

Swift
Water
Response
Guide

2013

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Georgia
Association of
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Swift Water Rescue Teams in Georgia

In 2009 a group of disastrous floods affected several counties in northern Georgia, Alabama, and Tennessee. In Georgia alone, officials estimated the damage cost at **\$500 million**. The flooding in Georgia damaged 20,000 homes and businesses in 17 counties resulting in 10 deaths. Metro Atlanta swift water rescue teams saved hundreds of people from their homes, businesses, and cars. Local Fire Departments responded to hundreds of high-water incidents and were extended to the limits of their capabilities, equipment, and training. Every community in Georgia has potential for this type of disaster due to the proximity of warm waters in the Gulf of Mexico and Atlantic Ocean.

Rescues involving floods and moving water can be some of the most challenging and unpredictable environments encountered by firefighters. Rising water can overrun the local drainage systems resulting in multiple water rescue situations. Rescuers without proper training and equipment can quickly become overwhelmed due to the rapidly evolving nature of these incidents. Local municipalities could be held liable for fire department crews operating a scene without proper training and equipment. One firefighter in the Atlanta area had a near miss drowning during the flooding. Common mistakes made by untrained rescue crews are wearing turnout gear in water, tying themselves to ropes, and becoming victims themselves. Preparation for these events begins far in advance of the inclement weather.

In the wake of the 2009 floods, many local fire departments saw the need to expand their capabilities for responding to swift water emergencies. The Georgia Firefighter Standards and Training Council does not currently offer certification or compliance information for swift water rescue. Specially trained and equipped swift water rescue teams have the ability to create land and water based rescue systems in order to save victims trapped in dangerous waters. Several Metro Atlanta Fire Departments have certified instructors through Dive Rescue International, Rescue 3 International, and other commercial organizations. These departments have also purchased rescue boats and other specialized equipment. Individuals with instructor certification are qualified to teach swift water rescue I and II to department members. Fire department specialty teams are excellent candidates to be cross trained in swift water rescue due to the similarity of response capabilities and ropes proficiency. A training program can begin by proper certification and purchasing basic equipment complying with NFPA 1670, The Standard on Operations and Training for Technical Search and Rescue Incidents and NFPA 1006, Standard for technical Rescuer Professional Qualifications.

Fire Department personnel are encouraged to drive their territories after heavy rainfall to assess potential target hazards in your area. Potential hazards can be preplanned and assessed further by certified swift water team members in the same manner that you preplan structures for fire risk. Your municipal GIS division, public utilities, and **FEMA** are reliable resources to provide flood maps for identifying possible flood target hazards in your area. The floods of 2009 are not isolated to Metro Atlanta, and these emergencies can occur throughout Georgia at any time of year. Training a swift water rescue team and developing SOG's are effective ways to minimize the dangers associated with these types of events. In the supplement section of this document are useful links and information regarding establishing a swift water team in your department.

Your Fire Department

Sample S.O.G.

Water Rescue - Swift water - Floods

1 Purpose

- It is the purpose of this document to provide guidelines for conducting rescue/recovery operations involving water rescue in hazardous environments.

2 Responsibilities (Scope)

- All personnel: All department personnel shall follow these guidelines when responding to emergency incidents involving water rescue in hazardous environments.

3 Definitions

- **Cold Zone**- Considered anything greater than 15 feet from the water's edge
- **Warm Zone**- The warm zone begins 15 feet from the water's edge
- **Hot Zone**- Refers to all activities taking place in the water
- **NFPA 1006 Level I Technical rescuer**-This level applies to individuals who identify hazards, use equipment, and apply limited techniques specified in this standard to perform technical rescue operations (Level I takes the place of awareness and operations level swift water certification).
- **NFPA 1006 Level II Technical rescuer**-This level applies to individuals who identify hazards, use equipment, and apply advanced techniques specified in this standard to perform technical rescue operations (Level II takes the place of technician level swift water certification).
- **PPE swift water**- PFD, helmet, whistle, cutting tool, boots, gloves, and thermal protection.
- **River Left**- Side of river on left when the flow is to your back.
- **River Right**- Side of river on right when the flow is to your back.
- **Low Head Dam**-A Low head Dam is a dam of low height, usually less than fifteen feet that extends from bank to bank across a stream. Creates a deadly river wide hydraulic reversal.
- **Strainer**- Strainers restrict downstream flow trapping solids and not water. Strainers are the primary killer during flooding. Examples include trees, branches, fencing, storm drains, bridge abutments, undercut rocks, or possibly cars.
- **Water Rescue**- For the purposes of this SOG, water rescue shall be defined as any operation that involves rivers, creeks, storm drains, or any body of water moving or still.



4 Policies

- All personnel operating in the warm or hot zone shall wear proper PPE at all times!
- Only certified teams members shall operate in the hot zone.
- First arriving unit shall take command and perform a size up.
- Determine if this incident will be rescue or recovery.
- Inform the IC of all status changes to rescuer, victim, or rescue systems.
- Uncertified First arriving units may operate land based rescue operations if equipped with throw bags, PFD, and water rescue helmet. Upon arrival uncertified crews shall utilize reach or throw methods only.
- No personnel shall wear turnouts or fire helmets in the warm zone or hot zone.
- Do not drive apparatus into water if you can't see the road, the water is moving, the water is deeper than 4 inches, or if there is not a secondary egress for apparatus and crew.

