



STATE OF TENNESSEE

WATER INTRUSION PLAN (WIP)

FOR

Walters State Community College

Approved:

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Tony Miksa, President



Water Intrusion Planning In the Event of Liquid Damage, Groundwater, and Sewer Contamination

A copy of the Water Intrusion Plan is kept on file in the *Walters State Community College (WSCC)* Facilities Management Office located at 500 South Davey Crockett Parkway in Morristown Tennessee, 37813.

All facilities management employees are aware of its location. All employees have been instructed to implement this plan in preparing for a water intrusion incident, and how to respond to a water intrusion event beginning with mitigating the water loss and knowing the process of notification of all parties concerned. A list of emergency phone numbers is located in the back of this Water Intrusion Plan (WIP). The next step is to follow the emergency notification procedures contained in this WIP. After contacts have been made, appropriate action will be taken according to specific guidelines in the Emergency Communication Plan.

PURPOSE:

The Treasury Department, Division of Claims and Risk Management (DCRM) in partnership with *Walters State Community College*, provides a proactive approach to identify potential maintenance and repair problems caused by defective building subsystems such as broken plumbing lines or leaking air conditioning components. Problems found are assigned as high priority and a coordinated response with facilities services is required to minimize disruption of daily operations of the building and to limit damage and other environmental issues such as mold. Successful response to a water intrusion event will reduce the severity and duration of the leak/flood, which will result in speeding up the restoration process of the affected area in the building. Therefore, reducing the overall financial expenses and operational losses associated with a water intrusion event.

Furthermore, the purpose of this WIP is to provide guidance to management and employees when faced with handling a water intrusion event, which jeopardizes *Walters State's* building and contents. The WIP also provides guidance and a planned approach for preparing, preventing, and responding on how to handling such situations for the purpose of minimizing property damage and labilities resulting from a water loss or mold growth condition. Based upon the discovery of a water intrusion event, the facility services team shall respond according to the WIP guidelines to reduce or eliminate the immediate and ensuing property damage caused by water. As the general awareness of water intrusion issues continue to evolve, this document must be updated to maintain adequate response measures annually.



CONTENTS

Chapter

1. Objectives

- a. Roles and Responsibilities
 - College Employees
 - Facilities Management
 - Custodial Services
 - Contractors

Emergency Contacts

- b. General Overview
- 2. Definitions
- 3. Sources of Water Damage
 - a. Causes of Water Damage Loses
 - b. Identify Risk Exposures of Potential Water Damage Losses
 - c. Assessing Risk Exposures of Potential Water Sources
 - d. Freezing Weather Preparation of Buildings
 - e. Roof Inspections
 - f. Valve Identification Plan
 - Drawings/Floor Plans
 - Critical Equipment Areas
 - g. Flood and Surface Water Runoff
 - h. Responding to Water Leaks and Overflows
- 4. Internal Chain of Command
 - a. Executive Director
 - b. Maintenance Supervisor
 - c. Onsite Maintenance Staff
 - d. Training
 - e. Documentation and Record Keeping
 - f. Building Inspection

g. EXTERNAL CHAIN of COMMAND

- 5. WIP Policy/General Guidelines, Procedures and Instruction
 - a. Initial Water Intrusion Response
 - b. Mold Remediation
 - c. Routine Inspection



OBJECTIVES:

A. Roles and responsibilities for key personnel;

• College Employees

College personnel have the following responsibilities:

- Respond to reported water-related incidents involving suspected mold growth, or other safety and health concerns.
- Assist Physical Plant with assessing the extent of moisture intrusion / flooding.
- Respond to complaints from employees and investigate potential cause of physical and/or health concerns.
- Respond to events involving sewage backflows or other Category 2 or Category 3 water intrusions. • Assess conditions for occupancy after water restoration or mold remediation activities. • Communicate with building occupants, Physical Plant, and Campus Planning and Design. • Follow Standard Operating Procedure for Mold Remediation if applicable.

