Managing Risks

Associated with

Aquatic Programs & Recreational Waters

A Risk Management Guide to Preventing Municipal Losses Associated with Beaches, Pools, and Aquatic Programs

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Aquatics

According to the Centers for Disease Control (CDC), there were 3,582 fatal unintentional drowning deaths in the United States in 2005. These numbers are down from 4,406 in 1998. Although this shows a decline in drowning rates, drowning remains the second leading cause of unintentional injury related death for children between the ages of 1 and 14. Approximately 30% of all drowning cases were children under the age of 14. For each drowning fatality, there were four emergency responses to nonfatal submersion incidents. That's an average of about 40 incidents per day in the United States.

Most drowning victims under the age of 1 drown in bathtubs, buckets, and toilets. Children ages 1 to 4 tend to drown in swimming pools. Most drowning incidents involving people over the age of 15 occur in natural water settings such as lakes, rivers, and oceans.

The CDC has identified five major risk factors associated with aquatic-related deaths and injuries.

- Lack of barriers and supervision
- Age and recreation in natural waters
- Lack of appropriate choices in recreational boating activities
- Alcohol consumption
- Seizure disorders (drowning is most common cause of unintentional injury death for those with seizure disorders)

These risk factors should be kept in mind when planning and operating aquatic recreational programs.

This guide takes a closer look at pool operations, natural water programs, swimming lessons, and boating activities and provides risk management guidance in these areas.

Operating Swimming Pools

Swimming provides excellent low impact exercise while escaping summer's heat. Public swimming facilities have given many people of all ages the opportunity to participate in this healthful activity. All public swimming pools must be in compliance with 105 CMR 435, which is from Chapter V of the State Sanitary Code and provides minimum health and safety standards. Construction, operation, and maintenance guidelines are outlined in this section of the Massachusetts code of Regulations.

Plans for construction or alteration of swimming pools must be approved by the local Board of Health. 105 CMR 435 sections 1 – 16 pertain to the specifications of pools relative to the many components or features to be constructed.

Required Pool Facilities & Components

- Separate dressing rooms and sanitary facilities for each gender must be adjacent to the pool.
- Showers with hot and cold water. One for every 40 bathers.
- Water basins, adjacent to restrooms. One for every 60 bathers.
- Hose connections for washing down decks, dressing rooms, and bath houses.
- Room to serve as infirmary with cot and blanket.
- Storage space for janitorial supplies and pool equipment.
- Construction materials with acoustic properties that do not hamper lifeguard's voice or ability to hear calls for help.
- Adequate enclosures to prevent animals and unauthorized persons from entering.
- Sanitary drinking water facilities.
- Toilet paper, soap, waste baskets, paper towels on holders in restrooms.
- Mirrors, if installed, should be made of safety glass.
- Sanitary drainage connected to public sewer lines.
- No protrusions into pool except for ladders and hand rails.
- Light colored walls and floors made of concrete, cement, mortar, tile, vinyl siding, fiberglass, or other impervious material.
- Proper circulation and filtration systems in accordance with 105 CMR 435.06-435.10.
- Water depth markers
- Four foot wide walkway, without obstructions, around the entire pool.
- Minimum of one ladder for each 75 foot of diameter.
- Diving boards no higher than one meter.
- Diving platforms over one meter in height should have rails .
- Four inch stripe separating shallow and deep areas.

The above items are not inclusive of every detail required of public swimming facilities. All public swimming pools should be designed by registered architects or registered professional engineers.

Prior to opening, public pools require a permit issued by the local Board of Health. This permit must be posted in a conspicuous location. The permit should include information regarding the method of water treatment, the required number of lifeguards, and the maximum occupancy of swimmers. The permit is subject to the requirements of 105 CMR 435 and any other local regulations adopted by the local Board of Health and is valid for no more than 12 months. Entities must apply for a new permit at least 15 days prior to the expiration of the permit.

Additional Safety Features in Construction

Lights on the floor and walls, as well as recessed into walkways around the pool should be constructed of, or covered with shatterproof glass. Injuries have occurred where serious lacerations resulted from contact with broken glass.

All drains and grate covers must conform to the American National Standard ASME/ANSI 112.19.18 – 2007 suction fittings for use in swimming pools, wading pools, hot tubs, and spas. All public swimming pools with a single main drain, other than an unblockable drain (dimensions 18"x23" or diagonal measurement of 29 inches) MUST be equipped with one or more additional systems or devices designed to prevent suction entrapment.

As outlined in the law these additional systems or devices may include a safety vacuum release system (SVRS), suction limiting vent system, gravity drainage system, automatic pump shut-off, or any other system determined by the CPSC to be equally effective in preventing suction entrapment. Pools not in compliance will be closed until proper covers are installed and, when applicable, an additional suction entrapment prevention device or system is installed. Non-compliance with these federal provisions may result in the imposition of civil or criminal penalties under sections 20 or 21 of the Consumer Product Safety Act. Gravity drain systems are not exempt from this requirement. Disabling suction drains is not an approved suction prevention method. A list of manufacturers of ASME/ANSI A112.19.8-2007 approved drain covers can be found at http://www.poolsafety.gov/draincman.html.

A notice from the Massachusetts Department of Public Health, outlining the federal requirements for suction fittings – known as the *Virginia Graeme Baker Pool & Spa Safety Act*, is included in Appendix B of this guidebook. The Act itself is included in Appendix C.

Lifeguards & Safety Equipment

Local Boards of Health are given the authority to determine if lifeguards are necessary at public swimming and wading pools. MIIA strongly recommends that lifeguards be utilized at all public pools. It is recommended that at least one lifeguard be present for each 25 bathers (based on the maximum occupancy of the pool).

Lifeguards must be at least sixteen years of age and hold the following certificates:

- *Lifeguard Certificate*
  American Red Cross Lifeguard Training Certificate, or Royal Bronze Medallion, or Boy Scouts of America Lifeguard Certificate or National Y.M.C.A. Lifeguard Certificate

- *CPR Certificate*
  American Red Cross CPR Certificate for the Professional Rescuer or American Heart Association CPR Certificate for the Health Care Provider, or National Safety Council CPR Training

- *First Aid Certificate*
  American Red Cross Standard First Aid Certificate, or American Red Cross Community First Aid and Safety Certificate, or National Safety Council First Aid Training, Level 2

All lifeguards while on duty must wear a red or bright orange bathing suit. Any shirt or jacket worn as an outer garment by a lifeguard must also be red or bright orange and have the word GUARD printed in 4" lettering on the back. An orange hat or sun helmet shall be worn by all lifeguards out-of-doors while on duty.

Whistles and bullhorns, or other voice amplification instruments must be provided to the lifeguards by the pool operator.

If the pool has a capacity of 75 bathers or greater, lifeguards must be isolated by using an elevated chair. Elevated chairs must be high enough to give lifeguards complete and unobstructed views of persons in their assigned areas.

If no lifeguards are required by the Board of Health, a warning sign must be posted in a conspicuous location and shall state "WARNING-NO LIFEGUARD ON DUTY" in easy to read, legible letters which are at least four inches (ten cm) high. Additionally, there shall be signs which are readily visible stating "CHILDREN UNDER AGE 16 SHOULD NOT USE SWIMMING POOL WITHOUT AN ADULT IN ATTENDANCE" and "ADULTS SHOULD NOT SWIM ALONE."

At least one U.S. Coast Guard Ring Buoy, with a ¼ inch polyethelene rope attached, no less in length than 1½ times the width of the pool is required. At those swimming pools that are staffed by lifeguards, there must be one Rescue Tube located at each lifeguard station. A backboard with straps must also be readily available at each swimming pool which is attended by a lifeguard. In addition, all outdoor, inground swimming pools shall be equipped with a rescue hook.

First Aid kits must be available. A toll-free phone to contact emergency personnel (EMS, police, fire) must also be available and in working order.

Pool Supervision

All public pools must be under the management of a competent supervisor. Pools supervisors must:

- Be at least 21 years of age.
- Be knowledgeable in 105 CMR 435 requirements.
- Responsible for all phases of the operation.
- Have successfully completed a course in the safe and effective operation and maintenance of swimming pools as evidenced by certification as a Pool Operator from the YMCA, the National Swimming Pool Foundation, or from any other organization providing equivalent training, subject to the approval of the Massachusetts Department of Public Health.
- Ensure that on-site pool personnel are adequately trained in the safe, sanitary and effective operation of the pool and its equipment.
- Conduct a site visit to the pool at least once a week to ensure the pool is being operated in a safe and sanitary manner.

Training provided by the pool supervisor to pool personnel (lifeguards and/or pool attendants) must include:

- An explanation of the filtration and recirculation system.
- Pool water disinfection and control agents.
- Pool water chemistry and testing.
- Record keeping requirements.
- Water quality chemicals.
- Proper health and safety precautions when handling pool chemicals and equipment.
- Cross connection control.
- First aid and safety equipment.

One trained person must be present at all times when the pool is open.

Sanitation, Water Quality & Clarity

Public swimming pools must be sanitized through the use of approved water sanitation techniques for pools.

Type of Disinfection	pH	Alkalinity (ppm)(mg/l)	Residual Chlorine (ppm)(mg/l)
Chlorine	7.2-7.8	50-150	1.0-3.0 Free 0.0-0.2 Combined
Bromine	7.2-7.8	50-150	2.0-6.0

Other equally effective disinfectants registered with the United States Environmental Protection Agency as an approved disinfectant, may be used as a substitute for chlorine or bromine, subject to the approval of the local Board of Health.

Tests for residual disinfectant must be made four times daily, once during the peak load, or more often if required by the Board of Health.

Tests for hydrogen-ion concentration (pH) must be made simultaneously with the residual disinfectant test, and whenever else the Board of Health considers it necessary.

Tests for alkalinity and calcium hardness must be made weekly and whenever else the Board of Health considers it necessary.

If cyanuric acid is used to stabilize the free available residual chlorine, or if one of the chlorinated isocyanurate compounds is used as the disinfecting chemical, the concentration of cyanuric acid in the water should be at least 30 mg/l, but must not exceed 100 mg/l.

The operator must provide and use a DPD test kit for measuring the concentration of chlorine or bromine and an appropriate test kit for measuring pH, alkalinity, and cyanuric acid levels at each swimming, wading and special purpose pool. The test kit must be maintained in good repair together with an adequate supply of reagents that are no more than one year old.

When electronic monitoring devices are used in conjunction with chlorine or bromine disinfection at a swimming, wading or special purpose pool, the operator must check the disinfectant, pH and alkalinity levels manually at least once every 24 hours.

The following minimum turnover (recirculation) rates are required:

- Swimming pools - once every eight hours.
- Wading pools - once every four hours.
- Special purpose pools - once every ½ hour. Special purpose pools must be drained, cleaned and refilled a minimum of once per every 14 days.

At all times any swimming, wading or special purpose pool is in use, the water must be sufficiently clear to permit a black disc six inches in diameter on a white field, when placed on the bottom of the pool at the deepest point, to be clearly visible from the sidewalks of the pool at all distances up to ten yards measured from a line drawn across the pool through the disc.

Rules

Rules must be posted in a conspicuous area and should include hours of operation.

Required regulations to be enforced by pool operators include:

- No bather shall enter the pool unless he first takes a cleansing shower.
- No bather shall wear a bathing suit that is unclean.
- No person suffering from a fever, cough, cold, inflammation of the eyes, nasal or ear discharges, or any communicable disease shall be allowed the use of the pool.
- No person with sores or other evidence of skin disease, or who is wearing a bandage or medical covering of any kind, shall be allowed the use of the pool.
- No person shall spit in or in any other way contaminate the pool, or its floors, walkways, aisles, or dressing rooms.
- No glass, with the exception of shatterproof light shields, shall be permitted in the pool or on walkways within eight feet of the pool.
- No person shall bring or throw into the pool any object that may in any way carry contamination or endanger the safety of bathers.

Operators may additionally add rules pertaining to running, floatation devices, food and beverages, use of oils and lotions in pools, or other items deemed necessary for the safe and sanitary operation of a pool.

No person with communicable diseases is permitted to work at a public pool.

Rules must be rigidly enforced. No exceptions should be made – ever. Consistency in rules enforcement will certainly aid municipalities in keeping liability limited.

Recreation in Natural Waters

As mentioned earlier, the majority of drowning victims over the age of 15 succumb to natural bodies of water, versus pools and other man-made water sources. Oceans, rivers, lakes, ponds, and other bodies of water can be extremely volatile in nature. Tides, currents, undertows, underwater vegetation, proximity to hazardous recreational activities are among factors to be considered in the determining levels of safety in natural bodies of water.

