(This Model Legislation is provided by the U.S. Consumer Product Safety Commission staff for the purpose of assisting state and local legislatures that desire to enact or amend existing legislation for the purpose of preventing child drowning and suction entrapment injuries and deaths in swimming pools and spas. This Model Legislation also is intended to assist states and political subdivisions that want to meet the minimum eligibility requirements for applying for a grant under Sections 1405 and 1406 of the Virginia Graeme Baker Pool and Spa Safety Act.)

MODEL UNIFORM STATE (OR POLITICAL SUBDIVISION) POOL AND SPA SAFETY BILL

SECTION 1
TITLE

This Act shall be known and may be cited as the "[STATE or POLITICAL SUBDIVISION] Virginia Graeme Baker Pool and Spa Safety Act."

SECTION 2
PURPOSE

This Act is intended to enhance the safety of public and residential pools and spas; encourage the use of layers of protection; reduce child drowning in pools and spas; reduce the number of suction entrapment incidents, injuries, and deaths; and educate the public on the importance of constant supervision of children in and around water.

SECTION 3
DEFINITIONS

For the purposes of this Act:

(a) ASME/ANSI.—The term "ASME/ANSI" as applied to a safety standard means a standard that is accredited by the American National Standards Institute (ANSI) and published by the American Society of Mechanical Engineers (ASME).
(b) Automatic pump shut-off system.—An automatic pump shut-off system is a device that can sense a drain blockage and shut off the pump system. Some safety vacuum release systems may meet this definition.
(c) Barrier.—The term "barrier" includes a natural or constructed topographical feature that prevents unpermitted access by young children to a swimming pool, and, with respect to a portable hot tub and a portable spa, a lockable cover.
(d) Commission.—The term "Commission" means the U.S. Consumer Product Safety Commission.
(e) Drain disablement.—A device or system that disables the drain.
(f) Gravity drainage system.—A gravity drainage system utilizing a collector tank is a swimming pool/spa with a separate water storage vessel from which the pool circulation pump draws water. Water moves from the pool to the collector tank due to atmospheric pressure, gravity and the displacement of water by bathers,

which removes the need for direct suction at the pool. This type of system is also referred to as a reservoir, surge tank, or surge pit.

(g) 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.

(h) Multiple main drain system.—A multiple main drain system consists of, at a minimum, two fully submerged suction outlets per pump, with drain cover centers at least 3 feet apart.

(i) Public pool or spa.—The term "public pool" or "public spa" means a 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, only to the extent these pools or spas are under the jurisdiction of the State.

(j) Safety vacuum release system.—The term "safety vacuum release system" means a vacuum release system capable of providing vacuum release at a suction outlet where there is a high vacuum occurrence due to a suction outlet flow blockage. The safety vacuum release system ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected. It has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17 or ASTM standard F2387.

(k) Single main drain.—A single main drain is a submerged suction outlet, with or without a skimmer, connected to a dedicated pool pump. Main drains do not drain the pool, spa, or hot tub, as a sink drain does in a sink, but rather connect to the pump to allow for circulation and filtration. A pool may have more than one single main drain if it has multiple suction outlets that are each connected to a dedicated pump. A group of suction outlets connected together is considered a single main drain if the centers of the outlets are located at a distance less than three 3 feet from each other.

(l) Suction-limiting vent system.—A suction-limiting vent system is also called an atmospheric vent. It is a pipe teed to the suction side of the circulation system on one end and open to the atmosphere on the opposite end. The pipe is normally full of water equal to the same height as the pool. When a blockage occurs at the main drain, air is introduced into the suction line thus causing the pump to lose prime and relieving the suction forces at the main drain (suction outlet).

(m) Swimming pool; spa.—The term "swimming pool" or "spa" means any outdoor or indoor structure intended for swimming or recreational bathing, including in-ground, on-ground, and above-ground structures, inflatable pools that can hold

water over 24 inches deep, hot tubs, portable hot tubs, spas, portable spas, and non-portable wading pools.

(n) 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.

SECTION 4
MINIMUM REQUIREMENTS

I. Barriers.

All outdoor residential pools and spas shall be enclosed by barriers to entry that will effectively prevent small children from gaining unsupervised and unfettered access to the pool or spa.