• Facilities Management (Maintenance Staff)

Maintenance Staff employees have the following responsibilities:

- Provide trained professional tradespersons for response to building floods.
- Assist in the evaluation and repair of damage to building materials and furnishings, and post event return to normal operating condition.
- Coordinate various entities response (EH&S, Custodial Employees, Campus Planning and Design, contractors, etc.) to water intrusion and flooding.
- Provide routine maintenance on critical building systems to ensure appropriate indoor conditions and to help prevent water infiltration and floods. This may include clearing indoor plumbing and drainage systems, window repairs, roof and gutter inspections and repairs.
- Ensure proper Personal Protective Equipment to employees responding to water and/or mold conditions. Follow Standard Operating Procedure for Mold Remediation if applicable.
- Custodial employees have the following responsibilities:
 - Provide prompt clean-up to various emergencies, including floods and other water intrusion events using approved methods and personal protective equipment.
- Contractor

Mold Remediation Contractors have the following responsibilities:

- Designate a project leader, representing the contractor, to work with Physical Plant and/or Campus Planning and Design during the entire project.
- Notify contracting department of situations that may require deviation from the original action plan.
- Record and document all activities and services performed in response to the problem.
- Complete the project in a manner which complies with all government regulations



and University procedures.

• Follow Standard Operating Procedure for Mold Remediation if applicable.

Emergency notification call list;

- o 1. Casey R. Smith: Executive Director of Facilities Management 423-312-9248
- o 2. David King: Supervisor of Energy Management/HVAC 423-312-2358
- o 3. Jonathan Sweeten: Supervisor of Maintenance/Renovations 423-721-2807

General Overview

- B. Prepare, prevent, and respond to moisture/water or mold growth conditions;
 - Monitor, plan and replace aging pipes throughout all Campus
 - Utilize School Dude (work order system) to document issues and corrective measures
 - Assign work orders to the correct personal to assess.
- C. Detect water losses and mold growth early to minimize property damage and liability claims; and
 O Continue to monitor air quality and mold growth.
- D. Outline procedures for responding to a moister/water or mold growth condition.
 - Administration, Faculty and Staff will report all issues through our School Dude system. Once the workorder has been created, Facilities Management staff will assign to the proper location to ensure repairs are handled in a timely manner.



DEFINITIONS:

- A. Flood—Water released in intrusive events that result in the presence of water in unwanted locations.
- B. Clean Water—Water that originates from a source that does not pose substantial harm to humans such as broken water supply lines, tub or sink outflows, melting ice/snow, and rain storm water.
- C. Gray Water—Water that contains a significant level of contamination and has the potential to cause discomfort or sickness is consumed and/or exposed to humans. Gray water carries micro-organisms and nutrients for micro-organisms and may contain chemicals (i.e. glycol), bio-contaminants (i.e. fungal, bacterial, viral, algae) and other forms of contamination.
- D. Black Water—Water that contains pathogenic agents and is unsanitary such as sewage, floodingcontaining silt and organic matter, water-contaminated with pesticides, heavy metals, or toxic organic substances.
- E. Mold—any of various fungi that can cause disintegration of organic matter.
- F. Mildew—A superficial coating of discoloration of organic material, caused by fungi, especially under damp conditions.
- G. Water Intrusion Shall be defined as any water-based liquid that is released in such a manner that it has absorbed into any building components. The components may include carpet, wood, drywall wall, ceiling tiles, or any porous materials that absorb and hold moisture. The water-based liquids shall include but is not limited to potable water, domestic hot water, reheat water, steam, steam condensation, sewage and rainwater. Liquid substances that may be classified as biological hazard shall be treated as a hazardous waste.
- H. Category 1 Water that originates from clean source that poses the lowest health risk to building occupants and clean-up crews. Water in Category 1 may include:
 - Broken water supply lines
 - Tub or sink overflows
 - Melting ice/snow
 - Rain water
- I. Category 2 Water that contains a significant degree of contamination due to its source, from microbial growth, or from contamination after the initial release. Category 2 water presents a higher risk of infection to people who come into direct contact with the contaminated area. Water in Category 2 may include:
 - Storm drain backups



- Treated cooling water
- Fire suppression systems

Category 1 water left for more than 24-48 hours will have increased microbial growth that will lower the water quality to Category 2.

