CALIFORNIA SCHOOLS
RISK MANAGEMENT

SAFETY MATTERS
RISK MANAGEMENT NEWSLETTER

WATER INTRUSION

OBJECTIVE To understand the risks and cost of water intrusion and know how to prepare to eliminate or mitigate the losses from water intrusion.

Flooding can occur due to heavy rain and severe storms, including those in coastal areas that result in storm surges, rapid melting of heavy snow, tsunamis, hurricanes, tropical cyclones, and even dam failure. Flash floods are a specific type of flooding that are dangerous, sudden, and violent—developing in as little as a few minutes—and can even occur in areas where there is no rainfall.

The National Weather Service (NWS) issues a variety of information statements related to flood events, including the following: Flash Flood Warnings, Flood Warnings, and Flood Advisories, which the public is encouraged to "take action" upon receipt; and Flash Flood Watches and Flood Watches, which the public is encouraged to "be prepared" upon receipt. Flash Flood Warnings are issued by NWS via the Wireless Emergency Alert system.

If not addressed within the first 48 hours, water and moisture that finds its way through roofs, windows, doors, joints, and foundations can lead to fungal growth and adverse health effects by compromised indoor air quality. Whether the source is internal (plumbing, HVAC) or external (rain, flash flooding), identifying the source and mitigating the effects is critical.

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TYPES OF WATER INTRUSION

Surface Water Intrusion:

- Caused by heavy rain, flooding, or snowmelt. It can enter through doors, windows, or cracks in the foundation.
- Potential sources include poor drainage, blocked gutters, and lack of proper waterproofing.

Plumbing Failures:

- Burst pipes, broken plumbing fixtures, or faulty water heaters can introduce water into the building. Leaks often go unnoticed until significant damage has already occurred.
- Common entry points include walls, ceilings, and under floors.

Roof Leaks:

- Roofs can develop leaks from age, storm damage, or poor installation, allowing water to infiltrate through ceilings, walls, and insulation.
- Roof vents, flashing, and poorly sealed areas are typical weak spots.

Foundation and Basement Intrusion:

- Water can seep into basements or crawl spaces from external ground moisture, foundation cracks, or insufficient grading around the building's exterior.

PREVENTION

At a minimum, a water intrusion program should include the following:

- Assignment of responsibilities to manage the water intrusion program.
- Staff Training on:
  - Identifying water damage
  - Inspection and communication requirements
  - Remediation procedures
  - Personal protective equipment (PPE)
- Documentation:
  - Monthly building inspection checklists
  - Maintenance inspection
  - Incident report log
  - Complaint response documentation
- Investigating suspected moisture problems
- Response to water intrusion
- Remediation of water intrusion
- Mold remediation process
- Remedial methods and disposal

EXTERIOR INSPECTION

Monthly exterior inspections should include:

- Cleaning out roof drains and gutters
- Maintain proper sealants on roof flashings and penetrations
- Check for evidence of ponding on the roof (after a storm)
- Ensure proper drainage exists around your building—water sheds away from the structure
- Keep weep holes free of debris and working properly
- Install/repair gaskets or sweeps on doors
- Ensure weather stripping is in good repair (no cracks or separation)
- Check that doors and windows close properly

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INTERIOR INSPECTION

Include these in your interior inspections:

- Look for signs of water staining (ceiling/walls)
- Watch for condensation and wet spots for roof leaks
- Ensure proper drainage of HVAC equipment
- Maintain low indoor humidity (below 60% relative humidity
- Are there musty odors present
- Do not delay in repairing plumbing leaks or having the HVAC system inspected

Unless the water damage occurs from a catastrophic event, the source may not be as obvious or easy to locate. By taking preventative measures and developing a plan for responding to moisture intrusion, you can avoid the potential for expensive mold remediation, impact to school operations, and workers' compensation claims.

REMEDIATION CONSIDERATIONS

1. Immediate Actions:
   - Identify the Source and Shut Off Water Supply: Locate and assess the cause of water intrusion. Ensure that any external water entry points are sealed temporarily to prevent further ingress.
   - Remove Water Quickly: Use pumps, wet vacuums, or mops to remove standing water. The quicker the water is removed, the less damage occurs.
2. Dry Out the Area:
   - Ventilation: Open windows and use fans or dehumidifiers to help dry out affected areas. Moisture removal should begin as soon as possible to prevent mold and mildew growth.
3. Sanitization and Disinfection:
   a. Water intrusion often carries dirt, debris, and contaminants. Thorough cleaning and disinfection should be done to prevent long-term health hazards like mold and bacteria growth.
4. Monitor for Fungal Growth:
   - Fungal growth can begin to grow within 24-48 hours of water intrusion. If the affected area is large, consider engaging a professional remediation team.

For a Water Intrusion Sample Plan, please go to csjpa.org under Forms and Resources.

RESOURCES

- *__RESOURCES ON PREPARING FOR FLOODS AT EDUCATION AGENCIES__*
- *__PREPARING FOR FLOODS AT INSTITUTIONS OF HIGHER EDUCATION FACT SHEET__*
- *__MOLD AND WATER DAMAGE__*
- *__WATER INTRUSION AND FLOOD CONTROL PLAN (DOWNLOAD)__*
- *__FEMA APP__*

This California Schools JPA fact sheet is not intended to be exhaustive. The discussion and best practices suggested herein should not be regarded as legal advice. Readers should pursue legal counsel or contact their insurance providers to gain more exhaustive advice.

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SIGN-IN SHEET

WATER INTRUSION

Facilitator: _____   Facilitator's Signature: _____

Date: _____ Organization: _____ Department: _____

Participants:

Name: _____   Signature: _____

Name: _____   Signature: _____

Name: _____   Signature: _____

Name: _____   Signature: _____

Name: _____   Signature: _____

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