Here are a few facts about municipal ownership or control of natural waters:
Many municipalities operate beaches, either salt or fresh water, or both. Most municipalities own or control real estate containing large bodies of water. Public access to these bodies of water is typically "open," meaning no barriers, walls, or other separating device is in place to keep people, animals, and vehicles out of the body of water. Most bodies of water under public control that are accessed for recreation are accessed free of charge.

With these in mind let's look at the hazards of these waters and how a municipality can reduce the possibilities of being involved in costly claims and litigation.

Hazard - Rip Tides

A rip or tip-tide is a current of water moving in a seaward direction. It is formed by the movement of the waves as they pound onto the beach in a sideways motion. This displaces and pushes other parts of the water back out to sea. A rip is a dangerous condition because it can swiftly carry objects - including swimmers - out to the deeper part of the ocean.

Hazard - Waves

Ocean waves carry a powerful amount of force that can vary widely depending on the size and type of wave. Swimmers can be pounded by waves and lose wind, consciousness, and sense of orientation. Inexperienced ocean swimmers often underestimate the power behind every wave. Small children and pets on shore, close to the water's edge, can easily be swept up and pulled into the current out to deeper parts of the ocean.

Hazard - Wakes

Like waves, wakes left from aquatic vessels can produce enough force to limit the swimmer's ability to maintain safe swimming.

Hazard - Limited Visibility/Water Clarity

Crashing waves and moving tides pull sand, vegetation, and other miscellaneous debris across the ocean floor, often limiting the visibility of the bottom. Sea foam, the froth created from crashing waves, sea grass, and other vegetation can limit one's perception of the ocean's depth. Jumping and diving off jetties, bridges, boats, and other objects can result in fatal contact with the ocean's floor.

Hazard - Sudden Depth Changes
Natural waters can drop off quickly. Changing tides, sand bars, and other naturally occurring conditions can dramatically increase the risk of being in the water. Unfamiliarity with such conditions can contribute to tragic results.

Hazard - Vessels and Motorized Water Vehicles
Collisions with boats, jet skis, water skiers, and other items under the control of a person or group of persons in the course of recreation or commerce can occur, especially in the warmest months as numbers of users increase significantly. Such collisions typically end in death or serious injury to one or more individuals involved.

Hazard - Sea Grass & Vegetation
Sea grass, among a variety of underwater vegetation, can quickly entangle arms, legs, necks, oars, and even boat engines. Currents, coupled with immobility due to entanglement with vegetation, can overcome individuals – especially those fatigued from struggle or panic – quickly.

Hazard - Animals
Movies of large, man-eating sea creatures have captured the imagination of generations of beachgoers. Although animals of the oceans are neither equipped with innate senses of vengeance upon man, nor do they hunt or crave man for food, they do pose a threat to people swimming and boating in the ocean. Sharks often mistake humans for other sources of food (such as seal) and will bite. One shark bite to a man paddling a surf board (which, from below, resembles a seal swimming at the surface) can severe the surfboard and inflict serious injury to the surfer. Jellyfish, horseshoe crabs, and a host of other creatures can also, either mistakenly or in response to the perceived threat your presence creates, cause debilitating injury to

Hazard - Waterborne Illness
Lakes, rivers, and oceans can become contaminated with germs from sewage, animal waste, water runoff following rainfall, fecal accidents, and germs rinsed off the bottoms of swimmers. It is important to avoid swallowing the water because natural recreational water is not disinfected. Swimming should be avoided after rainfalls or in areas identified as unsafe by local or state health officials. These health officials will be able to provide results of water testing in your area.

Hazard - Holes & Hydraulics
Holes, or hydraulics are formed when water pours over the top of a submerged object, causing the surface water to flow back upstream toward the object. Holes can be particularly dangerous as boaters may become stuck in the recirculating water. In high-volume water, holes dramatically aerate the water, potentially to the point where it may even lose the capacity to carry any water crafts. Some of the most dangerous types of holes are formed by lowhead dams, underwater ledges, and similar types of obstruction. In lowhead dams, the hole has a very symmetrical character, meaning there is no weak point, and the sides of the hydraulic are often blocked by a man-made wall, making it impossible to slip off the side of the hydraulic.

Hazard - Eddies & Eddy Lines
Eddies are formed, like hydraulics, on the downstream face of an obstruction. Unlike hydraulics, eddies swirl on the horizontal surface of the water. Typically, they are calm spots where the downward movement of water is partially or fully arrested. Eddies can have powerful, swirling currents which can capsize boats and from which escape can be very difficult.

Eddy lines are the boundaries between the current flowing downstream and the current flowing back upstream forming the eddy. This change in the direction of the current can result in capsizing.

Hazard - Sweepers & Strainers
Strainers are formed when an object blocks the passage of larger objects but allows the flow of water to continue, much like a food colander. These objects can be very dangerous, because the force of the water will pin an object or body against the strainer and then pile up, pushing it down under water. Strainers are formed by many different objects, like storm grates over tunnels, trees that have fallen into a river, bushes by the side of the river that are flooded during high water, or rebar from broken concrete structures in the water. In an emergency it is often best to try and climb on top of a strainer so as not to be pinned against the object under the water. Swimming aggressively away from the strainer and into the main channel will provide individuals in the water the best opportunity for escape. If the strainer cannot be avoided, swimmers should swim hard toward it and try to get as much of his/her body up and over it as possible.

Sweepers are trees fallen or heavily leaning over the river, still rooted on the shore and not fully submerged. Its trunk and branches may form an obstruction in the river like strainers. Since it is an obstruction from above, it often does not contribute to whitewater features but may create turbulence. In fast water sweepers can pose a serious hazard to paddlers.

Hazard - Potholes & Undercuts
Flowing water, filled with sediment, will eventually erode the hardest rock. Rivers will have smooth depressions carved into their beds called potholes and large rocks with wide tops and narrow bottoms called undercuts. Undercuts pose a hazard if they are located in a section of current that forces the boater under the wider, upper edge into the water and then pinning them underneath. Undercuts can trap debris, adding to the potential for dangerous entrapment events.

Sponsoring Programs Involving Natural Bodies of Water

It is important to note that activities occurring in natural bodies of water are inherently dangerous due to the naturally occurring volatile conditions. Programs involving such bodies of water must involve intense supervision of participants by adequate personnel and constant attention to the conditions of the water. Failure to maintain supervision and attention to water conditions can result in tragedy, leading to serious legal and publicity concerns for municipalities.

Unsponsored Recreation

Recreation activities in natural waters owned by municipalities that are not sponsored or otherwise endorsed by the municipality typically will not result in adverse liability against the city or town. The Risk Management portion of this guide will further discuss municipal defenses for municipalities against claims associated with natural waters.

Instructional Programs

Swimming Lessons

Swimming lessons provided by municipalities continue to be locally popular programs. Students of all ages participate in these programs, which can present a challenge to instructors as maturity and skill levels vary widely. Programs should be designed to address the specific needs of the participants.

Instructors should be a least 18 years old and successfully complete the American Red Cross Water Safety Instructor's course.

It is recommend that any adult given the responsibility of training and physically handling children be subject to a criminal offenders record inquiry (CORI) to ensure that sex offenders and other convicted felons do not have access to minor participants.

Recommend student-to-instructor ratios vary depending on the age and skill levels of the participants.

- A ratio of 8:1 should be established for programs for children between the ages 6 months and 3 years. These programs should require a parent to present and in the water with the children.
- A ratio of 6:1 should be established for programs for children between ages 3 and 5 years.
- A ratio of 6:1 should be established for programs for children ages 6 and up for beginners.
- A ratio of 8:1 should be established for programs for children ages 6 and up for intermediate swimmers.
- A ratio of 10:1 should be established for programs for children ages 6 and up for more advanced swimmers. Note: diving instruction should only be included in lessons for advanced swimmers.
- A ratio of 10:1 or 12:1 should be established for programs designed for teens and adults, depending on the skill level of the participants.

Water Aerobics & Fitness Programs

Water aerobics and fitness programs have gained enormous popularity recently as the benefits of this low-impact water resistance training have improved the fitness of participants of all ages. In addition to the Red Cross Water Safety Instructor certification, instructors should have a Water Aerobics Instructor certificate from the American Sports and Fitness Association (ASFA).

Watercraft Programs – Sailing, Boating, Canoeing, Kayaking
Teaching students of any age how to operate watercraft is an enormous responsibility. Instructors should successfully complete the American Sailing Association Sailing Instructor Qualification Clinic. Those participating in the instructor's course must be at least 18 years of age, have at least 3 years of sailing experience, have a valid CPR/First Aid certificate, and be capable of performing the standards described in the ASA International Log Book.

A U.S. Coast Guard (U.S.C.G.) license is required under the following conditions:

- If the instructor or boat owner receives any compensation.
- If the boat is equipped with auxiliary power.
- If the boat is operated in waters under the jurisdiction of the U.S.C.G.

Fishing and Sea Harvest Programs
All recreational fishing and sea harvest programs must be in compliance with Title 322 code of Massachusetts Regulations. All instructors must be able to demonstrate experience in the type of fishing activities offered. All equipment used must be in accordance with chapter 4 of 322 CMR. Equipment must be inspected not only for compliance but also to ensure proper working order. Safety and rescue equipment such as life jackets, rescue rings and hooks should accompany all fishing trips.

Marine Biology & Education Programs
Marine biology programs must take into account the surrounding environment to ensure participants are not subject to hazardous conditions. Instructors must be qualified marine biologists. In addition to the safety of the participants, attention to the environment should be of paramount concern. Under no circumstances should these programs create pollution or unnatural deleterious effects to the natural ecosystems of which these activities take place.

Groups Requiring Special Attention
Special attention must be given to groups with decreased physical and mental capacity to endure or appreciate the hazards of the activities undertaken. Groups requiring special attention include but are not limited to:

- Senior citizens
- Pre-school age children
- Individuals with physical disabilities or limited mobility
- Individuals with limited mental capacity including mental retardation and illness

Programs designed to provide recreational activities for such groups requires municipalities to employ or contract with professionals qualified and certified, when necessary, to work with such individuals.

Water Sports

Swimming & Diving
Swimming and diving events should be organized in conjunction with groups, leagues, or associations specifically chartered to run or operate these events. Competitions must involve qualified coaches and judges, and should be sponsored by outside organizations.

Personal Watercraft (PWC)
Personal water craft (PWC) are recreational water vehicles that the rider sits or stands on, rather than inside of, as in a boat. These vehicles have an inboard engines driving a pump jet that has a screw-shaped impeller to create thrust for propulsion and steering. They are often referred by the brand names WaveRunner, Jet Ski, or Sea-Doo. In addition to recreational activities, these vehicles are sometimes used by lifeguards. It is imperative to note that these vehicles can reach high speeds and collisions with boats, rocks, and other objects can prove fatal.

Water Skiing & Wakeboarding
Obstacles such as rocks, shallow areas and debris may be concealed underneath the water's surface. Areas in which skiing or wakeboarding will take place should be inspected before the activity begins. Additionally, popular boating lanes should be avoided. It is important to note that no matter how familiar participants, instructors, or supervisors may be with a particular stretch of water, debris can appear at any time.

Hand signals must be established and understood by all individuals involved. For example, thumbs up from the skier/wakeboarder could indicate that the skier is prepared for increased speed. Thumbs down could mean slow down. Each boat should contain a spotter, in addition to the driver, to keep a watchful eye on the skier/wakeboarder. The spotter is responsible for communicating to the driver the conditions of the skier/wakeboarder, particularly if the skier/wakeboarder has let go or crashed.

Boat drivers, and all other participants, should never consume alcohol during these activities. The boat should display and orange flag to warn other nearby boats that someone is in tow. Boat operators should always approach skier/wakeboarders from the right, to keep the skier/wakeboarder in view.

Skiers/wakeboarders that become detached should hold the ski or board up in the water so that the boat operator can easily spot them. These events should tape place away from bouy markers which typically indicate that others may be swimming in the area.

Equipment should be in good condition and all participants should wear bright colored life jackets.

Canoeing, Kayaking, and Sculling

Boating activities involving oars and paddles provide excellent opportunities for exercise and physical development. Team building, communication skills, and group coordination are also benefits of these activities. All participants must wear bright colored life jackets. Care should be taken to ensure that boats and oars do not come into contact with other boats or objects. Solo trips (one person per craft) should always involve more than one craft, to ensure that no participants are alone on the water.

"Extreme" Sports

Extreme sports are any activity on the water that involves high speeds, jumps, or prolonged airborne activity. Water skiing with ramps/jumps, parasailing, whitewater rafting, and in many cases, surfing, are among the sports considered extreme, due to the inherent dangers associated with them. MIIA recommends that members do not sponsor such events as part of public recreation programs.

Risk Management

Community recreation programs have been aquatic activities continuously for decades. The success of these programs is evident as they continue to be utilized as a tool to enhance the developmental process of young people.

