Prepared by the Beach Warnings & Rescue Equipment Committee of the Great Lakes Water Safety Consortium and approved by the GLWSC Board, December 10, 2018

Water Safety Rescue Equipment 2018
Recommendations and Considerations

With more than 700 drownings in the Great Lakes since tracking began in 2010, more must be done in pursuit of our mission to end drowning. Education & training, beach warnings, persuasive messaging and awareness campaigns, scientific data collection and discoveries, trained lifeguards, and available rescue equipment are all ways we can help make people safer in the Great Lakes.

Focusing on rescue equipment for unguarded beaches, the Great Lakes Water Safety Consortium (GLWSC) encourages local authorities across the Great Lakes to make their beaches and waterfronts safer by providing water safety equipment as recommended in this report. These recommendations draw on the collective experience of our 300+ members, representing many organizations, disciplines, and points of view, and are informed by the history of Great Lakes drowning from dangerous currents since 2002 (Great Lakes Current Incident Database).

Summary of Recommendations:
1) Life Rings
2) Other:
   - Youth Life Jackets
   - Adult Life Jackets
   - Whistles
   - Throw Bags
   - Rescue Boards
   - Rescue Tubes
   - EMILY Rescue Drone
Challenges to keeping swimmers at Great Lakes beaches safe include:

- Our beaches and waterfronts are promoted by economic development initiatives, bringing more people to the water's edge every year. Visitors have been sold the idea of a care-free beach vacation. Many show up unaware of the dangers of open water, or of the forces at play in the big lakes.
- Many local residents are complacent about their familiar surroundings.
- Many of the municipal beach parks are historically situated adjacent to structures (such as jetties a.k.a. piers) that create dangerous currents. The majority of our incidents occur around these structures.
- Most rescues are accomplished by bystanders who step up in an emergency without training or equipment. Without dedicated lifeguards, bystanders are usually the only option for providing assistance to a drowning victim. Often the rescuer ends up in danger or as victims themselves because they have spent their energies and do not have the strength to get themselves to safety.
- Liability, while debunked by risk management experts as a myth, is still cited as a main reason for not hiring lifeguards or providing rescue equipment. We would be happy to discuss this issue with any interested parties.
- Fiscal reasons, even in today's strong economy, are also cited, despite the fact that one search & recovery mission, with helicopters, boats, and dive teams, can cost far more than hiring lifeguards and providing rescue equipment to prevent drownings in the first place. Again there are some creative ‘best practices’ we would be happy to share.

In an emergency, people make split-second choices. It is common to overestimate the amount of time that a victim can struggle before becoming a fatality, or to miss the signs of drowning altogether. Although water temperature, swimming/floating ability, distance from shore, and more are factors, drowning can happen in less than a minute.

It is also common to underestimate the amount of time that it takes for emergency personnel to arrive on the scene, especially if there is confusion about the location of the emergency. A well thought-out rescue station makes the right decisions automatic.

Safety equipment in a beach or waterfront area makes that area safer in three ways:

1. Safety equipment is a visual reminder that the area has potential dangers
2. Equipment can be used to help someone in trouble
3. We know that people have an instinctive reflex to help others, even if they put themselves in danger by doing so. Providing equipment makes rescues and the rescuer safer.
GLWSC Beach Safety/Rescue Equipment Recommendations

1) **Life rings** with attached line are the core of our recommendations. Orange life rings are a well-known symbol of marine safety as well as a multi-use tool. A life ring can be tossed, dropped from a structure, or dragged out by a swimming rescuer. An attached line is a means to try again if the first toss is off target, or a way to pull a victim to safety.

If the funding, infrastructure, and political will are available, it is possible to have a life ring stand that automatically calls 911 and relays the location as soon as the ring is lifted from its cradle, as South Haven, Michigan, installed after a fatal drowning.

Even the most basic installation should include signage to point out local hazards and instruct how to call for help. Multiple Installations can be labeled with unique numbers to help first responders locate the scene quickly and accurately.

Our recommendations have evolved towards simplicity, redundancy, and cost effectiveness. Five life rings at a cost of $150 each make a beach safer than one large installation of many pieces of equipment that may confuse, intimidate, or endanger a casual user.

A 20-inch ring with 50 feet of floating line costs about $150. A simple fence post with hook can be put together for about $20, or the rings could be hung on an existing post or fence.

Considerations in choosing life rings:

- Bigger is not better! Smaller rings (20 or 24 inch) are easier for the untrained person to throw.
- An attached rope gives the rescuer the chance to throw again if the first throw is off target. When throwing from a pier, the attached rope can be used to tow the victim to safety. If the structure is high above the water, a longer line (75 feet) is needed.
- We recommend a floating core double braided line, as it coils easily and is less likely to tangle. A velcro strap will keep it ready for use.
- Orange rings are easier to spot in surf.