- J. Category 3 Water that is highly contaminated and will likely contain infectious viruses, bacteria, and parasites. Category 3 water has the highest risk for causing disease or infection from direct or indirect contact. Water in category 3 may include:
 - Sewage
 - Flooding containing silt and organic matter
 - Water contaminated with pesticides, heavy metals, or toxic organic substances



Sources of Water Damage:

This WIP has identified two major sources of water damage for buildings based upon the State of Tennessee's historical property claims data. These include:

- Building systems that supply, remove, or use water (such as HVAC equipment, sprinkler systems, drains, gutters, sewer lines, water lines, etc.); and
- Flood or storm water that enters the building envelope including exterior walls, doors, windows, and roofing systems.

Causes of Water Damage Losses:

This WIP has identified underlining causations of large water damage losses reported to the State of Tennessee:

- Water supply lines burst during cold weather events (freezes);
- Water intrusion due to extreme weather events;
- Roofing systems that were damaged by a storm, or were in poor condition prior to the loss; roof drains within the walls have cracked;
- Blocked drains or overflowing containers;
- Delays in shutting off the water supply valves;
- Failure to properly drain dry pipe sprinkler systems condensate properly prior to and during cold weather; and
- Installation problems with dry pipe systems, which allowed water to accumulate in low points without drainage, or dry pipe was exposed to outside extreme weather due to poor design.
- A/C unit condensation

Identify Risk Exposures of Potential Water Damage Losses:

Effectively addressing water damage exposures should start with identifying highly vulnerable valued property (Building and Contents) and critical operational infrastructure that could be negatively impacted if a water event occurs at a specific location managed by your facility team. As a facility manager you should consider the storing and location of, but not limited to, the following listed property:

- Warehousing of specialized equipment, historical documents, archived documents, fine arts, books, research specimens/projects, food, property owned by a third party, criminal evidence, monies, etc.;
- Data centers, servers, transformers, electrical switch gear(s) or elevator controls, located below



ground level/grade;

- Areas within your buildings that have ornate or expensive finishes, buildings that are historically registered, contents that have high replacement cost value or are consider rare;
- Below grade spaces with important equipment or operational processes that can be destroyed by intruding water;
- Buildings with multi-levels, consider the impact to lower level floors, if an upper level floor had a leak;
- Age of the building and age of the plumbing system (original, replaced, or upgraded). Determine if old supply lines (when replaced or upgraded) have been either disconnected, drained, or capped; and
- Determine if the water source is located above important equipment.

Assessing Risk Exposures of Potential Water Sources:

It is essential for the facility management team to conduct a water damage risk assessment of those areas that have critical infrastructure or high value equipment. This assessment should identify water sources and determine specific steps that may minimize the possibility of a water damage event. Identify water sources such as but not limited to:

- Water lines, drains, restroom facilities, other liquid piping, or temporary liquid containers, directly above high valued or critical infrastructure equipment or area;
- Determine if the high valued or critical infrastructure equipment can be moved to another area; if not,
- Determine if the water supply lines or water sources that can cause damage to the high valued or critical infrastructure equipment can be re-routed or if barriers can be used to redirect water intrusion if it occurs;
- Determine the integrity of water lines, especially those water lines older than 25 years;
- If signs of aging of lines need replaced, a request for rehabbing the lines should be submitted to your capital improvement office;
- If the rehabbing of the water lines costs exceed \$100,000 approval shall be made by the State Building Commission;
- Identify the location of the shut off valves for all areas, ensure the shut off valve are easily accessible, functional, and clearly label for facility services team and emergency responders;
- Share the shut off valve locations with department heads, their staff, and emergency responders;
- Determine if floor penetrations above the area which could provide a path for a water flow can be sealed;
- Identify locations in the building that are unoccupied that have a potential of having a water intrusion incident. Once these locations are identified determine if a water detection device could be used to monitor moisture and send an alarm when levels are high;
- Have spill response kits with common repair tools and plumbing parts readily available for low to medium risk water intrusion events;
- Ensure all staff have been trained on how to notify facility management, Belfor, Sedgwick (State



of Tennessee Property Adjusters), and the Division of Claims and Risk Management.