Without a doubt, your organization, whether it is a school or community recreation program, has experience in aquatic activities. For many, it is like second nature to plan, fund, and successfully pull off such programs for large numbers of participants. With the information provided in this guide, MIIA aims to sharpen the risk management perspective of its members.

Risk Management in Planning

The first step in organizing any activity is to determine its feasibility. You must ask yourself, "Does this activity provide the necessary enrichment to its participants?" or "Does the activity provide a safe environment for children to develop targeted skills while having fun?"

If the answer is "No," it is time to look at alternative activities.

Activities should be developed that enhance the experiences of participants. Objectives should be clearly established early in the planning stages to ensure that you efficiently and effectively develop programs within your defined mission. Referring to your organization's mission statement can serve as a reminder when determining the feasibility of any activity.

Once it is determined that the activity is feasible and fits in with your mission, it is time to plan the program. Planning is the process of setting goals, developing strategies, and outlining tasks necessary to achieving those goals. In short, planning is a decision-making process. As mentioned above, risk management should play a vital role in decision making, so as to minimize any adverse effects of accidental losses.

Risk management is the process of making and implementing decisions that will minimize the adverse effects of accidental losses.

Losses come in many forms, such as participant injuries, stolen backpacks, and property damage. Reducing the impact of potential losses, although not a primary goal of any recreational activity, should always be a part of the decision making process.

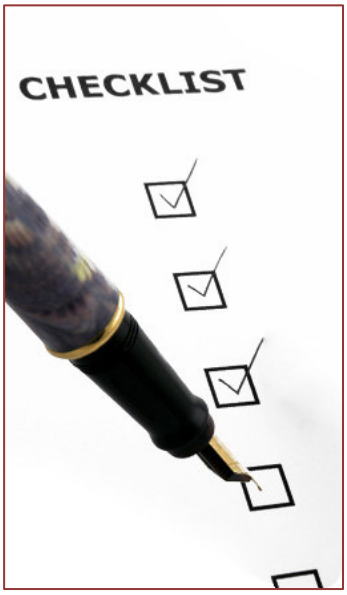
There are five steps in the risk management process:

- Identifying and analyzing exposures
- Determine available risk management techniques
- Selecting best risk management techniques
- Implementing risk management techniques
- Monitoring results

Identifying and analyzing exposures:
What types of loss exposures exist for the programs you are planning? The answer to this question can easily run off into infinity depending on the environment and activities that present themselves throughout the course of any program. Identifying exposures requires those planning events to "look outside of the box" beyond the itinerary alone and determine what occurrences can negatively impact your event.

Determine available risk management techniques:
Once potential hazards are identified, organizations must then determine how to manage the risks posed. Techniques include risk avoidance, risk reduction, risk transfer, and risk retention. Risk avoidance is the decision to eliminate the risk altogether. Risk reduction is taking steps to minimize losses resulting from a particular activity, when avoidance is not possible. Risk transfer is simply placing the financial burden of replacing a loss upon someone else. Risk retention is the conscious decision to keep some of the risk "in-house" through self insurance, deductibles, or any other decision to not transfer the risk.

Selecting the best risk management techniques:
Once you've identified the risks and determined the various risk management techniques, it is time to select which technique or techniques are best for your program. In many cases risk avoidance is clearly not possible, so it is best to determine how to reduce your risk.
Although reduced risk still leaves an opening to risk exposure, you can take steps to transfer some or all of the risk to an insurance carrier or vendor. Whatever risk remains after reduction and contractual transfer is your retention. Ultimately, it is up to you to select the best risk management technique by putting the puzzle pieces together.



Implementing risk management techniques:
Once the technique or techniques to manage the risk are selected, it is time to implement those techniques. Implementation is the actual use of control measures or execution of insurance/vendor contracts. Controls can include administrative controls (procedures) or engineering controls (physical barriers), or most effectively – both. Implementation involves panning and communication. The organization must make arrangements for engineering controls to be put into place. It also has to communicate rules and often train participants to understand the administrative controls that are in effect.

Monitoring results:
Like every activity, it is imperative that the results of your risk management process be measured for effectiveness. Schools measure academic progress through the use of testing. Low test results require schools to adjust educational activities to address those shortcomings. Just as testing is important in measuring academic performance, accidents, incidents, and near misses are important in measuring risk management. By monitoring the results of your risk management decisions you are in a better position to make adjustments to improve your organization's risk management. Sound risk management is not only an operational concern but clearly translates into a financial exercise as the organization's cost of risk is directly impacted by its risk management philosophy.

Risk Transfer
Risk transfer usually involves the use of contracts. For example, when catering a large offsite event an organization may wish to contract with an outside vendor to provide catering services versus performing these functions "in-house." The outside contractor, by contract will carry the risk of injuries to food preparation personnel. (Of course that contractor then transfers its risk by purchasing workers' compensation insurance.) Use of hold harmless, indemnification language, and additional insured endorsements are methods of transferring risk through contracts with outside parties. Purchasing an insurance policy for your event is also a method of risk transfer, as the financial burden is then placed upon the insurance carrier.

Assumption of Risk
Assumption of risk occurs when a participant voluntarily and knowingly assumes the risks associated with an inherently dangerous activity which he or she was participating at the time of injury. The potential plaintiff can either expressly or impliedly relieve the potential defendant of the duty to mitigate or relieve the risk causing the injury from which the cause of action arises. It operates as a complete bar to liability on the theory that upon assumption of the risk, there is no longer a duty of care from the defendant to the plaintiff and without a duty owed by the defendant, there can be no negligence on the defendant's part. The specific risk causing the injury must have been known to, and appreciated by, the plaintiff. The best method of demonstrating that participant knows and appreciates the risk is to have the participant sign an assumption of risk waiver prior to participating in the activity.

Keep in mind, however that assumption of risk does not absolve a defendant of liability for reckless conduct. That is a willful act by the municipality to create or cause additional harm to participants.

MIIA's Risk Management Manual, provided to all members contains a variety of waivers and other forms that can be used as templates for your community.

Hosting Others' Events

Hosting others' events does not necessary imply liability on behalf of the host. As the host, it is your responsibility to ensure to the best of your ability that the facility is free from obvious hazards. When hosting an aquatic event at a public pool or natural body of water under the control of the municipality, it is imperative that a contractual relationship is developed between the municipality and the sponsor of the event. This means that a written agreement must be drafted and signed by all parties to the action.

Important elements of any agreement are clearly defined roles of the parties, indemnification and hold harmless language, and the promise to provide evidence of insurance coverage. In your agreement with an organization using your property or facilities, it is important to ensure that the facility user agrees to indemnify the municipality for any losses or injuries that may be the result of the actions or activities associated with the user. This must be accompanied by a certificate of insurance coverage naming the municipality as additional insured for the event. It is recommended that municipalities ask users for general liability insurance coverage for $1 million per occurrence and $3 million aggregate. Additionally, you want to ensure that the user has statutory workers' compensation insurance for its employees. Hold harmless language ensures that the user will hold the municipality "harmless" for any injury or loss to the user resulting from the use of the facility.

Importance of Training

Most overlook the risk management importance of training. By properly training personnel operating your programs, you can demonstrate that you are addressing your duty of care to ensure the safety of your staff, volunteers, and participants. All staff and volunteers must undergo the necessary training or education. With aquatic programs, temporary employees are common as such programs offer ideal summer employment for college students or others entering the workforce. Keep in mind that summer help must be cognizant of all safety procedures. By training all staff the likelihood of injury to staff or participants is greatly reduced. Please make the time and resources available to ensure proper training is conducted.

Rules & Warnings

Many believe the old adage "rules were meant to be broken." Nothing could be further from the truth. Rules are meant to be communicated and enforced. There should be no flexibility in enforcement of rules. Bending rules can only increase your liability in the event that a loss, associated with the rule infraction, occurs. Firmness, fairness, and consistency are the best policy. Please make sure that rules are properly communicated to participants and that your employees know them and are willing to properly enforce them. Employees that consciously choose to allow rules to be bent or broken should be immediately counseled and all corrective actions be documented.

Incident Response & Emergency Procedures

All recreation programs and facilities should have emergency procedures in place to ensure appropriate response to incidents. Employees must be trained and drilled in these procedures. Familiarity with emergency procedures will provide a greater comfort level to staff, which in

turn will ensure smoother response. It is also imperative that local emergency response teams (police and fire) are familiar with or have a copy of your written plan. Coordination between responding personnel is critical in minimizing the effects of an emergency.

Filing Claims

Claims, or potential claims, can come in many forms. Some are obvious matters that should be reported, and others may cause confusion.

Your general rule should be:

When in doubt, report!

By doing so, you will protect the coverage afforded you, assist us in conducting immediate and effective investigations, help to control potentially troublesome situations, and allow for timely involvement of legal counsel as appropriate.

Report all claims or potential claims immediately, even if all details are not available at the time
What to report:

- Damage or loss to municipal vehicles, buildings, or property
- Damage or loss to vehicles or property of others potentially or allegedly caused by the municipality or its employees
- Injury to municipal employees, agents, or volunteers
- Injury or loss to others potentially or allegedly caused by the municipality or its employees

What to include when reporting:

- Date of loss or incident
- Contact person at town with phone number
- Name, address, and phone number of person or entity involved in incident
- Brief description of incident or allegation
- All correspondence, documents, reports, or notices associated with the incident

Claims can be reported any of three ways:

- Calling 1-800-526-6442
- Faxing a report to 781-376-9907
- Submitting online claim at http://emiia.org/index.php?option=com_chronocontact&Itemid=204

Municipal Defenses

As stated throughout this guide, many of the aquatic activities and programs provided by municipalities come with inherent risks. Massachusetts law provides protections for municipalities and others providing recreational facilities through what is commonly known as the recreational use statute (below)

MGL Chapter 21 Section 17C (a)
Any person having an interest in land including the structures, buildings, and equipment attached to the land, including without limitation, wetlands, rivers, streams, ponds, lakes, and other bodies of water, who lawfully permits the public to use such land for recreational, conservation, scientific, educational, environmental, ecological, research, religious, or charitable purposes without imposing a charge or fee therefore, or who leases such land for said purposes to the commonwealth or any political subdivision thereof or to any nonprofit corporation, trust or association, shall not be liable for personal injuries or property damage sustained by such members of the public, including without limitation a minor, while on said land in the absence of willful, wanton, or reckless conduct by such person.

Therefore, a municipality or other providing facilities, is protected as long as a fee is not charged and that the municipality did not act willfully, wantonly , or recklessly to cause or otherwise contribute to injury to participants. Occasionally, municipalities will charge fees for the use of facilities. Does this automatically eliminate the recreational use defense? The answer is no. As long as a municipality can show that the fees charged are not above and beyond operating costs, the recreational use defense will still hold.

Appendix A

105 CMR 435.00: MINIMUM STANDARDS FOR SWIMMING POOLS
STATE SANITARY CODE: CHAPTER V

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435.01: Definitions

Board of Health means the appropriate and legally designated health authority of the city, town, or other legally constituted governmental unit within the Commonwealth having the usual powers and duties of the board of health of a city or a town, or his or its authorized agent or representative.

Communicable Disease means a disease which may be transmitted through the medium of water.

Department means Department of Public Health.

Operator means any person who
(a) alone or jointly or severally with others owns a public or semi-public swimming pool, wading or special purpose pool regulated by 105 CMR 435.00 or
(b) has care, charge or control of such a pool as agent or lessee of the owner or as an independent contractor.

Person means every individual, partnership, corporation, firm, association or group, including a city, town, county, or other governmental unit.

Public Pool means every swimming, wading or special purpose pool, admission to which may be gained by the general public with or without the payment of a fee.

Residential Pool means a swimming or wading pool established or maintained by an individual for his own or family's use, or for the use of personal guests of his household.

Semi-Public Pool means a swimming, wading or special purpose pool on the premises of, or used in connection with a hotel, motel, trailer court, apartment house, condominium, country club, youth club, school, camp, or similar establishment where the primary purpose of the establishment is not the operation of the swimming facilities, and where admission to the use of the pool is included in the fee or consideration paid or given for the primary use of the

premises. Semi-public pool shall also mean a pool constructed and maintained by groups for the purposes of providing bathing facilities for members and guests only.

Special Purpose Pool means a unit designed for recreational and therapeutic use which is shallow in depth and not meant for swimming or diving. These pools are not drained, cleaned or refilled for each user. It may include, but not be limited to hydrojet circulation, hot water, cold water mineral baths, air induction bubbles, or any combination thereof. Industry terminology for such a pool includes but is not limited to, therapeutic pool, hydrotherapy pool, whirlpool, hot spa, hot tubs, float tanks, etc. This standard excludes residential units and facilities used or under the direct supervision and control of licensed medical personnel.

