of emergency communications including cellular phones, two-way radios, ham radio operators, etc.

**ACTION TO TAKE ONCE A FLOOD WARNING HAS BEEN ISSUED:**

**SECTION A - DISTRICT MANAGEMENT/EMERGENCY TEAM:**

Assemble the Plant Emergency Organization and supplies and equipment at a designated safe location on site. Consider the following:

(1) Emergency lighting

(2) Emergency generators

(3) Portable pumps and hoses

(4) Lumber and nails

(5) Grease or other metal protection

(6) Tape for windows, doors and other openings

(7) Sandbags

(8) Squeegees and mops (9) Fans and dehumidifiers (10) Caulking compound (11) Tarps

(12) Manual and power tools

Establish emergency communications methods.

(13) Shovels, axes, etc. (14) Saws and chain saws

(15) Emergency telephone list(s)

(16) Ensure that the School Site Emergency Organization has the following:

(a) Nonperishable food

(b) First aid equipment

(c) Lighting

(d) Two-way communication equipment

(e) Stored drinking water

(f) Blankets

(g) Appropriate clothing including rain gear and boots

A designated member of the District Emergency Organization should monitor weather and flood reports from National Sources. The Army Corps of Engineers can provide predictions of river levels and status of dams and levees. The National Weather Service (NWS) is a good source of weather information.

Monitor the River Flood Forecast using the National Ocean and Atmospheric Administration NOAA

website <http://www.weather.gov/ahps/forecasts.php>

Equipment repair and/or replacement suppliers are placed on alert.

If necessary, shut down operations and processes safely in accordance with OEM recommendations. Drain open tanks of combustible, flammable or hazardous liquids to approved, sealed containers.

Release non-essential staff, or direct to a designated safe location.

Shut off all flammable and combustible liquid piping and gas lines at the source or entry into the property to reduce the likelihood of release if pipes are broken. When equipment or processes must be kept in operation, service to all other areas of the plant should be secured using isolation valving. Pipes should be properly supported and protected from floating debris.

Turn off non-essential lighting, machinery and equipment. Anticipate power outages and surges; be prepared to shut down susceptible systems such as computers. De-energize equipment which may become submerged. Take care not to impair emergency equipment such as electric motor driven fire pumps or fire alarms.

Back up important computer data and records and store backups in a safe, elevated location not subject to flooding.

Protect important paper records from flooding, rain, and debris and relocate to an elevated location not subject to flooding.

When possible, move important equipment (including mobile equipment) and stock to higher elevations not subject to flooding. Use past flood history to select "safe" areas. If equipment and stock cannot be relocated or elevated, sandbags, tarps, or waterproof coatings, such as grease, may be applied to help protect exposed metal surfaces.

The Flood Emergency Team should remain on site until the emergency has passed.

**SECTION B - BUILDINGS AND STRUCTURES:**

Close and secure any flood doors, gates, shields, or other flood barriers.

Close any valves in building drains or plumbing to prevent back up into the buildings.

Place sandbags at lower building openings such as doors and other openings susceptible to flooding, and around important outdoor equipment, to divert floodwaters.

Fill aboveground and underground tanks with product or water to improve stability and minimize damage from Flooding waters.

Check tanks for proper anchorage and extend vent lines above level of expected flooding. Anchor and secure all portable containers of flammable or combustible liquids.

Anchor and tie down all small structures, equipment, and storage in the yard, trailers, conveyors, lumber, process equipment, etc. to prevent movement by Floodwaters. Move smaller objects inside if possible.

Barricade important outdoor equipment with sandbags to provide protection against floating debris. Move mobile equipment to higher elevations.

Brace unsupported structural members and foundations for structures/buildings under construction.

Secure electrical power to buildings in imminent danger of flooding.

**SECTION C – EMERGENCY EQUIPMENT:**

Ensure emergency generators, water and sump pumps, etc. are operational and fuel tanks are full.

Clean all catch basins, drains, and drainage ditches. Lower the levels of retention ponds. Ensure all sump pumps are operational and connected to emergency power.

**Fire Protection:**

Inspect all fire protection equipment and leave in service. All fire protection equipment should be adequately anchored and protected from flooding and floating debris.

Ensure that electric driven fire pumps and fire alarms are not removed from service when any electricity

is de-energized. When required, back-up diesel driven fire pumps should be considered for reliability.

Ensure all fire water tanks and reservoirs are full.

Verify all fuel tanks are full.

**SECTION D – DISTRICT MANAGEMENT/EMERGENCY TEAM RECOVERY OPERATIONS:**

The District Emergency Organization should be prepared and trained in recovery efforts specific for each location.

The site should be secured and a Command Center should be established to direct the recovery operation.

Damage should be surveyed and, as soon as possible, notification of fire protection impairments should be reported to the local fire department. Damage should be reported to California Schools Risk Management as appropriate.

Professional emergency personnel should survey for safety hazards such as downed electrical wires, leaking gas or flammable liquids, poisonous gasses, etc. Look for undermining and damage to foundations or underground piping, etc. Notify appropriate utility companies of damage as soon as possible. Use care around downed power lines and leaking fuel lines and consider providing barriers or watches.

Designated key personnel and emergency contractors should be called to coordinate and start repairs and salvage. Ensure that all contractors are familiar with District Policy Programs and share responsibility for fire safe conditions at all times.

Begin salvage as soon as possible to prevent further damage. Items to consider include:

* + 1. Relocating property to safe locations to prevent further damage.
    2. Cover building contents with tarps when exposed to rain and weather.
    3. Separate damaged goods from undamaged goods.
    4. Make temporary repairs to prevent further damage.
    5. Fill eroded land areas, especially around building and structure foundations.
    6. Remove standing water in buildings, ground areas, etc.\*\*
    7. Clean and dry equipment with most critical objects receiving priority.\*\*
    8. Consider dehumidification of most areas, especially moisture sensitive equipment.\*\*
    9. Clean roof drains, storm drains, retention ponds, etc. and remove any debris.

\*\*Refer to Emergency Restoration Service professionals

Inspect all electrical equipment including exposed insulators, bus bars, conductors, and motors before reenergizing electrical distribution systems and equipment. Electrical equipment may absorb large amounts of water even if not submerged which may reduce its insulation resistance to dangerously low levels. These operations may require professional electrical contractor services.

Contents of tanks, piping, reservoirs, boilers, process equipment, cooling towers and the like should be tested for contamination before use.

Mechanical equipment should be dried and cleaned and casings inspected. Shafts should be checked for alignment and lubricating systems flushed.

**Fire Protection:**

Repair and return to service as soon as possible all fire protection including sprinklers, water supplies, fire pumps, special extinguishing systems, alarms and supervisory service, etc.

Ensure that all Company Policy Programs, such as Hot Work (cutting & welding) and Smoking etc. are properly supervised and enforced during salvage and repair operations. If automatic protection is impaired, arrangements for special fire watches should be made and notice to the fire department and the insurance company should be made promptly

**Appendix C**

**(Property Specific Mechanical Diagrams)**

**[Insert Site Diagrams Here]**