Freezing Weather Preparation of Buildings

There has been a significant increase in the number of water damage losses related to freezing weather. It is important to identify areas of the building that are difficult to heat or loose heat rapidly. The following tasks are recommended to prevent water damage during this type of weather event (Freeze):

- Evaluate all buildings to find and repair issues such as missing or disturbed insulation (or too little insulation), broken windows, doors or louvers, or damaged or missing caulking or weather stripping;
- Ensure regular servicing of HVAC Equipment using a qualified vendor or (certified HVAC) facility employee before the on-set of cold weather;
- Determine if the building needs additional temporary heating devices in select areas (if it can be done safely);
- Determine if ceiling tiles should temporarily be removed to allow heat to enter susceptible, concealed spaces as entry vestibules with sprinkler heads or piping.
- Ensure dry pipe and low points valves are drained.

Roof Inspections

Routine inspections of roofing should be conducted on an annually scheduled basis. Inspections should focus on roof covering, flashing, metal work, and sealants that together keep water from entering the building. The inspections should include but not limited to:

- Determine if the insulation under the roof cover has deteriorated;
- Determine if there is rot or structural damage to the roofing system;
- Determine if there is any mold growth and damage to the interior surfaces;
- Identify any ponding and water retention that over time degrade the roof cover and may even lead to possible collapse;
- Determine if the roof covering has dry or cracked surfaces, cracked or loose seams, blisters or depressions, broken or missing shingles or bare spots in roof systems with gravel ballasts;
- Remove accumulation of foreign objects or debris on top of roof systems;
- Ensure that roof drainage allows water to properly flow off the building through drains, scuppers, gutters, and downspouts. A blocked drain can allow water to accumulate during heavy rains, which may result in ponding or in severe cases, roof collapse;
- Ensure roof flashing and coping is properly anchoring the edge of the roof cover and is preventing water from gaining access below the roof cover and into the interior of the building;
- During heavy snow events, determine if snow removal is needed for the roofing system, which includes snow drifts around signs and roof mounted equipment.
- Ensure that all gutters and drainage systems are clear of debris



Valve Identification Plan

Ensure the domestic and fire prevention water control valves are known to non-facility personnel. This valve identification plan includes but not limited to:

- Communicating the location and the functional operations of the water valves to all key employees assigned to the water intrusion response plan;
- Train key employees on how to operate the various types of valves;
- Ensure a highly visible identification tag is displayed on the water valve;
- Exercise and lubricate the water valves to assure proper operations annually;
- Label doors providing access to water control valves;
- Provide keys to these areas to designated key personnel working off hours;
- Determine when fire protection control valves can be safely shut off. This will require communicating and working with your local fire department on a plan to ensure fire is not present before shutting down the water supply valve; and
- Share the Valve Identification Plan with the local fire department to assist with their response to any incidents that involve life safety, fire, and fire suppression sprinkler systems.

Flood and Surface Water Runoff

Assess the outside of all buildings to determine if water is entering a building caused from storm water runoff, or known flood exposures, such as rivers, streams or other bodies of water. For buildings that are not near a body of water or in a designated flood zone, there may still be a risk of surface water runoff. The following observations should be conducted to determine if any buildings can be exposed to flood waters and surface water runoff:

- Note any changes in the amount or direction that water is traveling towards, near, or away from all buildings such as changes in adjacent properties. Topography may unintentionally divert water towards a building, or sublevel spaces of the building after heavy rain event could have storm water seeping through floors and walls;
- Determine if any surface water runoff can be managed by proper grading and use of a drain tile system to divert water away from buildings;
- Determine if exterior drains need to be added or repaired, especially around areas such as roof tops, loading docks, outside stairwells, and other low lying locations that water is ponding or allowing water to enter the envelope of the building;
- Ensure the facility team has a preventative maintenance schedule for all water handling equipment such as sump pumps, water heaters, and water reuse and collection systems;



- Ensure generators for emergency power is in place and/or operable through testing each month for critical pumps and dewatering systems;
- For building with no boiler systems, establish replacement schedules for tank type water heaters, which should be replaced approximately every 15 years;
- For buildings with no boiler systems, install safety pans piped to drains under newly installed water heaters or replacements of water heaters;
- For buildings that are near a body of water or in a designated flood zone, make certain the development and implementation of a flood preparation and mitigation plan is in place for the building(s). Go to www.ready.gov/floods for details.