Swimming Pool means and includes every artificial pool of water having a depth of two feet or more at any point and used for swimming or bathing, located indoors or outdoors, together with the bathhouses, equipment, and appurtenances used in connection with the pool. It does not include any special purpose pool or residential pool as herein defined nor does it include any pool used primarily for baptismal purposes or the healing arts.

Wading Pool means a pool of water in a basin having a maximum depth of less than two feet intended chiefly as a wading place for children. It does not include any residential pool as herein defined.

Water Slide Flume means a recreational device that provides a descending ride into a splashdown pool, which is not designed for swimming or wading, at the base of the slide. Low friction is achieved in all designs by providing a flowing water film.

435.02: Plan Approval

(1) No person shall construct or install a swimming, wading or special purpose pool, or expand, remodel or otherwise make any change which may affect the compliance of an existing swimming, wading or special purpose pool with the requirements of 105 CMR 435.00 until the plans and specifications for the construction or change, under the stamp and signature of a Massachusetts Registered Professional Engineer or Registered Architect, have been approved in writing by the Board of Health. Nothing in 105 CMR 435.00 shall affect the authority of any person acting under appropriate sections of 780 CMR (*The Massachusetts State Building Code)*, 527 CMR 12.00 *(1996 Massachusetts Electrical Code (Amendments))* and 248 CMR (*Uniform State Plumbing Code and the Massachusetts Fuel Gas Code)* or applicable local ordinance or regulation.

(2) All work shall conform to approved plans and specifications. Any revision or change in the approved plans and specifications which may affect the capacity or the health or safety features of the swimming, wading or special purpose pool, shall be submitted to the Board of Health for review. Approval of said change or revision of plans shall be obtained in writing before the work affected by the change is undertaken.

(3) The Board of Health shall be notified when a newly constructed, expanded, or remodeled swimming, wading or special purpose pool is ready for use. Notification shall be given at least one week prior to the completion of the project so that a date can be arranged for a final inspection. Use of such pool shall not commence before a final inspection has been made and written approval to operate has been given by the Board of Health.

435.03: Bathhouse and Sanitary Facilities

(1) The operator shall provide for each sex adequate and separate dressing and sanitary facilities located adjacent to every public swimming pool. Rooms shall be of ample size and well lighted, drained, ventilated, and so planned and constructed that good sanitation can be maintained throughout the building at all times. Bathers shall be so routed that the crossing of street shoes and wet barefoot traffic is kept to a minimum. In general, impervious materials and light colors should be used throughout.

(2) The operator of a public swimming pool shall provide showers and shall furnish hot and cold water. The minimum number of showers shall be one for each 40 bathers based on the maximum bather load, (*see* 105 CMR 435.27).

(3) The operator of a public swimming pool shall provide and shall maintain in a sanitary condition, for each sex, at least one water closet at convenient locations for each 40 bathers. One additional water closet shall be provided for each additional 40 bathers. For males, urinals may be substituted for up to one third of the number of water closets required. Toilets for the use of spectators shall be separated from those provided for bathers and shall be located outside the area used by bathers.

(4) The operator of a public swimming pool shall provide and shall maintain in a sanitary condition washbasins adjacent to all water closets in the proportion of at least one basin for each 60 bathers, based on the maximum bather load.

(5) The operator shall provide hose connections for flushing down the dressing rooms, bathhouse interior, and outside pool decks. It is recommended that hot water be provided at indoor pools.

(6) The operator shall provide a room designated and equipped for the emergency care of sick or injured bathers at a public swimming pool. The location of such a room shall be approved by the Board of Health. Minimum equipment shall include a cot and blanket.

(7) The operator shall provide adequate storage space for janitorial equipment and supplies and instructional equipment.

(8) The operator shall be responsible for maintaining adequate lighting in all parts of the bathhouse, toilets, pool area and pool water by sunlight or artificial lighting, or both, under all conditions of pool use. Arrangements and design of lighting shall allow lifeguards and attendants to see clearly every part of the pool, walkway, spring boards, and other

appurtenances without being blinded by the lights. All lighting, including underwater pool lighting, shall be so installed to prevent glare and maintained as not to create a hazard.

(9) When provided, heating units shall be so installed as to present no hazard to bathers.

(10) All rooms housing indoor swimming pools and all bathhouses dressing rooms, shower rooms, and toilets at both indoor and outdoor pools shall be properly and adequately ventilated.

(11) Attention should be given to acoustical properties of rooms housing indoor swimming pools and bathhouses. The design and materials used in the construction should reduce reverberation of sound, so that a lifeguard's voice or a call for help may be easily heard.

(12) The operator of every swimming pool, wading or special purpose pool shall provide and maintain adequate enclosures to prevent animals and unauthorized persons from entering the pool area.
(a) All outdoor inground swimming, wading or special purpose pools constructed before October 2, 1975 shall be enclosed by a firmly secured fence of at least four feet in height. All gates into the pool area shall be self-latching with latches placed four feet above ground level or otherwise made inaccessible to children up to eight years of age.
(b) All outdoor inground swimming, wading or special purpose pools constructed after October 2, 1975 shall be enclosed by a fence six feet in height and firmly secured at ground level provided that any board or stockade fence or structure shall be at least five feet in height, but if over five feet in height, the fence shall be chain link. Such enclosure, including gates therein, shall not be less than six feet above the ground, and any gate shall be self-latching with latches placed four feet above the ground or otherwise made inaccessible from the outside to children up to eight years of age. Such enclosure shall be constructed of such material and maintained so as not to permit any opening in said enclosure, other than a gate, wider than three inches at any point along the enclosure. (M.G.L. c. 140, § 206)
(c) All indoor swimming pools shall be enclosed by a barrier which shall extend not less than four feet above the ground. Such enclosure shall be constructed of such material and maintained so as not to permit any opening in said enclosure, other than a gate or door, wider than three inches along the enclosure. All gates and doors in the pool enclosure shall be self-closing and self-latching with latches placed at least four feet above the ground.
(d) Access to every public swimming pool by bathers shall be provided only through the bathhouse facilities.

(13) The operator shall provide sanitary drinking water facilities in accordance with 310 CMR 22.00: *Drinking Water*.

(14) The operator of a public swimming pool shall provide the following in association with the required toilets, showers and washbasins:

(a) Toilet paper holders, supplied with paper shall be provided at each toilet.

(b) Suitable receptacles shall be provided for paper towels and other waste materials. Such receptacles in toilet rooms for women shall be covered.

(c) Common towels shall not be permitted.
(d) Soap dispensers providing either liquid or powdered soap shall be located at each washbasin. The dispenser must be shatter-proof with no glass permitted in these units.
(e) If mirrors are provided they shall be unbreakable or of safety glass.

435.04: Sewage Disposal

The operator shall provide a sanitary drainage system connected to the public sewerage system for the disposal of sanitary sewage. If because of non-availability, distance, or ground conditions, connection to a public sewerage system is not practicable, any other sanitary means of disposal of sanitary sewage approved by the Board of Health and in compliance with 310 CMR 15.00 or approved by the Department of Environmental Protection in compliance with 310 CMR 15.00 may be installed.

435.05: Location; Structural Stability, Finish

(1) A swimming, wading or special purpose pool should be located where it can be maintained free from pollution by dust, smoke, soot, surface drainage or other deleterious substances and shall comply with all restrictions of 310 CMR 15.00: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage*.

(2) Construction of every swimming, wading or special purpose pool shall conform with appropriate state and local building, health, plumbing and electrical code requirements.

(3) No projection except ladders and grab rails shall be permitted from any pool wall or floor surface, provided that a fillspout may be constructed under the diving stand, rounded fittings projecting not more than two inches from the wall may be installed. A recessed stairway shall not be considered a projection for the purposes of 310 CMR 12.00. A safety ledge as described in 105 CMR 435.11(4) shall not be considered a projection for the purposes of 105 CMR 435.00.

(4) The finish of the walls and floors of every swimming, special purpose and wading pool shall be of concrete, cement, mortar, tile, paint, vinyl liner, fiberglass or other inert and impervious material, shall be reasonably enduring, shall be moderately smooth and free from cracks, and shall be of light color.

(5) The designing registered architect or registered professional engineer shall be responsible for certifying to the structural stability and safety of the pool.

435.06: Water Circulation and Filtration Systems

(1) All swimming, wading and special purpose pools shall be equipped and operated with a system for recirculation and purification of the pool water. This system shall be capable of maintaining the water quality standards of 105 CMR 435.28 through 435.31. The over-all recirculation and purification system shall be so designed and constructed that the entire volume of the pool can be recirculated and filtered as follows:
(a) swimming pools - once every eight hours,

(b) wading pools - once every four hours,
(c) special purpose pools - once every ½ hour,
(d) water slide flumes - once every hour.

(2) The equipment of the recirculation and purification system shall include:
(a) a filtration system;
(b) recirculation pumps;
(c) hair and lint strainers;
(d) provision for chemical feed;
(e) provision for bactericidal treatment;
(f) filter effluent flowmeter or meters;
(g) balancing or float-control tank or above-rim fill-spout;
(h) test kit(s) will be available to meet the requirements of 105 CMR 435.29 and must be capable of distinguishing free residual chlorine and combined chlorine;
(i) all other equipment necessary to make the particular treatment process complete and efficiently operable.

(3) The maximum permissible design filtration rate for pressure or gravity filters using sand or equivalent media shall be three gallons per minute per square foot of filter surface area. High rate filters shall not exceed 15 gallons per minute per square foot unless otherwise approved by the National Sanitation Foundation. The maximum permissible design filtration rate for all types of diatomaceous earth filters shall be 1.5 gallons per minute per square foot of filter area without continuous body feed and two gallons per minute per square foot with continuous body feed. The maximum permissible design filter rate for cartridge-type filters shall be 0.375 gallons per minute per square foot of filter area. One complete set of cartridges shall be available on the premises at all times to facilitate cleaning. Any filtration system or filtration rate other than those included in 105 CMR 435.00 may only be installed or used with the written approval of the Board of Health.

(4) Suitable automatic equipment shall be provided and so installed as to permit adequate disinfection of all the pool water. Hypochlorinators shall be dependable in operation and equipped with a calibrated controlling device capable of being finely adjusted to the required rates, and shall have a feed-rate capacity of at least three pounds of chlorine per 24 hours per 10,000 gallons of pool capacity for all outdoor pools, and at least one pound of chlorine per 24

hours per 15,000 gallons of pool capacity for all indoor pools. Chlorine gas feeders and containers are prohibited.

(5) Where bromine is used as a disinfectant the equipment must provide for feeding on a continuous basis.

(6) Filters, hair catchers, recirculation pumps, chemical and filter-aid feeders, chlorinators, operating valves, and other equipment shall be identified and easily accessible for operation and maintenance purposes.

(7) Where carbon dioxide (CO_2) is used as a method of pH control, the following shall be provided:

(a) CO_2 shall be injected into the recirculation pipe. The recirculation pipe shall be of sufficient size and length to provide a minimum of five second contact time prior to bather contact.
(b) CO_2 cylinders shall be anchored to prevent damage. Cylinders shall be inaccessible to the general public.
(c) CO_2 cylinders should be stored in a protective enclosure at the exterior of occupied structures. If CO_2 cylinders are located in the interior of occupied structures within an enclosed space of less than 60 square feet, they shall be placed in a ventilated enclosure. A louvered fresh air intake shall be provided near the ceiling. Mechanical exhaust ventilation shall be provided at the rate of one air change every three minutes and take suction from the floor as far as practical from the door and fresh air intake. Exhausted air shall be ducted to the exterior of the building through a continuous pipe of at least 1½ inches in diameter with the point of discharge so located as not to contaminate air inlets to any rooms or structures.

<u>435.07: Construction Materials</u>

(1) All construction materials including piping shall be non-toxic and should be resistant to corrosion and stresses to which they may be subjected.

(2) It is recommended that provisions be made to permit complete dewatering of all piping and equipment.

<u>435.08: Inlets and Outlets</u>

(1) Inlets for fresh or recirculated water in swimming, wading and special purpose pools should be located to produce, so far as possible, uniform circulation of water and the maintenance of uniform chlorine or other approved disinfectant residual throughout the entire pool. Inlets for the recirculation system shall be submerged, individually adjustable, and shall be designed and installed to reduce the escape of chlorine or other disinfectant.

(2) An over the rim fill spout, if used as a fresh water inlet, shall be located under the diving board, adjacent to a ladder or otherwise properly shielded so as not to create a hazard. Its open

end shall have no sharp edges and shall not protrude more than two inches beyond the edge of the pool and shall be at least six inches above the maximum possible water level.