**Recommended Life Ring:** [Cal-June](http://www.cal-june.com), Type IV Throw Ring Buoy, 35 lb. buoyancy, 24 in. diameter, orange with reflective tape, and grab handles (or equivalent).

2) Other water safety and emergency rescue equipment recommendations
It is important to keep in mind that some equipment will be used primarily by first responders (fire, park staff, beach patrol); however, other equipment will be used by both first responders and the general public.

Products were chosen based on a number of criteria: (1) Previously used by first responders; (2) specific features of products (e.g., buoyancy ratings, grab handles designed for in-water rescue, and flotation devices designed to keep a swimmer's head above the water - when conscious or unconscious); and (3) recommendations by respected sources (e.g., first responders).

These products and features were specified based on safety ratings, rescue features, and recommendations by the US Coast Guard and US Life Saving Association, and recommendations by a regional group, including first responders in Michigan, Illinois, Indiana, and Wisconsin.

Members of the project group spent considerable time selecting equipment that met rigid specifications of the organizations and group mentioned above.

**Other Safety/Rescue Equipment Recommendations:**
- **Youth Life Jacket:** Kent, Nearshore Type II Buoyant Life Jacket for youth 50-90 lbs (or equivalent) $8
- **Adult Life Jacket:** Stearns, Crew Mate Type I Offshore Life Vest, 22 lbs. buoyancy rating will hold 2, possibly 3 adults, depending on weight (or equivalent) $44
- **Whistle:** Fox 40, Safety whistle, model: Classic, high-decibel, 3-chamber, plastic, pealess, 115 dB (or equivalent) $6
- **Throw Bag:** Feld Fire, RQ3 Ultimate No Knot Throw Bag, with second chance floating ball, and 3/8 in. high-quality max grip rope (or equivalent) $30
- **Rescue Board:** Carlson, Rescue Board (high density foam), 4 ft. long with grab handles (or equivalent) $485
- **Rescue Tube:** Kiefer 50” Super Mesh Rescue ExoTube 50 in. long x 6 in. wide x 3 in. thick; not rated for buoyancy but recommended by first responders – both US Life Saving Association and fire departments (or equivalent) $55
- **EMILY Rescue Drone:** Great Lakes Unmanned Systems Center ($10,900) Email Jeffrey Loman at Great Lakes Unmanned Systems Center

**Placement Considerations**
- Lake levels are very dynamic. Equipment needs to be close enough to the water to be seen and grabbed quickly, but out of the reach of high waves. It might be necessary to relocate equipment several times a year.
- Survey your beaches and waterfronts for hazards like drop offs, currents, etc. Watch the
people and study the traffic patterns and places where people gather. Place equipment near high-traffic areas, and in sight of potential hazards like structures. Don’t overlook waterfronts, docks, and breakwaters where people may enter the water unintentionally.

- Expect life rings and lines to last about four years before the UV degrades them and they must be replaced. If they are brought in during the off season, they may last longer.

**Additional Recommendations**

Consider posting an adult life vest at each throw ring station. This allows the rescuer to don the life vest before attempting the rescue; a recommended practice even if the rescuer intends to stay on shore.

Consider incorporating a loaner life jacket station in areas where people swim or where children use the beach.

In an ideal world, the procedure would be to call 911, don a life preserver, and then try to help. In an actual emergency, the safety of the rescuer is often an afterthought. It is common for someone who enters the water to assist to become a victim themselves, as the rescuer ends up exhausted while the attention is focused on the original victim. Providing two life rings or other flotation device at each station instead of one could be a way to make the rescuer safer.

All rescue equipment should be kept in good condition and available at the beach area. If it gets worn out or stolen, replace it.

To reduce theft, we have found that stenciling, “FIRE DEPARTMENT PROPERTY” works well.

Regular inspections of equipment should be performed during the beach season, according to a schedule developed by the beach manager. Daily inspections are recommended; however, it is acknowledged that staffing, travel, and other considerations may make this infeasible for some sites. A reasonable inspection schedule should be developed, followed, and documented for all sites that considers such limitations. It is recommended that a checklist be used to document equipment inspections, including equipment checked, time/date of inspection, individual conducting the inspection, any notes or issues identified, and corrective measures taken.

**Conclusion**

With these new, simpler and less expensive recommendations, any jurisdiction can improve the safety of their beaches and waterfronts.

Please send us photos and locations of your new or existing beach warnings & water safety/rescue equipment, so that we may share best practices with others, or make recommendations for improvement.
If you have questions or require financial or other assistance to help you accommodate and implement these recommendations before a tragedy occurs, please contact the Great Lakes Water Safety Consortium via our website: [www.GreatLakesWaterSafety.org](http://www.GreatLakesWaterSafety.org).

**Committee Approvals:** Rhett Register, Robert Pokorney, Holly Alway, Dan Jordan, Jesse Schomberg, Leslie Dorworth, Megan Dodson, Matthew Warner, Gene Clark, Bob Pratt, Todd Breiby, and Susan Och.

**Committee Disapprovals:** None.