

The background of the header section is a photograph of an outdoor swimming pool with lane lines, surrounded by a fence and trees. A large blue diagonal overlay covers the right side of the image.

WINTERIZING

COMMERCIAL AQUATIC VENUES

A Comprehensive Guide

Introduction

The winterization of commercial aquatic venues is a crucial process to safeguard structures and equipment, and prevent potential hazards during the off-season. As the seasons change and outdoor aquatic venues are no longer in use, the implications of closing and the benefits of winterizing facilities must be considered.

Why Winterize?

Closing an aquatic venue for the winter can have numerous advantages. It protects the physical structures and equipment from freezing damage and reduces the risk of unauthorized access, including drowning incidents. However, before deciding to winterize, venue operators should weigh the costs and benefits of keeping the venue operational during the winter months.

Considerations for Winterizing

Operators should consider the following factors when deciding whether to winterize:

- **Maintenance Costs:** Compare the costs of maintaining mechanical systems during winter to the expenses of winterizing and restarting them in the spring.
- **Water Costs:** Evaluate costs associated with draining and refilling the aquatic venue.
- **Chemical Costs:** Assess the costs of restoring water to a healthy state if not drained and refilled.
- **Surface Finish Lifespan:** Consider the impact on surface finishes, especially plaster, as water sits for months without proper chemical maintenance.
- **Safety Cover Costs:** Account for expenses related to purchasing, maintaining, storing, and repairing safety covers.
- **Public Health:** Address concerns related to stagnant water becoming a breeding ground for vector-based diseases, such as West Nile virus or Zika virus.

In some cases, winterizing is not preferred, for example, if the aquatic venue is a focal amenity in high-end complex. Conversely, waterparks often find it more feasible to winterize their facilities.

To Drain or Not to Drain

An initial decision for winterizing is whether or not to completely drain the aquatic venue. In many areas, this choice has minimal impact, but in others, it can be significant. Key considerations include:

- **High-Water Table Areas:** Assess the risk to the aquatic venue shell from groundwater pressure; in high-risk cases, draining may not be advisable.
- **Drought Conditions:** Consider water restrictions and drought conditions that may impact draining and refilling.
- **Labor Costs:** Anticipate additional labor costs for draining stagnant water versus clean, filtered water.
- **Hydrostatic Relief Valve:** Ensure the aquatic venue has a properly functioning hydrostatic relief valve.
- **Involving the Authority Having Jurisdiction:** The AHJ can provide valuable insights into potential impacts on local water treatment plants and other concerns.

Winterizing Steps

When winterizing an aquatic venue, follow these steps:

- Power off all components at the breaker or power supply to prevent damage.
- Note that gaskets and seals may require replacement upon restarting; include this in preventative maintenance plans.
- Drain any filtration system components that can be drained.
- Label and store all plugs and gaskets for safekeeping and ease of recommissioning.
- Ensure proper water balance and remove algae and contaminants before starting the winterizing process.

Perimeter Overflow Systems

Drop the water level below the perimeter overflow system to prevent freeze damage to plumbing, rust on stainless steel gutter systems, and damage to tile at the waterline.

For skimmers:

- Remove VGB compliant covers and plug equalizer lines.
- Suction out remaining water below the skimmer's mouth and plug suction ports.
- Secure skimmer covers to prevent loss.
- Lower the water level below wall return lines.

Pumps

- Remove drain plugs and allow the pump to drain.
- Remove the pump lid and hair lint strainer. Allow the pump to dry before reassembling.

Filters

Sand Filters:

- Remove the drain plug and allow water to drain.

Cartridge Filters:

- Remove and clean the filters, placing them in a dry, safe area.
- Drain water from the filter body.

DE Filters:

- Empty the media and remove the grids.
- Clean the grids and place them in a dry, safe area.
- Drain water from the filter body.

For cartridge filters and DE grids, reinstall them after cleaning and drying.

For vacuum sand filters, drain the filters, if possible, and cover them to prevent debris and animal intrusion. Drain open surge tanks and cover them.

Automated Controllers

- Remove sensors and store them in a warm, dry place.
- Drain any remaining water from the sensor flow cell assembly.
- Unplug the unit from the receptacle after turning off the power.

Water Fill Lines

- Turn off the source water for the fill line.
- Drain the fill line, if possible, to prevent freezing damage.

Metering Pumps

- Remove intake tubes from any remaining chemicals.
- Flush the aquatic venue lines with clean water before removing the intake tubes.
- Run the pump until the tubing is emptied of all water.

Secondary Disinfection Systems

- Remove sensors and store them in a warm, dry place.
- Drain all water from the chamber.

Interactive Water Play Features

- Fully drain and clean the collection tank during the winterizing process.

Drowning Prevention Strategies

Safety is paramount during the winter months, especially when water is left in the pool. Implement the following strategies to prevent unauthorized access and accidental drowning:

Safety Covers

Install safety covers that can support the weight of an adult at any point on the cover.

Site Security

Secure the aquatic venue from all access points and implement monitoring systems to ensure continued security.

Signage

Place signs at all entry points, prohibiting unauthorized access, and warning of the dangers of entering the winterized aquatic venue.

Conclusion

Proper winterization is a critical practice for seasonal aquatic venues. It protects facilities from avoidable structural and mechanical damage, helps prevent vector-borne diseases, and enhances safety by deterring unauthorized access. By following these comprehensive winterizing steps and safety measures, aquatic venues can ensure a smooth transition through the off-season and be ready for a successful reopening in the spring.

If you have questions or would like additional guidance, contact CMAHC's Technical Director **Dewey Case** at Dewey.Case@CMAHC.org or email CMAHC@CMAHC.org.

About CMAHC: [The Council for the Model Aquatic Health Code](https://www.CMAHC.org) (CMAHC) promotes health and safety for public swimming facilities in the United States. As a member-driven organization, CMAHC exists exclusively to advocate, evolve, innovate, promote implementation, organize research in support of, and advise [the Centers for Disease Control and Prevention](https://www.CDC.gov) (CDC) on needed updates to [the Model Aquatic Health Code](https://www.CMAHC.org) (MAHC). Owned by the CDC, the MAHC is the only all-inclusive national pool code that addresses current aquatic issues.