Responding to Water Leaks and Overflows

- Publicize the reporting process, and make sure that leaks get immediate attention: see Appendix A of the WIP report; or *(David King: 423.312.2358)*
- Ensure all employees know how to report all leaks, overflows, or blocked drains to facility's management team to guarantee prompt corrective action and repair *(School Dude work order system)*
- The facility management team shall assign a high priority for all water intrusion incidents to investigate and correct every reported incident;
- Facility management team shall assess the leak and determine if Belfor should be notified immediately to respond for restoration and mitigation efforts; and
- If Belfor responds to a water intrusion incident, facility management team shall notify Sedgwick (Property Adjuster), and the Treasury Department, Division of Claims and Risk Management.



CHAPTER 4

INTERNAL CHAIN OF COMMAND

1. Casey R. Smith: Executive Director of Facilities Management - 423-312-9248

2. David King: Supervisor of Energy Management/HVAC - 423-312-2358

3. Jonathan Sweeten: Supervisor of Maintenance/Renovations - 423-721-2807

Executive Director of Facilities Management

The Executive Director is responsible for general oversight of plan policies and procedures, and periodic revisions as new guidelines or best practices evolve. The Executive Director has authority to allocate resources where needed, and approve necessary corrective actions. The Executive 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.

Executive Director: Casey R. Smith Phone: <u>423-312-9248</u> Email: <u>casey.smith@ws.edu</u>

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: David King Phone: <u>423-312-2358</u> Email: <u>David.king@ws.edu</u>

Maintenance Supervisor: Jonathan Sweeten Phone: <u>423-721-2807</u> Email: Jonathan.sweeten@ws.edu

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.



<u>Training</u>

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 The State of TN 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. Walters State Community College currently conducts the following inspections:

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

EXTERNAL CHAIN OF COMMAND

- 1. WSCC Campus Police Department 423-585-6752
- 2. Hamblen County Fire Chief 423-585-4651
- 3. Hamblen County Emergency Services 911



Water Intrusion Plan—Policy

PRESIDENT of Walters State Community College

Name: Dr. Tony Miksa – 423-585-6772

EXECUTIVE DIRECTOR of Facilities Management

Name: Casey R. Smith - 423-312-9248

SUPERVISOR of Energy Management/HVAC

Name: David King - 423-312-2358

Initial Water Intrusion Response

- Initial Water Intrusion Response
 - Any member of the college community who discovers a water intrusion problem or potential water problem, resulting from weather conditions or facilities damage, should follow these procedures:
 - Stay out of the area. Do not enter until electrical power has been turned off. There is an extreme danger of electrical shock if the water has contacted any electrical devices.
 - Report the leak to Facilities Services at (423) 585-6907 during normal working hours. After business hours, and on weekends and holidays, dial (4230 312-2358. You may also call the WSCC Campus Police Department to report emergency situations by calling 911 or (423) 585-6752. Describe the nature of the problem.
 - Facilities Services or WSCC PD Dispatch will ensure that proper response personnel are notified.
 - If feasible, prevent entry into the flooded area by unauthorized personnel.
 - Upon inspection, WSCC Campus PD, EH&S, and Facilities Management may recommend further occupant evacuation
 - Facilities Management will respond to the location, isolate, and stop leak.
 - Environmental Health & Safety (EH&S) will respond by evaluating/monitoring the extent of the water intrusion, or potential mold growth event, and make recommendations for a safe and appropriate course of action, such as containment and remediation instructions. They may also conduct pre and post water, air,



surface, or bulk sampling to determine the effectiveness of the remediation measures.