Note: The State (or political subdivision) statute must require enclosure of all outdoor residential pools and spas, including existing pools and spas, by barrier to entry. Thus, this section applies to outdoor residential pools and spas; it does not apply to public pools and spas. The intent of these barriers is to effectively provide protection against drowning or near-drowning of young children by preventing them from gaining unsupervised and unfettered access to swimming pools and spas.

For purposes of the barrier requirement, a "swimming pool" or "spa" includes any outdoor structure intended for swimming or recreational bathing, including in-ground and above-ground structures. It includes portable hot tubs, spas, portable spas, and non-portable wading pools. CPSC staff has interpreted "swimming pool" to include non-portable spas, non-portable hot tubs, and larger inflatable pools that can hold water over 24 inches deep ("larger inflatable pools"), regardless of whether the pool has a circulation system.

Following is an explanation of what constitutes effective barriers to entry.

Residential *outdoor* in-ground, on-ground, and above-ground swimming pools and spas, larger inflatable pools that can hold water over 24 inches deep, portable spas and hot tubs (except as noted below), non-portable spas and hot tubs, and non-portable wading pools, including existing pools and spas shall meet the following requirements:

- Fences/and or Walls.

The top of a fence or wall used as a barrier shall be a minimum of 48 inches (1219 mm) above grade. The bottom of a fence shall be no more than 4 inches (102 mm) above grade when that grade is a hard surface such as cement/asphalt. The bottom of a fence shall be no more than 2 inches (51 mm) above grade when that grade is a soft surface such as grass or ground/natural surface. All measurements shall be taken on the barrier side farthest from the pool.

Solid barriers such as brick or rock walls shall have no indentations or protrusions that can provide hand and/or foot holds. Normal construction tolerances and masonry joints are allowed.

Horizontal and vertical members: Where a fence is constructed of horizontal and vertical members, then:

- If the distance between the top of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. The spacing between the vertical members shall not exceed 1-3/4 inches (44 mm) in width. Any decorative cutout spacing within vertical members of the fence shall not exceed 1-3/4 inches (44 mm) in width.
- If the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, the spacing between the vertical members shall not exceed 4 inches (102 mm) in width. Any decorative cutout spacing within vertical members of the fence shall not exceed 1-3/4 inches (44 mm) in width.

Diagonal members: For a fence made up of crossed wood, polyvinyl chloride (PVC), or metal strips (latticework), the maximum opening between the diagonal members shall not exceed 1-3/4 inches (44 mm).

Chain link fence: The maximum mesh size for a chain link fence shall not exceed 1-1/4 inches (32 mm) square [1-3/4 inches (44 mm) diagonal]. A larger mesh size may be used if slats fastened at the top or bottom of the fence are used to reduce mesh openings to no more than 1-3/4 inches (44 mm). See Figure A.

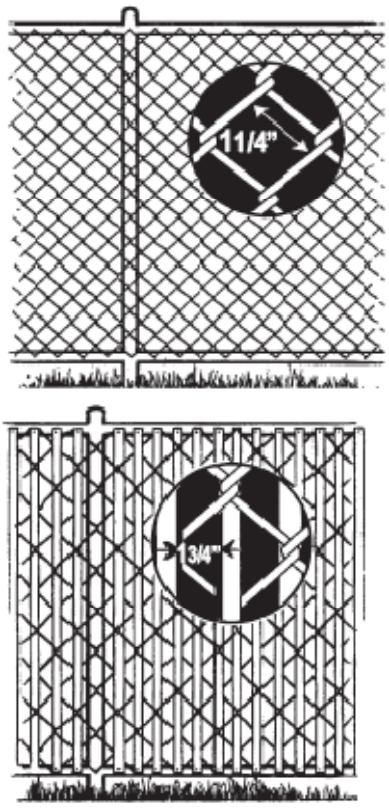

Figure A. Maximum chain link fence opening.

Mesh fencing: Removable mesh fencing for swimming pools shall meet the requirements of ASTM F2286-05: "Design and Performance Specification for Removable Mesh for Swimming Pools, Hot Tubs, and Spas".

