



Avoiding Groundwater Damage to Homes

■ Remedies for Homeowners

Groundwater flooding can cause many problems for homeowners. Structural damage, sewer system back-ups, and damaged appliances are three of the most distressing consequences. Fortunately, there are some remedies. They vary in scope, expense, and results, just as homeowners vary in their expectations and resources.

■ Consider Your Resources

Sound advice should be your first priority when groundwater flooding is a problem. Expertise can come from a variety of sources. Local resources include your local emergency government office, building inspectors, insurance agents (if you have appropriate insurance), county extension agents, and the Home Builders Association. All have access to technical assistance, publications, and possible sources of financial aid.

Financial assistance may be available through your local emergency government office. This may also include temporary housing and crisis counseling.

- Grants and low-interest loans may be available in cases of regional disasters.
- Check with your insurance agent to determine whether your homeowner's insurance covers any of the damages. Groundwater, surface water, and floodwater damages usually are not covered by homeowner's insurance. Your agent may have a rider available for groundwater flooding. Homes located in floodplains subject to surface water flooding are eligible for federal flood insurance.

Contractors can help you determine the nature and extent of your damages and what remediation options are appropriate for your situation.

- A waterproofing contractor may be able to correct the problem if you simply need to stop minor nuisance flooding.
- A general contractor may be necessary if you have damages to your home and need more substantial repairs and corrective measures. General contractors can arrange for the services of various specialists.

■ Your Options

The severity and frequency of groundwater flooding will in part dictate the best solution. The following options parallel increasing severity of groundwater flooding:

Raising appliances, furniture and fixtures. In cases where groundwater flooding is a minor nuisance that amounts to little more than wet walls and small streams across the basement floor to a drain, solutions may include:

- Raising or blocking up appliances, furniture, and other items that may be damaged by direct contact with the water for an extended time.
- Installing a false floor over the basement slab. This allows water to drain under the false floor to a drain or sump.
- Installing a surface drainage system around the perimeter of the basement floor. This method channels water from the walls to a drain or sump for removal.

Relieving water pressure against walls and the floor. Some form of drainage is necessary when cracks occur because of water pressure.

- If the basement or foundation does not already have drain tile installed, consider an excavation of the home exterior to allow for waterproofing of the walls and the installation of washed stone (gravel) and drain tile. Drain tile can divert water away from the house if there is a slope, or accommodate a sump pump system as noted below.
- Internal drainage is another option if excavation is not possible or convenient. Washed stone and drain tile are installed around the interior perimeter of the basement footing. This requires subfloor installation and trenching.
- Sump pumps are a necessary part of the internal drainage system unless the interior tile can be connected to exterior tile that will drain away from the house. Similarly, sump pumps may be a necessary part of external drain tile systems if water does not drain away from the house naturally.

Filling the basement. This option can eliminate the groundwater problem, but the trade-off is the loss of a full basement. If the groundwater level in a basement is only one or two feet, one option is to pour a new floor in at a higher level, leaving a crawl space in the basement. The original floor needs to be broken first, so that water pressure can be relieved. Fill dirt is

brought in and the new floor poured. Drainage under the new floor also is recommended. In more severe cases, the basement may have to be completely abandoned.

Rebuilding septic systems and wells. If septic systems and wells have been compromised, the systems should be rebuilt following modern guidelines for high groundwater areas. There may be added expenses related to closing or removing portions of existing systems that have failed.

Raising or relocating the house. This is the most expensive option. It is the best long-term solution when the building integrity is threatened and utilities must be shut off. In some cases, it may be the only reasonable option to avoid property damages and lower property values.

■ **Additional Resources:**

Your county extension office, your local emergency management office, building inspectors, insurance agents (if you have appropriate insurance), the Home Builders Association, and the Federal Emergency Management Agency.

■ **Related publications:**

UW-Extension publications

- "Removing Ground Water From a Basement of an Existing Home," December 1993;
- "Hiring a Contractor After a Natural Disaster," December 1993.

"Repairing Your Flooded Home," the American Red Cross/Federal Emergency Management Agency, 1992.

"Retrofitting Flood-Prone Residential Structures," Federal Emergency Management Agency, 1986.