

RISK MANAGEMENT CONTROLS FOR WATER HAZARDS

Ponds, lakes and reservoirs can serve different purposes and are located on various types of properties including religious facilities. A body of water may be present to control storm-water runoff, divert water away from a building or enhance a property's aesthetics. Although not recommended, some facilities allow for recreational use of their lakes and ponds. Whether decorative or functional, artificial or nature-made, these bodies of water present safety and liability concerns.

Land owners with water on their property have an exposure to accidental drownings and may be liable for water-related injuries or the death of children, adults and even pets. This communication provides some risk management techniques to help land owners lessen liability, control their water hazard exposures and help prevent drownings.

Drowning is the number one danger associated with water hazards and remains one of the top ten causes of accidental death for all ages and the number one cause of accidental death for children ages one to four (Centers for Disease Control and Prevention [CDC], 2016). The CDC reiterates that drowning is often preventable. Consider the following safety precautions for controlling water hazards on your property and mitigating the risk of drowning.

Signs

Caution people about the potential dangers of water hazards on your property by posting signs warning them of conditions such as thin ice and rapidly-rising floodwaters. Consider posting signs that prohibit activities such as wading, swimming, fishing, skating and boating. "No Trespassing" signs may help deter people from a water hazard as well. While signage may not prevent someone from entering a body of water on your property, it may help reduce your liability if an incident results.

Fencing

Children, especially toddlers, are often curious about water and may run into a body of water whether supervised or not. Consider installing a fence around the water hazard to obstruct access. Fences may discourage or block people from accessing a body of water; however, there are pros and cons to using fencing as a safety measure. For instance, if someone is in danger, fencing may make it more difficult for emergency responders or other help to get to them. Consideration of fencing should be site-specific. It is also important that landowners not rely on fencing as their only safety precaution.

Barriers

Because fencing is not always feasible or desirable depending on the size, location, or purpose of a body of water, other barrier methods may be more appropriate. For ornamental water features, you may consider vegetative barriers along the perimeter of the water to make it more difficult for someone to slip/fall into the water. For smaller ponds such as those used for pond dipping, an educational activity where children can explore an aquatic environment, you may install a fixed mesh or grill over the top of the water feature as an alternative type of restriction, keeping in mind that a child can drown in shallow water as well. The Royal Society for the Prevention of Accidents (ROSPA) recommends landowners ensure the mesh/grill can support the weight of a child and that it remains above the surface of the water at all times (ROSPA, n.d.).

It is also necessary to consider structures that allow water to flow under an obstruction such as a road, railroad, or trail. Consider installing angled grates over culverts and drains, especially if they are large enough for a child to enter. Storm-water runoff could propel a child into a channel, and angled grates may help force them upward instead of pinning them underwater. Drainage facilities adjacent to ponds may be unsafe as well and merit special attention. Consider integrating pond outlet pipes into an outlet with a smaller opening, or use a sloping trash/safety rack at the pipe entrance.

Grading

Ponds can be deep and have steep drop-offs at the water's edge, making it difficult for someone to get out. Ensure that the water around the full perimeter of the pond is shallow enough for someone to escape. ROSPA recommends grading pond edges that are open for access to a mild slope, or ensuring the area is flat and well defined (2016). In a report from the University of Colorado Denver titled "Safety of Detention and Retention Ponds," staff notes that ponds with a "hard edge" appearance, such as a block or stone vertical wall, should not drop into a pond that has steep side slopes (Jones, Guo, Urbonas, & Pittinger, 2015). A person who falls in would not be able to get out without having to swim. It is important to limit the use of vertical walls. Maintain mild side slopes above and below vertical walls that are in place and use railings where appropriate.

Security

Consider including water hazards in routine safety checks and security rounds paying particular attention during runoff events. Have an emergency plan in place in the event that someone is in danger; and consider training security staff and other personnel on proper water rescue and CPR.

CONCLUSION

Bodies of water attract people. In the winter, ponds and lakes may freeze, creating a tempting spot for skating or ice fishing. In the summer, bodies of water offer an attractive relief to the heat. People may be tempted to jump or dive-in to cool off, go for a swim or engage in other activities. Children may run into a body of water out of curiosity. Any of these scenarios could result in a drowning. By implementing safety precautions such as signage, fencing, other barriers, grading techniques, and security watches, landowners with bodies of water on their property can mitigate the associated exposures and help prevent drownings.

REFERENCES

- Centers for Disease Control and Prevention [CDC]. (2016). 10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States - 2015. Retrieved from https://www.cdc.gov/injury/images/lc-charts/leading_causes_of_injury_deaths_unintentional_injury_2015_1050w760h.gif
- Jones, J. E., Guo, J., Urbonas, B., & Pittinger, R. (2015). Safety of Detention and Retention Ponds. Retrieved February 8, 2018, from [http://www.ucdenver.edu/faculty-staff/jguo/Documents/papers/\(SP6\)SAFETY%20OF%20DETENTION%20AND%20RETENTION%20PONDS.pdf](http://www.ucdenver.edu/faculty-staff/jguo/Documents/papers/(SP6)SAFETY%20OF%20DETENTION%20AND%20RETENTION%20PONDS.pdf)
- Royal Society for the Prevention of Accidents [ROSPA]. (n.d.). Pond Dipping. Retrieved February 8, 2018, from <https://www.rospa.com/leisure-safety/water/advice/pond-dipping/>
- ROSPA. (2016). In-depth Advice: Garden Ponds. Retrieved February 8, 2018, from <https://www.rospa.com/ros paweb/docs/advice-services/leisure-safety/pond-advice.pdf>