- See Appendix-A "EH&S Water Intrusion Procedures" for full EH&S water intrusion response guidelines.
- EH&S and Facilities Management will determine if WSCC staff can effectively remove the water and dry the area or if an outside remediation contractor needs to be employed for this service. If determined that WSCC employees can effectively remove and dry the area, the following general procedures apply (see EH&S drying and remediation criteria below for specific protocol based upon building material) :
 - Plastic sheeting and cardboard shall be installed to protect floor coverings and adjacent areas from water that may be transferred from traffic in and out of the impacted zone.
 - All wet materials from the area shall be dried or removed in accordance with EH&S recommendations.
 - Building materials shall not be disturbed without prior authorization from WSCC or an EH&S representative (approved CAC or CDPH Lead Inspector/ Assessor) that can validate the presence of hazardous materials (i.e. asbestos and/or lead).
 - Water from the damaged surfaces should be removed via the use of wet vacuums and floor dryers.
 - After the majority of water has been removed, increase the room temperature and use commercial dehumidifiers, floor fans, or exhaust fans to aid in drying in the area, in accordance with EH&S recommendations. Use drying methods in conjunction with proper containment with consideration for the direction of airflow (from "clean" to "dirty", not "dirty" to "clean").
 - After drying is complete, use appropriate detergent or biocide in accordance to the EPA label to thoroughly clean and sanitize impacted materials, in accordance with EH&S recommendations.
 - If building materials other than carpet have become wet, or if visible mold is observed, contact EH&S for further evaluation and moisture measurements.
 - EH&S will provide a final evaluation of the area to ensure that it is safe to re-occupancy.
 - Contact EH&S at (423) 585-6907 for disposal of any impacted building materials and plastic sheeting and cardboard or other materials used during remediation.
 - Move furniture back into restored area only after all remediation has been completed and EH&S has cleared the space for re-occupancy.
- If a power outage occurs in concurrence with the water intrusion, the following steps should be taken:
 - Turn off all light switches The voltage may fluctuate and damage any lights that are on.



Mold Remediation Procedures

- Mold removal requires a strategy to deal with the cause(s) of moisture and the mold contaminants. UCR follows the Occupational Safety and Health Administration (OSHAs) guidelines for Preventing Mold-Related Problems in the Indoor Workplace.
- The WSCC Facilities Management Office provides technical assistance in the evaluation and mitigation of mold. Below is the EH&S campus mold abatement strategy developed to assist departments in determining abatement priorities and scope; supervising mold abatement operations; monitoring environmental and occupational mold levels before, during and after abatement; collecting and disposing of waste; and complying with applicable regulations.

Below are the steps to take during mold remediation operations:

1. Find and control the moisture source

- Control the moisture source. This is essential for stopping mold growth. Common sources of moisture contributing to mold growth include but are not limited to:
 - o Flooding
 - o Leaking plumbing fixtures, pipes, or appliances
 - o Roof leaks
 - Water intrusion from outdoor irrigation
 - Unvented combustion appliances
 - High humidity
 - Condensation
 - Water collection dishes, such as refrigerator drip pans

Wear personal protective equipment in line with EH&S recommendations and restrict access to the affected area if you know or suspect the water source is contaminated with sewage or chemical or biological pollutants.

- **Important:** If flooding occurs in a lab or involves gray or black water (overflow from machines, pumps, aquariums, toilet bowls, etc.), call WSCC Campus PD at (423) 585-6752. The Campus Police will dispatch an Environment, Health & Safety (EH&S) professional.
- EH&S must give clearance before Facilities Management personnel can work in the area.

2. Clean and dry water damage promptly

- Clean and dry water damaged materials within 48 hours to prevent mold growth. Maintain humidity below 60%.
 - Keep HVAC drip pans clean and flowing.
 - Do not use fans before determining that the water source is clean or sanitary.
 - Be alert for mold growth if materials have been wet for more than 48 hours. Mold growth



may have occurred — but not always.

- If you encounter or suspect mold growth during cleaning and drying activities, follow steps 3 through 9, below.
- 3. Take precautions while investigating
- Ensure personnel responding to work orders that may involve mold formation are trained to work safely.
- Take these safety precautions while investigating and evaluating mold and moisture problems:
 - Consider using an N-95 filtering face piece, gloves, and eye protection.
 - \circ Do not touch mold or moldy items with bare hands.
 - Avoid mold spores in your eyes.
 - Avoid inhaling mold or mold spores.
- 4. Inform building occupants.

When indoor mold investigation or abatement work affects building occupants, address their concerns by doing the following:

- Emphasize the health and safety of building occupants is a top priority.
- Demonstrate that the occupants' concerns are understood and taken seriously.
- Present clearly the current status of the investigation or remediation efforts.
- Identify a person whom building occupants can contact directly to discuss questions and comments about the remediation activities.
- Consult with EH&S prior to remediation activities to define the areas of removal and provide oversight for the project.
- Develop a project time line and communicate this with building representatives prior to the remediation and construction project. Provide contact numbers if occupants have questions about the project.