5 Guidelines (procedures)

5.1 Assessment

- Size up the scene.
- Take command of the scene by first arriving unit.
- Assign a safety officer.
- Determine if water level is rising or falling.
- Secure the scene for bystanders and personnel.
- Secure a witness to determine the problem.
- Assess need for additional resources and call swift water response team early.
- Determine if this will be rescue or recovery based on all information.
- Identify immediate hazards. Floods may contain HAZMAT, utilities, IDLH, and swift water.
- Determine information about the victim.
 - Point and time last seen
 - Number of victims
 - Description of victims or vehicle
- Determine an action plan based on rescue or recovery operation and communicate this to all personnel involved.
- Take accountability of all personnel operating on the scene.



5.2 Planning

- Determine if there are an adequate number of trained personnel on scene to accomplish the objective in a safe and effective manner.
- Determine if the necessary equipment is already on scene or in route.
- Consider what type of response will best mitigate this emergency.
- Determine if this will be a reach, throw, row or go type of rescue.
- Complete a risk versus benefit analysis.
- Always have a backup plan.



5.3 Safety Considerations

- Assess all hazards upstream and downstream of the rescue.
- Set upstream and downstream safety on both sides if possible for all operations.
- All crew shall wear proper PPE at all times while in the warm or hot zone.
- Determine appropriate thermal protection based on water temperature.
- Consider additional equipment needs.
- Priorities 1. Self rescue 2. Rescue of Crew 3. Rescue of victim
- Do not wear turnouts or fire helmets in the warm or hot zone.
- Never put feet down if swept away. (potential for foot entrapment)
- Never tie a rope around a rescuer not wearing a quick release mechanism.
- Never tie a line across the water at a right angle.
- Always work on the upstream side of rope when working from shore.
- Upstream Sector observes for hazards floating downstream and for water level changes
- Downstream Sector prepares to rescue victims swept downstream with throw bags.
- Always communicate with command and other rescue crews all changes involving hazards or location of victim and rescuers.

5.4 Rescue Operations

- Implement the action plan for retrieval of the victim.
- The order of water rescue is from low risk to high risk.
 - ✓ Talk (LOW RISK) Talk the victim to safety if possible.
 - ✓ Reach (LOW RISK) Reach the victim with pike pole, ladder, stick, or hose.
 - ✓ Throw (LOW RISK) Throw a throw rope from stable platform on dry land. If the victim is able to grab the throw bag, the rescuer can pendulum the victim to the near shoreline.
 - ✓ Row (HIGH RISK) Utilize a rescue boat with trained operators to rescue the victim.
 - ✓ Go (HIGHEST RISK) only used when it is not possible to use a boat based operation.
 - ✓ Only rescuers with proper training and equipment may enter the water.
 - ✓ Rescuer must be aware of the action plan, objectives, hazards, and alternate plans.
 - ✓ Do not perform a breath hold surface dive to locate victims beneath the surface

5.5 Assess the Victims

- Assess the victim immediately for ABC's.
- Determine if the victim is entrapped.
- Determine if the victim can assist in his or her own recovery.
- If the victim is unconscious, rescue must be performed quickly.
- Once the victim has been moved safely to shore, transfer care to ALS personnel.
- Treat patient according to local protocols.
- If necessary transport patient to appropriate medical facilities.

5.6 Termination of Operation

- Take accountability of all personnel operating on the scene.
- Inventory equipment and re-stock supplies on apparatus.
- Perform a debriefing.
- Secure scene prior to departure.
- Return to service.
- Consider an after action review at a later date. (useful for training purposes)

References

- NFPA 1006, The Standard for Technical Rescuer Professional Qualifications 2008.
- NFPA 1670, The Standard on Operations and Training for Technical Search and Rescue Incidents 2009.
- Dive Rescue International, Swift water Rescue Trainer Series 1st edition 2002.
- Rescue 3 International, rescue3.com 2012.
- Loraine County Fire Department, Standard operating procedures for Swift water Rescue 2012.
- Rescue Net, rescuenet.com, Mark A Brown, Developing a Swift water Rescue Plan 1998.



Sample Swift water Equipment Checklist

Shore-Based PPE

- PFD (Coast Guard Type III or greater)
- Water rescue helmet
- Whistle
- Cutting Tool (blunt tipped knife preferred)
- Gloves
- Boots
- Throw-ropes
- Environmental protection

Water-based PPE

- PFD (Coast guard type V)
- Water rescue helmet
- Cutting tool (blunt tipped knife preferred)
- Swift water rescue board
- Fins/Mask/Snorkel
- Neoprene gloves
- Water booties or tennis shoes
- Throw-ropes
- Thermal protection (wet suit or dry suit)



Swift water Team Equipment

- Throw-bags
- Line gun
- Tag line buoy
- Multi-chambered inflatable boat (paddled or motorized)
- Rope rescue equipment and hardware
- Communication equipment
- Additional PFD's and helmets
- Inflatable or Rigid Rescue boat
- Additional swift water rescue boards