Pool structure as barrier: For above-ground or on-ground pools, the pool structure itself may serve as a ground level barrier only if it is at least 48 inches (1219 mm) high. If the top of the pool structure is less than 48 inches (1219 mm) above grade and a barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

Ladder or steps: Where access to an above-ground pool is provided by a ladder or steps, then:

- The steps or ladder shall be designed to be secured, locked, or removed to prevent access, or
- A barrier such as one described under "Fences and/or Walls," above, shall surround the steps or ladder.

➢ Access Gates.

Access gates shall meet the requirements of Fences and/or Walls (above) and shall be equipped to accommodate a locking device.

Pedestrian access gates shall open outward away from the pool and shall be self-closing and self-latching. A locking device shall be included in the gate design.

Where the release mechanism of the self-latching device is less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings must comply with the following:

- The release mechanism shall be on the pool side of the gate at least 3 inches (76 mm) below the top of the gate, and
- The gate and barrier shall have no opening greater than ½ inch (13 mm) within 18 inches (457 mm) of the release mechanism.

Access gates used with removable mesh fencing systems must meet the requirements of the access gates, above -- i.e., manual "layback" entrances are not considered to meet the requirement.

Gates other than for pedestrian access shall be equipped with a self-latching device.

➢ Dwelling walls.

For swimming pools or spas where dwelling walls serve as a part of the barrier, one of the following (an audible alarm system or a power safety cover) shall be in place:

- Audible alarm system. A door in the wall that provides direct access to the pool shall be equipped with an audible alarm system meeting Underwriters Laboratories Inc. (UL) standard UL 2017 *General-Purpose Signaling Devices and Systems,* Section 77, Residential Water Hazard Entrance Alarm Equipment.
    i. The Alarm system shall be equipped with a manual means to temporarily deactivate the alarm for not more than 15 seconds.

ii. The deactivation means shall be located not less than 54 inches (1372 mm) from the floor or threshold of the door.

- Power Safety Cover. A power safety cover for swimming pools or a manual **lockable** safety cover for non-portable spas and non-portable hot tubs that meets the requirements of ASTM F1346 *Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas, and Hot Tubs.*

Residential outdoor portable spas and residential outdoor portable hot tubs. Residential outdoor portable spas and residential outdoor portable hot tubs are exempt from the "Fences and/or Walls" requirements, if and only if they have a lockable manual safety cover that complies with ASTM F1346.

All Barriers. All barriers shall be located so as to prohibit permanent structures, equipment, or similar objects from being used to climb the barriers.

Additional Layers of Protection—Barriers. Additional layers of protection are available. These are not required for meeting the minimum eligibility requirements for purposes of the VGB Pool and Spa Safety Grant Program, but CPSC encourages their use. See Section III below.

II. Entrapment.

A. All pools and spas shall be equipped with devices and systems designed to prevent entrapment by pool or spa drains.

This means that all pools and spas, both residential and public, must be equipped with devices and systems designed to prevent entrapment by pool or spa drains. Devices and systems designed to prevent entrapment by pool or spa drains may include multiple drain systems (including pools without a single main drain), a safety vacuum release system, a suction-limiting vent system, a gravity drainage system, an automatic pump shut-off system, an unblockable drain cover, or drain disablement. The presence of any one of these devices or systems satisfies this requirement. Portable spas certified to UL 1563 by a Nationally Recognized Testing Laboratory

(NRTL) are considered to comply with the entrapment prevention provisions of the Act.

B. Pools and spas built more than one year after the date of the enactment of this title shall have—

a. More than one drain;
b. One or more unblockable drains;
c. No single main drain.

This section applies to public and residential pools built more than one year after the date of enactment of the State (or political subdivision) statute. The pool or spa built more than one year after the date of enactment must have more than one drain, one or more unblockable drains, or no main drain.

More than one drain: A pool with two fully submerged suction outlets per pump, with drain cover centers at least 3 feet apart, would constitute a pool with more than one drain. A pool with a multiple drain system *per pump* would also constitute a pool with more than one drain.