(3) All swimming, wading and special purpose pools shall be constructed in the following manner:
(a) Return inlet(s) and suction outlet(s) from the recirculation system shall be designed so as to not constitute a hazard to the bather. Where skimmers are used, the inlet(s) shall be located so as to help bring floating particles within the range of the skimmers.
(b) A main drain suction outlet(s) shall be provided in the lowest point of the pool floor. At least two main drains shall be provided for every swimming or wading pool more than 30 feet wide. The spacing of the main drain(s) or suction outlet(s) shall not be greater than 20 feet apart across from the deepest section of the pool nor more than 15 feet from the nearest side wall. All outlets shall be covered with suitable protective covers or grates which have been tested and approved by a nationally recognized testing laboratory. The main drain suction outlet(s) and outlet drain cover(s) shall, except skimmers, be installed in a way that they

cannot be removed without the use of tools; the total velocity through grate openings shall not exceed two feet per second; the open area in the grates shall be of such design as to prevent physical entrapment of fingers, toes, *etc*. The system shall provide at least one antivortex main drain outlet. In depths of four feet six inches or less, the anitvortex drain shall not provide a tripping or stubbing hazard to the feet.

(c) If the suction outlet is a single (such as a vacuum cleaner system) or if there are multiple suction outlets which can be isolated by valves, then each suction outlet shall be protected against user entrapment by either an antivortex cover or other means.
(d) A minimum of two suction outlets shall be provided for each pump in the suction outlet system, separated by a minimum of three feet or located on two different planes, *i.e*. one on the bottom and one on the vertical wall or one each on two separate vertical walls. These suction outlets shall be plumbed such that water is drawn through them simultaneously through a common line to the pump.
(e) The spacing of the return inlets shall be not greater than 20 feet on center. In no case shall there be less than two such inlets per 600 square feet, or fraction thereof. The total velocity through the inlets shall not exceed 15 feet per second.

(4) All swimming, wading and special purpose pools with any type of suction outlet cover(s), including those used for main drains, hydrotherapy or automatic cleaning outlets, which are missing, broken, loose, create an obstruction or are secured in such a way that the cover can be removed without the use of tools (excluding skimmers or gutters) shall be immediately closed for use until such repairs have been made to eliminate the hazard.

(5) All special purpose and wading pools shall, by July 1, 1998 install an emergency shut off pump switch, in an accessible location, prominently marked and within plain sight at the special purpose or wading pool.

435.09: Cross Connection

Potable water supplying any public, semi-public, wading or special purpose pool, either directly or to the recirculation system, shall be supplied through an air gap. In addition, no piping arrangement shall exist that will permit sewage, wastewater or any water of unknown or questionable quality to enter the pool or pool piping system.

435.10: Skimming Facilities

(1) All swimming, wading and special purpose pools shall be designed so that approximately 50% of the recirculation rate shall be drawn from the top surface of the pool.

(2) When skimming devices, or deck drains for water-level deck-type swimming and wading pools are not used, an overflow channel shall extend completely around every swimming and wading pool. The channel, channel outlets and piping shall be capable of removing at least 50% of the recirculated water and shall be equipped to carry away sputum and other floating matter in an effective way. The channel shall be so designed as to accomplish the following results:
(a) provide effective skimming action over the entire pool surface;

(b) intercept, in addition to the normal overflow, all splash water to prevent flooding or washing of the walkways around the pool;
(c) prevent, so far as possible, waters that have entered the channel from being washed back into the pool;
(d) provide for easy inspection and cleaning; and
(e) present no accident hazard to bathers.

Outlet openings of gratings in the overflow channel shall be at least twice the area of the outlet piping. Drainage from the channels can be returned to the pool water recirculation system ahead of the filters (ordinarily at the balancing tanks or at pump suction), provided that, unless channels are self cleaning, provisions shall be made for diverting the channel water to waste when cleaning the channel or walkway.
The overflow channel should provide an acceptable hand hold for bathers and should not be less than three inches deep.

(3) In all swimming, wading and special purpose pools where skimming devices are used they shall satisfy the following requirements:
(a) At least one shall be provided for each 500 square feet, or major portion thereof, of pool surface area. When surface skimmers are used in special purpose pools as the sole overflow system, one surface skimmer should be provided for each 100 square feet.
(b) Each shall be automatically adjustable to variations in water level over a range of at least three inches.
(c) Each shall be designed with a weir length which permits a flow of not less than 20 gallons per minute per lineal foot of weir.

(d) Each shall be provided with an easily removable and cleanable basket or screen through which all overflow water must pass to trap solids.
(e) Each shall be equipped with a throttling device for balancing purposes.

(f) Each shall be designed for a flow-through rate of at least 30 gallons per minute. The total design capacity of all skimmers in any pool shall be approximately 50% of the required filter flow of the recirculation system.
(g) Each shall be of substantial, durable, and corrosion resistant material.
The freeboard around any pool in which skimming devices are used shall be no more than six inches, unless a hand hold is provided.

435.11: Pool Slopes and Dimensions

(1) The minimum depth of water in swimming pools to be used for swimming purposes shall be not less than three feet. In any part of the pool less than five feet in depth, slopes in the pool floor shall remain constant and shall not exceed one foot vertical in 12 feet horizontal. Exception may be made by the Board of Health for pools built principally for instruction, or in a recessed area of the main swimming pool where the pool is of any irregular shape, such as the leg of a "T", "L", or "Z".

(2) In special purpose pools the maximum operational water depth shall be four feet measured from the waterline. The maximum depth of any seat or bench shall be two feet measured from the waterline.

(3) Walls of swimming pools shall be vertical or shall have a maximum vertical slope of one foot horizontal to five feet vertical. Where pools are used for competitive swimming the walls shall be vertical for a minimum water depth of three feet six inches. When coved construction is used to join the walls and bottom of any pool the following shall apply:

(a) At depths of from three feet to four feet six inches, the maximum radius of coving shall be 12 inches.
(b) At depths greater than four feet six inches, the radius of coving joining the wall and floor at any point shall be equal to not more than the depth of the pool at that point minus two feet six inches. No ledges or any other abrupt change in the wall slope shall be allowed except for reasonable fillets or coving where the wall joins the pool bottom. Plane surfaces tangent to allowable coving may be used in lieu of curves.

(4) Notwithstanding the provisions of 105 CMR 435.11(3), a safety ledge not more than four inches in width and located about four feet six inches below the pool water surface may be permitted, provided it is sloped slightly toward the center of the pool to prevent dirt accumulation.

435.12: Water Depth Markings

(1) The water depth of every swimming pool shall be plainly marked on the pool deck at the edge of the pool and on the vertical pool walls, at or above the water surface. Where depth markings cannot be placed on the vertical walls above the water level, other means shall be used so that the markings are clearly visible to persons in the pool. Markings shall be in dark colors, a minimum of four inches high, spaced at one-foot depth intervals in the shallow portion of the pool to a depth of five feet, and then at appropriate places of not more than 25 foot intervals around the deep portion of the pool. When non-swimmers use a pool, a polyethylene line with floats shall separate the non-swimmer area from deeper water.

(2) All painted swimming, wading and special purpose pools constructed, or drained after the effective date of these regulations shall have the boundary line between the shallow and deep areas marked with a four-inch stripe of contrasting color on the floor and walls of the pool. Ledges and step edges shall also be marked with a four-inch stripe of contrasting color.

(3) All tiled swimming, wading and special purpose pools constructed or drained after the effective date of these regulations for routine re-grouting or tile work shall have a boundary line between the shallow and deep areas installed with a four inch stripe of contrasting color on the floor and walls of the pool. Ledges and step edges shall also be marked with a four inch stripe of contrasting color.

435.13: Walkways and Decks

(1) Walkways shall be continuous around the pool with a minimum width of four feet of unobstructed clear distance including a curb at the pool edge, if such a curb is used. Walkways of a width of eight feet are desirable. A minimum of three feet walk width shall be provided around any piece of diving equipment. All walks, decks, and terraces shall have a minimum slope of ¼ inch per foot toward adequate drains or points at which the water will have a free unobstructed flow away from the pool to approved points of disposal.

(2) All walkway and deck surfaces shall be furnished with a slip resistant non-abrasive surface.

435.14: Ladders and Steps

(1) A minimum of one ladder shall be provided for each 75 feet of swimming pool perimeter, and not less than two such devices shall be provided at any pool. If step-holes are provided in lieu of ladders, they shall be readily cleanable and sloped slightly, or provided with drain holes, to prevent accumulation of dirt. A suitable handrail extending to the pool deck or curb shall be provided at each side of each ladder or step-holes. Recessed stairsteps may be substituted for ladders or step holes. A suitable handrail shall be provided at one side or in the center of stairsteps.

(2) For each special purpose pool a minimum of one handrail or ladder equivalent shall be provided, or there shall be a deck designed to facilitate safe entry or exit.

435.15: Diving

(1) Diving equipment shall be rigidly constructed and properly anchored with sufficient bracing to insure stability under the heaviest reasonable load. Diving boards shall be of sound construction, free from splinters or dangerous cracks, and shall be capable of supporting the heaviest load under conditions of reasonable use. Diving boards and platforms shall be covered or finished with durable non-slip material.

(2) Diving areas constructed or approved for construction prior to April 1, 1998 shall conform with the requirements of 105 CMR 435.00 in effect at the time of construction and/or approval.

(3) No diving board or platform more than one meter above the pool water level shall be permitted for general public use in any swimming pool. At least 13 feet of free and unobstructed head room shall be provided above diving boards and platforms. This

distance shall be measured from the center of the front end of the board and shall extend horizontally at least eight feet behind, eight feet to each side, and 16 feet ahead of the front of the diving board.

(4) Diving areas approved for competitive diving shall be in compliance with the standards of the Federation Internationale DeNation Ameteur (FINA), U.S. Diving, Inc., or the National College Athletic Association (NCAA).

(5) Platforms and diving equipment which are one meter or higher shall be protected with guard rails. The required guard rails shall extend at least 30 inches above the diving board and extend to the edge of the pool wall. All platform or diving equipment higher than one meter shall have guard rails which extend at least 36 inches above the diving board and extend to the edge of the pool wall.

435.16: Water Source

Water to be used in any swimming, wading or special purpose pool shall be obtained from a source approved by the Board of Health.

435.17: Pool Supervision

(1) All public and semi-public swimming pools when open for use shall be under the management of a supervisor, who shall be responsible for all phases of the pool operation. The pool supervisor may be the property owner, a facility employee or an employee of a contracted pool service. The pool supervisor shall be available to respond to mechanical and maintenance problems, and to detect the potential of such problems before they occur. It is not required that the pool supervisor be on the premises at all times. The pool supervisor shall be:
(a) at least 21 years of age,
(b) knowledgeable of 105 CMR 435.00, and
(c) responsible for all phases of the operation.

(2) Effective January 1, 1999 the pool supervisor of all public and semi-public swimming pools shall have successfully completed a course in the safe and effective operation and maintenance of swimming pools as evidenced by certification as a Pool Operator from the YMCA, the National Swimming Pool Foundation, or from any other organization providing equivalent training, subject to the approval of the Department.

(3) The pool supervisor shall ensure that on-site pool personnel are adequately trained in the safe, sanitary and effective operation of the pool and its equipment. Training may be in

the form of verbal and/or written instruction. The training must include at a minimum the following:
(a) an explanation of the filtration and recirculation system;
(b) pool water disinfection and control agents;
(c) pool water chemistry and testing;
(d) record keeping as required by 105 CMR 435.21(5);
(e) water quality chemicals;
(f) proper health and safety precautions when handling pool chemicals and equipment;
(g) cross connection control; and
(h) first aid and safety equipment

(4) If required by the Board of Health, there shall be at least one trained person on the premises at all times that the pool is open. This individual may be the pool supervisor, a lifeguard, a pool attendant or any other trained person. The board when determining whether there is a need for the trained person, and the minimum training or certification requirements for this person, shall take into account the size and capacity of the pool(s), the average attendance, the complexity of the disinfection equipment, and the facility's history of compliance with the regulations.

(5) The pool supervisor shall conduct a site visit to the pool at least once a week to ensure the pool is being operated in a safe and sanitary manner. The pool supervisor shall record the findings of his/her site visit in the records required to be maintained by 105 CMR 435.21(5).

<u>435.21: Permit Requirements for Swimming, Wading, and Special Purpose Pools: Pool Records</u>

(1) No person shall operate or maintain any swimming, wading or special purpose pool without obtaining a permit from the Board of Health on a form prescribed by the Commissioner of Public Health. The permit shall state the method of water treatment, the number of trained lifeguards required and the maximum number of people allowed in the water at any time (*see* 105 CMR 435.27). The permit shall be subject to the requirements of 105 CMR 435.00 and to any regulations as may be adopted by the Board of Health, provided, however, that said local board of health regulations shall not be applicable to a state owned or operated swimming, wading or special purpose pool. A Board of Health may issue a permit with any desired restrictions for the use of any swimming, wading or special purpose pool which fails to meet the requirements for design or construction if the pool was in use prior to April 30, 1964 and if such failure does not materially impair the safety or sanitary operation of the pool.