Routine Inspections

The approach outlined below utilizes a number of processes and measures, including thermal imaging and moisture meters –

- 1. All TBR-owned buildings will be visually inspected, annually, for indications of water leaks and/or water intrusions. When determined necessary, questionable locations will be further inspected using thermal imaging and moisture meters. (Note: thermal imaging and moisture readings will detect only the visible surface and will not provide analysis of drywall behind cabinets and other wall-mounted items.)
- 2. Specific cold spots, as indicated by thermal imaging, will be tested for moisture content to determine if levels are of concern. Points / areas that are found to have higher than acceptable levels of moisture content will be further inspected by use of a borescope and/or removal of material, to determine source of moisture and extent of damage. Environmental sampling and/or



other tests may be performed, as deemed necessary.

- 3. Ductwork connections and devices at air handlers, bathroom exhausts and room diffusers will also be visually checked for potential leaks and/or moisture problems.
- 4. All angle stops and drains in kitchen, bathrooms, breakrooms, and labs will be checked.
- 5. Condensate drains from air handlers will be visually inspected.
- 6. Work Orders will be generated via School Dude for all corrective action needs, and will then be assigned to appropriate Supervisor.
- 7. Demolition / abatement of water damaged and/or mold contaminated materials will be accomplished by in-house maintenance personnel OR mold licensed contractor, as determined appropriate for each problem / location.
- 8. Reconstruction of facility will be accomplished by in-house maintenance personnel OR outsourced contractor, as determined by Facilities.
- 9. Facilities shall be responsible for acquiring reconstruction contractor, if needed, and shall oversee all work performed by this contractor, up to and including returning the facility to service.

Guidelines for Water-Damage Cleanup (Category 1)

This Appendix accompanies the Methods Section of the Standard Operating Procedure. These guidelines are ONLY for response to water intrusions that can be verified as originating from Category 1 (clean) water sources*.

Water Damaged Material Recommended Action(s)

- Books & Papers
 - For non-valuable items, discard books and papers. •
 - Photocopy valuable / important items and discard originals. •
 - Freeze (in frost-free freezer or meat locker) or freeze-dry.
- Carpet & Backing (dry within 24-48 hours)
 - Remove water and water extraction vacuum. •
 - o Reduce ambient humidity with dehumidifiers. •
 - Accelerate drying process with fans. •
 - Ensure the subfloor (under the carpet) is clean and dry.
- Ceiling Tiles
 - Discard and replace.
- Cellulose Insulation
 - Discard and replace.
- Concrete or cinder block surfaces
 - Remove water with water extraction vacuum. •
 - Accelerate drying process with dehumidifiers, fans, and/or heaters.
- Fiberglass insulation
 - Discard and replace.
- Hard surface, non-porous flooring2 (e.g., linoleum, ceramic tile, vinyl)
 - Vacuum or damp wipe with water and mild detergent and allow to dry. Scrub if necessary.
 - If suspected to be in need of attention, check to make sure subflooring is dry; dry subflooring if necessary.
- Non-porous, hard surfaces (plastics, metals) •



- Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary.
- Upholstered furniture
 - \circ Remove water with water extraction vacuum. •
 - Accelerate drying process with dehumidifiers, fans, and/or heaters. •
 - These may be difficult to completely dry within 48 hours. If the piece is valuable, you may wish to consult a restoration / water damage professional that specializes in furniture.
- Wallboard (drywall and gypsum board)
 - May be dried in place if small in area, there is no obvious swelling, and seams are intact. If not, remove, discard, and replace. •
 - Ventilate wall cavity, if possible and safe to do so. Do not direct fans toward contaminated (i.e., asbestos, mold, etc.) building materials.
- Window drapes
 - Follow laundering or cleaning instructions recommended by the manufacturer.
- Wood surfaces
 - Remove moisture immediately and use dehumidifiers, gentle heat, and fans for drying (Use caution when applying heat to hardwood floors). •
 - Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry. •
 - Wet paneling should be pried away from the wall for drying.

* If mold growth has occurred, refer to the Standard Operating Procedure for Mold Remediation. If you know or suspect that the water source is contaminated with sewage, chemical, or biological pollutants, consult Facilities Management at 423-585-6907.

*If a particular item(s) has high monetary or sentimental value, you may wish to consult a restoration/water damage specialist.

*The subfloor under the carpet or other flooring material must also be cleaned and dried. See the appropriate section of this table for recommended actions depending on the composition of the subfloor.