One or more unblockable drains: An unblockable drain is a drain of any size and shape that a human body cannot sufficiently block to create a suction entrapment hazard. An unblockable drain may include:

- drains with dimensions greater than of 18” x 23”, which represent the shoulder to waist measurements of the 99th percentile adult male;
- drain configurations that prevent a seal from occurring (large aspect cover, such as 18” x 23” or larger cover)
- long channels that cannot be blocked by the body (conceptual Figure a.);
- large outlet grate (diagonal measure of 29” or more) (conceptual Figure b.);

- circulation designs that do not include fully submerged suction outlets.

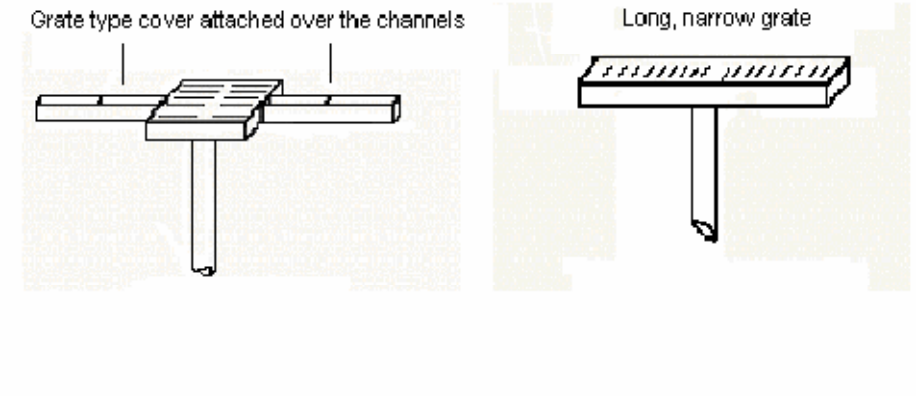

Figure a. Long Channel Figure b. Large Grate

Conceptual Unblockable Drain Configurations

No single main drain. A single main drain is a submerged suction outlet, with or without a skimmer, connected to a dedicated pool pump. It is possible for a pool to be constructed with more than one single main drain. A pool with more than one single main drain would also violate the requirement for no single main drain.

C. Every swimming pool and spa that has a main drain, other than an unblockable drain, shall be equipped with a drain cover that meets the consumer product safety standard established by section 1404 of the Virginia Graeme Baker Pool and Spa safety Act..

This applies to both residential and public swimming pools and spas that do not have unblockable drains. Residential and public swimming pools with drains that are blockable must be equipped with a drain cover that meets ASME/ANSI A112.19.8.

D. Periodic notification shall be 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.

The State (or political subdivision) shall ensure that periodic notification is provided to owners of residential swimming pools or spas about the compliance with the entrapment protection standards of ASME/ANSI A112.19.8 performance standard, or any successor standard.

E. No liability inference associated with state (or political subdivision) notification requirement.—The minimum State (or political subdivision) law notification requirement under paragraph (D) shall not be construed to imply any liability on the part of a State (or political subdivision) related to that requirement.

The notification requirement does not impart any liability to the State (or political subdivision) in the event of an entrapment incident.

Please note that what follows on the next page represents requirements that a State (or political subdivision) may wish to consider. A State (or political subdivision) statute need not require these basic access-related safety devices and equipment in order to be eligible for a grant.

III. "Basic Access-Related Safety Devices and Equipment"

A. Window Guards.

A window in a wall that allows access to the pool may be equipped with window guards that limit access or be affixed with a childproof device to limit the window opening to less than 4 inches. The window guard shall meet ASTM F2006 *Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape (Egress) and Rescue (Ingress) Windows.*

B. Swimming Pool Alarms.

A pool alarm may be used to provide warning that a pool has been entered. A pool-based alarm may be either a surface or subsurface alarm. Surface alarms float on a pool's surface and are activated by waves in the pool. Subsurface alarms respond to pressure waves under the water surface, generated by the displacement of water when an object enters the pool. Perimeter alarms, if used, should be used in conjunction with barriers meeting the barrier requirements of section (a). All alarms shall meet the requirements of ASTM F2208 *Standard Specification for Pool Alarms.*