(2) The operator shall post the permit in a conspicuous location near the swimming, wading or special purpose pool.

(3) All permits shall expire no more than 12 months following the date of issue, and may be revoked for cause at any time by the Board of Health (*see* 105 CMR 435.42). The Board of Health may issue a permit for less than one year in those instances where there is only seasonal use of the swimming, wading or special purpose pool.

(4) Application for a permit shall be made to the Board of Health at least 15 days before the expiration of a permit, or otherwise at least 15 days before the opening of the swimming, wading or special purpose pool.

(5) The operator shall maintain a current written record of all data pertaining to the operation and condition of the pool and s/he shall keep it available for inspection by the Board of Health at all reasonable times. The record shall include daily attendance, amounts and types of chemicals used daily, results of chemical and bacteriological tests, dates and times of emptying and cleaning the pool and backwashing of filters, the daily number of hours of operation of purification equipment, and any other pertinent information which the Board of Health may require. The records shall be initialed by the person making the required tests.

435.22: Health Regulations; Signs

(1) No person having a communicable disease shall be employed or work at a swimming, wading or special purpose pool.

(2) The following regulations shall be enforced by the operator:
(a) No bather shall enter the pool unless he first takes a cleansing shower.
(b) No bather shall wear a bathing suit that is unclean.
(c) No person suffering from a fever, cough, cold, inflammation of the eyes, nasal or ear discharges, or any communicable disease shall be allowed the use of the pool.
(d) No person with sores or other evidence of skin disease, or who is wearing a bandage or medical covering of any kind, shall be allowed the use of the pool.
(e) No person shall spit in or in any other way contaminate the pool, or its floors, walkways, aisles, or dressing rooms.
(f) No glass, with the exception of shatterproof light shields, shall be permitted in the pool or on walkways within eight feet of the pool.
(g) No person shall bring or throw into the pool any object that may in any way carry contamination or endanger the safety of bathers.

(3) The operator shall cause a sign to be placed at the entrance of the pool enclosure, or on a wall of the dressing room where one is provided, which reads substantially as follows:

"All persons are required to take a cleansing shower bath before entering the pool."
"No person with a communicable disease is allowed to use the pool."
(4) The operator of special purpose pools shall include on the sign required in 105 CMR 435.22(3) the following warnings:

(a) Do not use when alone.
(b) Do not use while under the influence of alcohol, anticoagulants, antihistamines, vasoconstrictors, vasodialators, stimulants, hypnotics, narcotics or tranquilizers.
(c) Elderly persons, pregnant women, and persons suffering from heart disease, diabetes, high or low blood pressure should not use this pool until they consult with their physician.
(d) Do not use the pool when the water temperature is greater than 104°F.
(e) Observe a reasonable time limit (*e.g.*, ten minutes), then shower, cool down, and, if you wish, return for another brief stay. Long exposure may result in nausea, dizziness or fainting.
(f) The use of oils and body lotion by bathers is prohibited.

(5) The operator of special purpose pools shall provide a permanently mounted clock, with a large dial, located as to be easily readable by bathers at the pool.

435.23: Lifeguards

(1) The operator shall provide one or more lifeguards 16 years of age or older if the Board of Health determines that they are necessary for the safe use of the swimming or wading pool. The Board, when determining whether there is a need for one or more lifeguards and the number of on-duty lifeguards to be present at the pool at any one time, shall take into account the size, shape and capacity of the swimming or wading pool. As a guideline, it is suggested that one lifeguard be provided for each 25 bathers. All lifeguards shall hold the following certifications:
(a) a current Red Cross Lifeguard Training Certificate, or Royal Bronze Medallion, or Boy Scouts of America Lifeguard Certificate or National Y.M.C.A. Lifeguard Certificate or an equivalent certification, provided however, that no such alternative certification shall be deemed equivalent unless it shall contain all of the minimum requirements mandated or required by one or more of the foregoing certification programs; and
(b) a current American Red Cross CPR Certificate for the Professional Rescuer or American Heart Association CPR Certificate for the Health Care Provider, or National Safety Council CPR Training; and
(c) a Red Cross Standard First Aid Certificate, or a Red Cross Community First Aid and Safety Certificate (which certification may be evidenced by a notation on the back of any Red Cross Lifeguard Training Certificate), or National Safety Council First Aid Training, Level 2, or an equivalent certification, provided however, that no such alternative certification shall be deemed equivalent unless it shall contain all of the minimum requirements of one of the foregoing certification programs.

(2) If no lifeguards are required by the Board of Health, a warning sign shall be posted in a conspicuous location and shall state "WARNING-NO LIFEGUARD ON DUTY" in easy to read, legible letters which are at least four inches. (ten cm) high. In addition, there shall be signs which are readily visible stating "CHILDREN UNDER AGE 16 SHOULD NOT USE SWIMMING POOL WITHOUT AN ADULT IN ATTENDANCE" and "ADULTS SHOULD NOT SWIM ALONE."

(3) The number of trained lifeguards determined necessary by the Board of Health in accordance with 105 CMR 435.23(1) shall be in constant attendance during bathing hours and no bather shall be admitted to the swimming pool unless this number of lifeguards is present.

(4) All lifeguards while on duty shall wear a red or bright orange bathing suit. Any shirt or jacket worn as an outer garment by a lifeguard shall also be red or bright orange and have the word GUARD printed in 4" lettering on the back. An orange hat or sun helmet shall be worn by all lifeguards out-of-doors while on duty. A sunblock or other skin protection should be made available to all lifeguards.

(5) The operator shall provide whistles and bull horns or other appropriate voice amplification devices to all lifeguards on duty.

(6) All lifeguards shall direct their attention to all persons in their assigned areas while on duty. For swimming pools with a bather load capacity of greater than 75, it is recommended that lifeguards be isolated from pool crowds by occupying elevated seats on stands high enough to give them complete and unobstructed views of persons in their assigned areas.

435.24: Safety Equipment

For each 2000 square feet of water surface area or fraction thereof, the operator shall provide, in readily accessible locations, at least one Ring Buoy, U.S. Coast Guard approved, with a ¼ inch polyethelene rope attached, no less in length than 1½ times the width of the pool. At those swimming pools that are staffed by lifeguards, there shall also be one Rescue Tube located at each lifeguard station. A backboard with straps shall also be readily available at each swimming pool which is attended by a lifeguard. In addition, all outdoor, inground swimming pools shall be equipped with a rescue hook.

435.25: First Aid Equipment and Emergency Communication

(1) The operator shall provide a first-aid kit consisting of the following items and such other additional items or quantities of items as may deemed necessary by the Board of Health: 35 1" bandaids; ten 3" x 3"sterile gauze pads; two 5" x 5" surgipads; one 8" x 10" surgipad; two 2" soft roller bandages; two 3" soft roller bandages; one ½" roll of hypoallergenic tape; one triangular bandage; one scissors; one tweezers; one rescue blanket; 12 antiseptic wipes; two disposable instant ice packs; one sterile isotonic buffered eye wash; two pairs of one-size-fits-all latex gloves; and one micro-shield or pocket mask with a one way valve.

(2) An emergency communication system which at a minimum would allow convenient, immediate and toll-free communication with emergency medical services, local police, state police and the local fire department, must be in working order and available at each pool. The telephone numbers of the emergency medical services, local police, state police and fire department, as well any instructions necessary to operate the communication system, shall be posted in a conspicuous place near the communication device or station. The location of the emergency communication device must be in an area that is unlocked and available to both the staff and the public at all times.

435.26: Waste Water and Backwash Water Disposal

(1) No waste water resulting from draining of a swimming, wading or special purpose pool or backwash water may be discharged on the watershed of a public surface water supply without prior approval of the Department of Environmental Protection. Any waste water resulting from draining a swimming, wading or special purpose pool shall be dechlorinated prior to its discharging.

(2) No waste water resulting from draining a swimming, wading or special purpose pool or backwash water may be discharged into a storm drain without approval of the agency having control over such facilities.

(3) Waste water resulting from draining a swimming, wading or special purpose pool or backwash water may be discharged to a subsurface disposal system if it is specifically designed for that purpose and approved by the appropriate agency.

(4) Diatomaceous earth filter backwash water must be discharged through a separation tank.

435.27: Bather Load Capacity

(1) For the purpose of computing bather load capacity, those portions of the swimming pool five feet or less in depth shall be designated as "non-swimmer" areas. Portions of the pool over five feet in depth shall be designated as the "swimming" area.

(2) In order to compute swimmer and bather capacity, swimming and wading pool areas shall be determined as follows:
(a) 15 square feet of pool water surface area shall be provided in the non-swimmer area for each non-swimmer expected at time of maximum load.
(b) 20 square feet shall be provided in the swimming area for each swimmer expected at time of maximum load.
(c) 300 square feet of pool water surface area shall be reserved around each diving board or diving platform and this area shall not be included in computing the area of the swimming area.
(d) 100 square feet of pool water surface area shall be reserved around each slide and this area shall not be included in computing the area of the swimming area.
(e) The bather load capacity shall be stated on the permit. (*see* 105 CMR 435.21(1)).

(3) The Board of Health may make additional allowance for bathers in cases of swimming pools with extensive deck areas used by patrons for lounging or sunbathing. These allowances shall be based on studies of actual swimming pool use in areas within the jurisdiction of the Board of Health.

(4) Ten square feet of water surface area per bather shall be used in computing the bather load capacity for special purpose pools.

435.28: Bacterial Quality

The Board of Health may cause samples of swimming, wading, or special purpose pool water for bacteriological analysis to be taken from the pool whenever it considers it necessary. All samples shall be collected, dechlorinated and examined in accordance with the procedure

outlined in the latest edition of the Standard Methods for the Examination of Water and Waste Water (APHA). The bacteriological quality of the water from the pool shall meet the following standards: No sample shall:

(1) contain more than 200 bacteria per milliliter, as determined by the standard (35°C) agar plate count, or show a positive test (confirmed test) for coliform organisms in any of the five 10-milliliter portions of a sample or more than 1.0 coliform organism per 50 milliliters when the membrane filter test is used; and

(2) show a positive test (confirmed test) for pseudomonas aeruginosa organisms in any of the five 10 milliliter portions of a sample or more than 1.0 pseudomonas aeruginosa organisms per 100 milliliters when the membrane filter test is used.

435.29: Chemical Standards

(1) Swimming, wading and special purpose pool water shall be treated in accordance with the following tables:

Type of Disinfection	pH (ppm)(mg/l)	Alkalinity (ppm)(mg/l)	Residual Chlorine
Chlorine	7.2-7.8	50-150	1.0-3.0 Free 0.0-0.2 Combined
Bromine	7.2-7.8	50-150	2.0-6.0

Other equally effective disinfectants registered with the United States Environmental Protection Agency as an approved disinfectant, may be used as a substitute for chlorine or bromine, subject to the approval of the local Board of Health.

(2) Tests for residual disinfectant shall be made four times daily, once during the peak load by the pool operator, or more often if required by the Board of Health.

(3) Hydrogen-Ion Concentration (pH): Tests for hydrogen-ion concentration (pH) shall be made simultaneously with the residual disinfectant test by the pool operator of each swimming pool, and whenever else the Board of Health considers it necessary.

(4) Alkalinity and calcium hardness: Tests for alkalinity and calcium hardness shall be made weekly by the pool operator of each pool and whenever else the Board of Health considers it necessary.

(5) If cyanuric acid is used to stabilize the free available residual chlorine, or if one of the chlorinated isocyanurate compounds is used as the disinfecting chemical, the concentration of cyanuric acid in the water should be at least 30 mg/l, but shall not exceed 100 mg/l.

(6) When electronic monitoring devices are used in conjunction with chlorine or bromine disinfection at a swimming, wading or special purpose pool, the operator shall check the disinfectant, pH and alkalinity levels manually at least once every 24 hours.

435.30: Water Testing Equipment

(1) The operator shall provide and use a DPD test kit for measuring the concentration of chlorine or bromine and an appropriate test kit for measuring pH, alkalinity, and cyanuric

acid levels at each swimming, wading and special purpose pool. The test kit shall be maintained in good repair together with an adequate supply of reagents that are no more than one year old. The requirements of 105 CMR 435.29 will not be superseded by the use of automatic equipment.
(2) An accurate unbreakable thermometer (± 1°F) shall be provided at each special purpose pool to determine water temperature.

435.31: Water Clarity

At all times any swimming, wading or special purpose pool is in use, the water shall be sufficiently clear to permit a black discsix inches in diameter on a white field, when placed on the bottom of the pool at the deepest point, to be clearly visible from the sidewalks of the pool at all distances up to ten yards measured from a line drawn across the pool through said disc.

