

Minimizing the Risks of a Dam Failure

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Simple Precautions

Lakeside living is enticing. The recreational opportunities are great while the scenic vistas are enchanting.



However, there is a price to pay for living in paradise. Drownings are a constant problem, while threats of subsidence and flooding are ever-present. In addition, if the

lake is in fact a man-made reservoir (as most are), then the additional risks arise of the dam breaking with substantial downstream flooding.

Liability

The owners of the facility, such as a homeowner or lakefront association, may be liable for the downstream losses. Liability will usually be based on the theory of negligence. The basic question to ask is, "Did the defendant use reasonable care in discovering or averting the risk?" The owner also needs to comply with the minimum standards prescribed by state law and regulatory agencies. If, for example, the state dam safety regulator has been in contact with a dam owner regarding safety deficiencies at the dam, or if the dam owner is otherwise aware of problems at the facility, and fails to take reasonable steps to correct the problem, then the dam owner is vulnerable to liability not only on a negligence theory, but indeed on a willful, wanton, or reckless disregard of the rights of another (intentional tort) theory. This cause of action will hold the dam owner open to punitive damages, which are not covered by insurance. The legal consequences of

ignoring warnings are, therefore, too great to risk.

Even if no liability attaches, other costs to the lakefront owners can be substantial, including loss of the benefits of the reservoirs. Obviously, lakefront property is valued higher than mud bogs or upland property.

Prevention

The owners should have in place a regular plan for scheduled operations, maintenance, safety measures, emergency warning and action plans, and inspection programs. Periodic maintenance and professional inspections are necessary. Detailed records should be maintained to demonstrate the exercise of reasonable care.

Engineers cannot guarantee a structure will never fail; still, owners of relatively small dams can undertake several steps to minimize the risks of failure. These interrelated measures include education of the members, monitoring, and review. Do not be deceived by the apparent small size of a reservoir, because even a small amount of water at high velocity or in a narrow channel can do tremendous damage.

Education consists of instructing employees and association members on the danger signs to look for and safety measures to be implemented. The purpose is not, of course, to convert lay people into expert engineers, but rather to utilize simple visual observations for clues of underlying structural problems, as well as to notice anything unusual. Experts can then be called in to assess perceived problems before the disaster strikes.

Easily observable, perhaps structural-threatening phenomenon include animal burrows and trails; cave-ins; concrete disintegration; cracks and cracking; damage to instruments; dips in the crown of the dam; discoloration: such as rip-rap erosion and bald spots; misalignment;

rodent holes; ruts; sand boils; seepage; settlement or displacement; sinkholes; swirls or funnels around the spillway; trees and bushes growing on the dam; use of the dam by ATVs and other off-road vehicles; and whirlpools. These precautions constitute a continuous process as long as the dam stores water.

Periodic reviewing will allow you to notice gradual changes as well as to stay abreast of any new developments in the area. For example, the standard of care will rise if someone builds a house in the channel below the dam. Warning and evacuation plans should be established for downstream areas at risk if the structure fails. These plans should be periodically reviewed, tested, and updated. Critical personnel and telephone numbers should be kept up to date.

These measures cannot, of course, guarantee the safety of the facility, but they will go a long way in establishing the exercise of reasonable care. In this respect, it is important to document the safety measures undertaken, perhaps by performing regular inspections together with an initialed checklist. Contemporaneous documentation is usually more persuasive than post hoc rationalizations.

A track record of exercising reasonable care is critical in two respects. First, it will significantly improve the dam's performance by identifying and attending to problems while they remain small and relatively inexpensive. Second, it will provide the basis of a solid legal defense, if a failure or other liability ensues.

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