435.32: Water Quality Maintenance

(1) Clarity and cleanliness of the water in a swimming, wading or special purpose pool shall be maintained by a continuous recirculation of the water through an appropriate filtration system approved by the Board of Health. The following minimum turnover rates shall be maintained:
(a) swimming pools-once every eight hours,
(b) wading pools-once every four hours,
(c) special purpose pools-once every ½ hour.

(2) The operator of a special purpose pool shall cause the pool to be drained, cleaned, and refilled a minimum of once every 14 days.

435.33: Maximum Operating Temperatures For Special Purpose Pools

(1) At no time shall the water temperature in special purpose pools exceed 104°F.

(2) A thermostatic control for water temperature which ensures compliance with 105 CMR 435.33(1) shall be provided at each special purpose pool. The thermostatic control shall only be accessible to the pool operator.

(3) Water temperature shall be determined when the pH and residual disinfectant are tested.

435.34: Closure of Pool

(1) The operator shall be familiar with the provisions of 105 CMR 435.000 and every other applicable law and regulation pertaining to swimming, wading and special purpose pools including testing equipment and safe handling of chemicals.

(2) If at any time the swimming, wading or special purpose pool water does not conform with the requirements set forth in 105 CMR 435.28 through 435.31, the operator shall immediately close the pool until the pool water conforms with those standards.

435.35: Water Slide Flumes

(1) Standards of water quality for water slide flumes shall conform with the requirements set forth in 105 CMR 435.28 through 435.30.

(2) Clarity and cleanliness of the water shall be maintained by a continuous recirculation of the water through an appropriate filtration system approved by the Board of Health. A turnover rate of at least once per hour shall be maintained.

(3) The operator of any water slide flume shall be familiar with the provisions of 105 CMR 435.000 and every other applicable law and regulation pertaining to water slide flumes.

(4) If at any time the water does not conform with the requirements set forth in 105 CMR 435.35(1), the operator shall immediately close the water slide flume until the water conforms with those standards.

(5) A flume shall be perpendicular to the splash down pool wall for a distance of at least ten feet from the exit end of the flume. The last ten feet of the flume shall have a slope which is not steeper than 1 in 10.

(6) The distance between the side of a flume terminus and a splash down pool side wall shall be at least five feet unless the flume terminus is designed to move sliders away from the wall and the distance to an adjacent flume is at least eight feet. The distance between sides of adjacent flume terminuses shall be at least five feet. The distance between a flume terminus and the opposite side of the splash down pool shall be at least 25 feet and steps shall not infringe upon this area.

(7) A flume shall terminate between a depth of six inches below the splash down pool operating water level and two inches above the water surface.

(8) The construction dimensions and the mechanical attachment of the flume components shall be such that the surface of the flume is smooth and continuous for its entire length.

(9) Each flume shall have a distinctive line or marking to indicate the starting zone in which only one rider at a time is permitted. This line shall be in accordance with the manufacturer's specifications or 30 feet, whichever is the longer distance. A sign shall be posted at the top of the slide warning all sliders not to proceed down the slide until the slider in front has passed this line.

435.36: Splash Down Pools

(1) The splash down pool operating water depth at the end of the flume shall be between 2 ½ and 3 ½ feet. This depth shall be maintained in front of the flume for a distance of at least ten feet, from which the splash down pool floor may have a constant slope upward to a minimum water depth of two feet. This slope shall not be steeper than 1 vertical in 12 horizontal. The bottom shall slope to the main drain at least two inches in ten feet.

(2) A surge storage area shall be provided, which will contain the water used for pumping onto the slide during periods when the slide is not in use, except where the splash down pool is a swimming pool where the water elevation will not be lowered by more than one inch when the flume pumps are in operation.

(3) Where a swimming pool is used as a splash down pool the area where the slide exits shall be roped off from the area of the pool used for swimming and bathing. Distances to any roping shall comply with the clearances specified in 105 CMR 435.35(6).

435.37: New and Innovative Equipment and Procedures

The use of any new and innovative equipment or disinfection methods other than those described herein is prohibited unless approved in writing by the Department.

The Department may approve innovative equipment and operating procedures if it can be demonstrated by the applicant that their use will achieve the intent of 105 CMR 435.000 to provide a reasonable safe environment and that any hazard to public health is not greater than that of other approved euipment and procedures.

435.38: General Sanitation

All swimming, wading and special purpose pools and all bathhouses, grounds and appurtenances shall be maintained in good repair and in a safe and sanitary manner.

435.41: General Administration

The provisions of 105 CMR 400.000 shall govern the administration and enforcement of 105 CMR 435.00 except as supplemented by 105 CMR 435.42 through 435.47.

435.42: Orders: Service and Content

(1) If an examination as provided for in 105 CMR 400.100 reveals that a swimming, wading or special purpose pool does not comply with the provisions of 105 CMR 435.000, the Board of Health may order the owner to comply with the violated provision.

(2) If an examination reveals the existence of a health or safety hazard at any swimming, wading or special purpose pool, the Board of Health, may, as it considers necessary, issue an

order which revokes or suspends a permit. Such an order shall be complied with in accordance with its directions and no person shall be permitted to enter the water of the swimming, wading or special purpose pool, unless and until the permit has been reissued or the order has been revoked in writing by the Board of Health.

(3) Every order authorized by 105 CMR 435.000 shall be in writing. All orders shall be served on the owner or his agent;
(a) personally, by any person authorized to serve civil process, or
(b) by leaving a copy of the order at his last and usual place of abode, or
(c) by sending him a copy of the order by registered or certified mail, return receipt requested, if he is within the Commonwealth, or
(d) if his last and usual place of abode is unknown or outside the Commonwealth, by posting a copy of the order in a conspicuous place on or about the swimming, wading or special purpose pool or portion thereof affected.

(4) Subject to the emergency provision of 105 CMR 400.200(B) and to the provisions of 105 CMR 435.42(2), any order issued under the provisions of 105 CMR 435.000 shall:
(a) inlcude a statement of the violation or defect, and may suggest action which if taken will effect compliance with 105 CMR 435.000, and
(b) inform the person to whom it is directed of his right to a hearing and of his responsibility to request the hearing, and to whom the request shall be made.

435.43: Hearing

(1) The person or persons to whom any order has been served pursuant to 105 CMR 435.000 may request a hearing before the Board of Health by filing with the Board of Health within

seven days after the day the order was served, a written petition requesting a hearing on the matter. Upon receipt of such petition the Board of Health shall set a time and a place for such a hearing and shall inform the petitioner thereof in writing. The hearing shall be commenced not later than ten days after the day on which the petition was filed; provided, that on application of the petitioner the Board of Health may postpone the date of the hearing for a reasonable time beyond such ten-day period if in the judgment of the Board of Health the petitioner has submitted a good and sufficient reason for such postponement.

(2) At the hearing the petitioner shall be given an opportunity to be heard and to show why the order should be modified or withdrawn.

(3) After the hearing the Board of Health shall sustain, modify or withdraw the order and shall inform the petitioner in writing of its decision. If the Board of Health sustains or modifies the order, it shall be carried out within the time period allotted in the original order or in the modification.

(4) Every notice, order, or other record prepared by the Board of Health in connection with the hearing shall be entered as a matter of public record in the office of the Board of Health.

(5) If a written petition for a hearing is not filed in the office of the Board of Health within seven days after an order has been issued, or if after a hearing, the order has been sustained in any part, each day's failure to comply with the order as issued or modified shall constitute an additional offense. (*see* 105 CMR 435.45).

435.44: Appeal

Any person aggrieved by the final decision of the Board of Health with respect to the denial of plan approval; variance request; the denial, revocation of, or failure to renew a license; or with respect to any order issued under the provisions of 105 CMR 435.000 may seek relief from any court of competent jurisdiction, as provided by the laws of the Commonwealth.

435.45: Penalties

(1) Any person who operates or maintains a swimming, wading or special purpose pool without the unexpired and unrevoked written permission of the Board of Health shall upon conviction be fined not less than $250 nor more than $500. Each day's violation will constitute a separate offense.

(2) Any person who shall violate any provision of 105 CMR 435.000 for which penalty is not otherwise provided in any of the General Laws or in any other provisions of 105 CMR 435.000 or 105 CMR 400.000 shall upon conviction be fined not less than $50 nor more than $500. Each day's violation will constitute a separate offense.

(3) Any person who shall fail to comply with any order issued pursuant to the provisions of 105 CMR 435.000 shall upon conviction be fined not less than $50 or more than $500. Each day's failure to comply with an order shall constitute a separate violation.

435.46: Variance

Variances may be granted only as follows: The Board of Health may vary the application of any provisions of 105 CMR 435.00 with respect to any particular case when, in its opinion
(a) the enforcement thereof would do manifest injustice; and
(b) the applicant has proved that the same degree of protection required under 105 CMR 435.00 can be achieved without strict application of the particular provision.
Every request for a variance shall be made in writing and shall state the specific variance sought and the reasons therefore. Any variance granted by the Board of Health shall be in writing. Any denial of a variance shall also be in writing and shall contain a brief statement of the reasons for the denial. A copy of each variance shall be conspicuously posted for 30 days following its issuance; and shall be available to the public at all reasonable hours in the office of the city or town clerk or the office of the Board of Health while it is in effect. Notice of the grant of each variance shall be filed with the Department of Public Health, which shall approve, disapprove, or modify the variance within 30 days from receipt thereof. If the Department fails to comment within 30 days, its approval will be presumed. No work shall be done under any variance until the Department approves it or 30 days

elapse without its comment, unless the Board of Health or the Department certifies in writing that an emergency exits.

435.47: Variance, Grant of Special Permission: Expiration Modification, Suspension of

Any variance or other modification authorized to be made by 105 CMR 435.000 may be subject to such qualification, revocation, suspension, expiration as the Board of Health expresses in its grant. A variance or other modification authorized to be made by 105 CMR 435.000 may otherwise be revoked, modified, or suspended, in whole or in part, only after the holder thereof has been notified in writing and has been given an opportunity to be heard, in conformity with the requirements for an order and hearing of 105 CMR 435.42 and 435.43.

435.00 Appendix A

APPENDIX A SWIMMING POOL TESTING RECORDS

DATE	TIME	FREE CHLORINE RESIDUAL (1.0-3.0)	COMBINED CHLORINE	PH (7.2 - 7.8)	CLARITY	TOTAL ALKALINITY (50-150 ppm)	AUTOMATIC CHLORINATOR FUNCTIONING		AUTOMATIC CHLORINATOR SETTING	WEATHER	TEMP	BATHER LOAD	CHEMICALS USED	TESTER
							YES	NO						

Appendix B

NOTICE of New Federal Pool Requirements
The Virginia Graeme Baker Pool & Spa Safety Act

The provisions of the new law are designed to prevent serious injuries and fatalities associated with suction entrapment in pools and spas.

By December 19, 2008, in accordance with the new federal law

- **ALL** public, semi-public and special purpose swimming pool drain/grate covers **MUST** conform to the American National Standard ASME A112.19.8 – 2007 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs, or any successor standard, published by the American Society of Mechanical Engineers (ASME);
- **EVERY** public, semi-public and special purpose swimming pool with a single main drain, other than an unblockable drain (interpreted by the Consumer Product Safety Commission to have minimum dimensions of 18 inches by 23 inches or have a diagonal measurement of 29 inches or more), **MUST** be equipped with one or more additional systems or devices designed to prevent suction entrapment. As outlined in the law these additional systems or devices may include a safety vacuum release system (SVRS), suction limiting vent system, gravity drainage system, automatic pump shut-off, or any other system determined by the CPSC to be equally effective in preventing suction entrapment;
- If a public, semi-public or special purpose pool can not comply by December 19, 2008, the CPSC requires that the pool or special purpose pool shut down until the proper covers are installed and, when applicable, an additional suction entrapment prevention device or system is installed as outlined in the law; and
- Non-compliance with these federal provisions may result in the imposition of civil or criminal penalties under sections 20 or 21 of the Consumer Product Safety Act.

By December 19, 2008, in accordance with regulation 105 CMR 435.00

- Anti-vortex drain covers must be replaced if they do not meet ASME A112.19.8 – 2007;
- Gravity drainage systems are **NOT** exempt from the drain/grate cover provisions;
- Drain disablement is **NOT** an acceptable suction entrapment prevention option, pursuant to 105 CMR 435.00 Minimum Standards for Swimming Pools, State Sanitary Code, Chapter V;
- An operating permit, pursuant to 105 CMR 435.21, should **NOT** be issued to any public, semi-public or special purpose pool that does not comply with the requirements;
- Variances pursuant to 105 CMR 435.46 shall **NOT** be granted since the federal law implies preemption of state requirements;
- Public, semi-public and special purpose swimming pools that are not open on December 19, 2008 are not required to be in compliance until the day that they re-open; and
- It is the pool operators' **RESPONSIBILITY** to provide written confirmation that pool drain/grate covers conform to the American National Standard ASME A112.19.8 – 2007.

For more information please visit the MDPH – Community Sanitation Program website **www.mass.gov/dph/dcs** or contact the Massachusetts Department of Public Health, Bureau of Environmental Health at **617-624-5757**.

Appendix C

TITLE XIV—POOL AND SPA SAFETY (15 USC 8001)
SEC. 1401. SHORT TITLE.
This title may be cited as the ''Virginia Graeme Baker Pool and Spa Safety Act''.

SEC. 1402. FINDINGS.
Congress finds the following:

(1) Of injury-related deaths, drowning is the second leading cause of death in children aged 1 to 14 in the United States.

(2) In 2004, 761 children aged 14 and under died as a result of unintentional drowning.

(3) Adult supervision at all aquatic venues is a critical safety factor in preventing children from drowning.

(4) Research studies show that the installation and proper use of barriers or fencing, as well as additional layers of protection, could substantially reduce the number of childhood residential swimming pool drownings and near drownings.

SEC. 1403. DEFINITIONS.
In this title:

(1) ASME/ANSI.—The term ''ASME/ANSI'' as applied to a safety standard means such a standard that is accredited by the American National Standards Institute and published by the American Society of Mechanical Engineers.

(2) BARRIER.—The term ''barrier'' includes a natural or constructed topographical feature that prevents unpermitted access by children to a swimming pool, and, with respect to a hot tub, a lockable cover.

(3) COMMISSION.—The term ''Commission'' means the Consumer Product Safety Commission.

(4) MAIN DRAIN.—The term ''main drain'' means a submerged suction outlet typically located at the bottom of a pool or spa to conduct water to a recirculating pump.

(5) SAFETY VACUUM RELEASE SYSTEM.—The term ''safety vacuum release system'' means a vacuum release system capable of providing vacuum release at a suction outlet caused by a high vacuum occurrence due to a suction outlet flow blockage.

(6) SWIMMING POOL; SPA.—The term ''swimming pool'' or ''spa'' means any outdoor or indoor structure intended for swimming or recreational bathing, including in-ground and

aboveground structures, and includes hot tubs, spas, portable spas, and non-portable wading pools.

(7) UNBLOCKABLE DRAIN.—The term ''unblockable drain'' means a drain of any size and shape that a human body cannot sufficiently block to create a suction entrapment hazard.

SEC. 1404. FEDERAL SWIMMING POOL AND SPA DRAIN COVER STANDARD.
(a) CONSUMER PRODUCT SAFETY RULE.—The requirements described in subsection (b) shall be treated as a consumer product safety rule issued by the Consumer Product Safety Commission under the Consumer Product Safety Act (15 U.S.C. 2051 et seq.).

(b) DRAIN COVER STANDARD.—Effective 1 year after the date of enactment of this title, each swimming pool or spa drain cover manufactured, distributed, or entered into commerce in the United States shall conform to the entrapment protection standards of the ASME/ANSI A112.19.8 performance standard, or any successor standard regulating such swimming pool or drain cover.

(c) PUBLIC POOLS.—

(1) REQUIRED EQUIPMENT.—

(A) IN GENERAL.—Beginning 1 year after the date of enactment of this title—

(i) each public pool and spa in the United States shall be equipped with anti-entrapment devices or systems that comply with the ASME/ANSI A112.19.8 performance standard, or any successor standard; and

(ii) each public pool and spa in the United States with a single main drain other than an unblockable drain shall be equipped, at a minimum, with 1 or more of the following devices or systems designed to prevent entrapment by pool or spa drains that meets the requirements of subparagraph (B):

(I) SAFETY VACUUM RELEASE SYSTEM.—A safety vacuum release system which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17 or ASTM standard F2387.

(II) SUCTION-LIMITING VENT SYSTEM.—A suction- limiting vent system with a tamper-resistant atmospheric opening.

(III) GRAVITY DRAINAGE SYSTEM.—A gravity drainage system that utilizes a collector tank.

(IV) AUTOMATIC PUMP SHUT-OFF SYSTEM.—An automatic pump shut-off system.

(V) DRAIN DISABLEMENT.—A device or system that disables the drain.

(VI) OTHER SYSTEMS.—Any other system determined by the Commission to be equally effective as, or better than, the systems described in subclauses (I) through (V) of this clause at preventing or eliminating the risk of injury or death associated with pool drainage systems.

(B) APPLICABLE STANDARDS.—Any device or system described in subparagraph (A)(ii) shall meet the requirements of any ASME/ANSI or ASTM performance standard if there is such a standard for such a device or system, or any applicable consumer product safety standard.

(2) PUBLIC POOL AND SPA DEFINED.—In this subsection, the term "public pool and spa" means a swimming pool or spa that is—

(A) open to the public generally, whether for a fee or free of charge;

(B) open exclusively to—

(i) members of an organization and their guests;

(ii) residents of a multi-unit apartment building, apartment complex, residential real estate development, or other multi-family residential area (other than a municipality, township, or other local government jurisdiction); or

(iii) patrons of a hotel or other public accommodations facility; or

(C) operated by the Federal Government (or by a concessionaire on behalf of the Federal Government) for the benefit of members of the Armed Forces and their dependents or employees of any department or agency and their dependents.

(3) ENFORCEMENT.—Violation of paragraph (1) shall be considered to be a violation of section 19(a)(1) of the Consumer Product Safety Act (15 U.S.C. 2068(a)(1)) and may also be enforced under section 17 of that Act (15 U.S.C. 2066).

SEC. 1405. STATE SWIMMING POOL SAFETY GRANT PROGRAM.
(a) IN GENERAL.—Subject to the availability of appropriations authorized by subsection (e), the Commission shall establish a grant program to provide assistance to eligible States.

(b) ELIGIBILITY.—To be eligible for a grant under the program, a State shall—

(1) demonstrate to the satisfaction of the Commission that it has a State statute, or that, after the date of enactment of this title, it has enacted a statute, or amended an existing statute, and provides for the enforcement of, a law that—

(A) except as provided in section 1406(a)(1)(A)(i), applies to all swimming pools in the State; and

(B) meets the minimum State law requirements of section 1406; and

(2) submit an application to the Commission at such time, in such form, and containing such additional information as the Commission may require.

(c) AMOUNT OF GRANT.—The Commission shall determine the amount of a grant awarded under this title, and shall consider—

(1) the population and relative enforcement needs of each qualifying State; and

(2) allocation of grant funds in a manner designed to provide the maximum benefit from the program in terms of protecting children from drowning or entrapment, and, in making that allocation, shall give priority to States that have not received a grant under this title in a preceding fiscal year.

(d) USE OF GRANT FUNDS.—A State receiving a grant under this section shall use—

(1) at least 50 percent of amounts made available to hire and train enforcement personnel for implementation and enforcement of standards under the State swimming pool and spa safety law; and

(2) the remainder—

(A) to educate pool construction and installation companies and pool service companies about the standards;

(B) to educate pool owners, pool operators, and other members of the public about the standards under the swimming pool and spa safety law and about the prevention of drowning or entrapment of children using swimming pools and spas; and

(C) to defray administrative costs associated with such training and education programs.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Commission for each of fiscal years 2009 and 2010 $2,000,000 to carry out this section, such sums to remain available until expended. Any amounts appropriated pursuant to this subsection that remain unexpended and unobligated at the end of fiscal year 2010 shall be retained by the Commission and credited to the appropriations account that funds enforcement of the Consumer Product Safety Act.

SEC. 1406. MINIMUM STATE LAW REQUIREMENTS.
(a) IN GENERAL.—

(1) SAFETY STANDARDS.—A State meets the minimum State law requirements of this section if—

(A) the State requires by statute—

(i) the enclosure of all outdoor residential pools and spas by barriers to entry that will effectively prevent small children from gaining unsupervised and unfettered access to the pool or spa;

(ii) that all pools and spas be equipped with devices and systems designed to prevent entrapment by pool or spa drains;

(iii) that pools and spas built more than 1 year after the date of the enactment of such statute have—

(I) more than 1 drain;

(II) 1 or more unblockable drains; or

(III) no main drain;

(iv) every swimming pool and spa that has a main drain, other than an unblockable drain, be equipped with a drain cover that meets the consumer product safety standard established by section 1404; and

(v) that periodic notification is provided to owners of residential swimming pools or spas about compliance with the entrapment protection standards of the ASME/ANSI A112.19.8 performance standard, or any successor standard; and

(B) the State meets such additional State law requirements for pools and spas as the Commission may establish after public notice and a 30-day public comment period.

(2) NO LIABILITY INFERENCE ASSOCIATED WITH STATE NOTIFICATION REQUIREMENT.—The minimum State law notification requirement under paragraph (1)(A)(v) shall not be construed to imply any liability on the part of a State related to that requirement.

(3) USE OF MINIMUM STATE LAW REQUIREMENTS.—The Commission—

(A) shall use the minimum State law requirements under paragraph (1) solely for the purpose of determining the eligibility of a State for a grant under section 1405 of this Act; and

(B) may not enforce any requirement under paragraph

(1) except for the purpose of determining the eligibility of a State for a grant under section 1405 of this Act.

(4) REQUIREMENTS TO REFLECT NATIONAL PERFORMANCE STANDARDS AND COMMISSION GUIDELINES.—In establishing minimum State law requirements under paragraph (1), the Commission shall—

(A) consider current or revised national performance standards on pool and spa barrier protection and entrapment prevention; and

(B) ensure that any such requirements are consistent with the guidelines contained in the Commission's publication 362, entitled ''Safety Barrier Guidelines for Home Pools'', the Commission's publication entitled ''Guidelines for Entrapment Hazards: Making Pools and Spas Safer'', and any other pool safety guidelines established by the Commission.

(b) STANDARDS.—Nothing in this section prevents the Commission from promulgating standards regulating pool and spa safety or from relying on an applicable national performance standard.

(c) BASIC ACCESS-RELATED SAFETY DEVICES AND EQUIPMENT REQUIREMENTS TO BE CONSIDERED.—In establishing minimum State law requirements for swimming pools and spas under subsection (a)(1), the Commission shall consider the following requirements:

(1) COVERS.—A safety pool cover.

(2) GATES.—A gate with direct access to the swimming pool or spa that is equipped with a self-closing, self-latching device.

(3) DOORS.—Any door with direct access to the swimming pool or spa that is equipped with an audible alert device or alarm which sounds when the door is opened.

(4) POOL ALARM.—A device designed to provide rapid detection of an entry into the water of a swimming pool or spa.

(d) ENTRAPMENT, ENTANGLEMENT, AND EVISCERATION PREVENTION STANDARDS TO BE REQUIRED.—

(1) IN GENERAL.—In establishing additional minimum State law requirements for swimming pools and spas under subsection (a)(1), the Commission shall require, at a minimum, 1 or more of the following (except for pools constructed without a single main drain):

(A) SAFETY VACUUM RELEASE SYSTEM.—A safety vacuum release system which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17 or ASTM standard F2387, or any successor standard.

(B) SUCTION-LIMITING VENT SYSTEM.—A suction-limiting vent system with a tamper-resistant atmospheric opening.

(C) GRAVITY DRAINAGE SYSTEM.—A gravity drainage system that utilizes a collector tank.

(D) AUTOMATIC PUMP SHUT-OFF SYSTEM.—An automatic pump shut-off system.

(E) DRAIN DISABLEMENT.—A device or system that disables the drain.

(F) OTHER SYSTEMS.—Any other system determined by the Commission to be equally effective as, or better than, the systems described in subparagraphs (A) through (E) of this paragraph at preventing or eliminating the risk of injury or death associated with pool drainage systems.

(2) APPLICABLE STANDARDS.—Any device or system described in subparagraphs (B) through (E) of paragraph (1) shall meet the requirements of any ASME/ANSI or ASTM performance standard if there is such a standard for such a device or system, or any applicable consumer product safety standard.

SEC. 1407. EDUCATION PROGRAM.
(a) IN GENERAL.—The Commission shall establish and carry out an education program to inform the public of methods to prevent drowning and entrapment in swimming pools and spas. In carrying out the program, the Commission shall develop—

(1) educational materials designed for pool manufacturers, pool service companies, and pool supply retail outlets;

(2) educational materials designed for pool owners and operators; and

(3) a national media campaign to promote awareness of pool and spa safety.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Commission for each of the fiscal years 2008 through 2012 $5,000,000 to carry out the education program authorized by subsection (a).

SEC. 1408. CPSC REPORT.
Not later than 1 year after the last day of each fiscal year for which grants are made under section 1405, the Commission shall submit to Congress a report evaluating the implementation of the grant program authorized by that section.