



Commonwealth of Pennsylvania
Fish & Boat Commission



WATER RESCUE FOR THE FIRST RESPONDER

NFPA 1670 – Awareness Level



STUDENT MANUAL

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PENNSYLVANIA WATER RESCUE PROGRAM

Pennsylvania's Water Rescue Program trains personnel in the most current techniques of boating and water safety. The program goals are to:

- Familiarize the rescuer with the proper procedures used in basic water safety and safe boat handling.
- Have the rescuer demonstrate proficiency in water rescue relative to individual capabilities.
- Provide the rescuer with competency in dealing with on-the-water emergencies.

The program was developed to train fire and rescue department personnel. However, through appropriate adaptation, the course can be used by police departments, park service personnel, or for members of any boating and water safety organization. Depending on need or geographic location, only one or a combination of courses may be necessary to fulfill an agency's training requirements. Students must be at least **18** years of age to participate.

WATER RESCUE FOR THE FIRST RESPONDER 1670 – AWARENESS LEVEL

Course Description

Emergency services personnel who respond to water incidents must recognize risks and dangers and take appropriate action to ensure personal, team, and scene safety. This course provides essential surface and swiftwater safety information for response personnel.

Course content will address the need for surface and swiftwater search and rescue - scene safety - assessment, control and site management - identifying resources and training levels - activation of the Emergency Response System - hazard identification and mitigation - and rescue vs. recovery operations.

Course content meets NFPA 1670 – Standards on Operations and Training for Technical Search and Rescue Incidents – Surface and Swiftwater Search and Rescue – Awareness Level. **Age** – minimum of 18 years of age to participate in any PFBC Water Rescue curriculum

Objectives

1. Cite who should have water rescue Awareness level training.
2. Identify drowning as a leading cause of accidental death in the United States.
3. List four reasons why civilian and rescue personnel drown.
4. Cite four types and sources of water emergencies.
5. Identify six water features and hazards.
6. Name the national organization responsible for developing water rescue guidelines (Awareness, Operations, and Technician level) for rescue personnel.
7. Name the organization that develops water rescue curriculum and training programs for the Commonwealth of Pennsylvania.

8. Discuss scene safety and management tactics a first responder can do prior to the arrival of a water rescue team.
9. Identify and describe how to properly don a personal flotation device.
10. Cite why turn-out gear is NOT to be worn by water rescue personnel working in the hot zone.
11. Discuss the information needed by the Emergency Response System (9-1-1).
12. List four planning considerations for water rescue.
13. Cite the difference between a rescue and recovery operation.

INTRODUCTION

This program is designed to meet NFPA 1670 – Standards on Operations and Training for Technical Search and Rescue Incidents – Surface and Swiftwater Search and Rescue – Awareness Level. The program goal is to provide essential water safety information to first responders (individuals who arrive at a water emergency first).

Program Components:

- The need for surface and swiftwater search and rescue
- Scene safety, assessment, control and management
- Evaluation of potential and existing water hazards
- Resources needed to perform water operations
 - Operations and Technician level personnel and teams
- Personal and team safety measures
 - Training
 - Personal Protective Equipment (PPE)
- Activation of the Emergency Response System (9-1-1)
- Rescue vs. recovery operations
- Information regarding Operations and Technician level training programs are provided to introduce the learner to the many aspects of water rescue training.

THE NEED FOR WATER SEARCH AND RESCUE

Who Should Have Training?

Anyone who works on, around, or near water must have training. This includes:

- Emergency services personnel (Fire – EMS – Law Enforcement)
- Municipal and utility employees
- Outdoor professionals

Drowning and Water Safety Data

Drowning is a leading cause of accidental death in America.

- By examining drowning data from a variety of sources, the scope and magnitude of drowning and water related injuries can be obtained.



According to the Centers for Disease Control and Prevention Water-Related Injuries: [Fact Sheet](#), from 2005 - 2014 there were 3,536 unintentional drowning in the United States. Combine that number with the 332 people who also died in boating related incidents and the number of drowning climbs to 3868. This number translates to almost ten Americans everyday across the United States losing their lives to water.

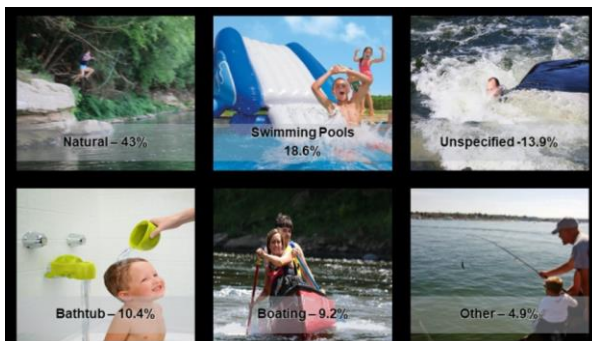
Drowning is the second leading cause of unintentional death for children 1- 14 years of age. It is the fifth leading cause of unintentional injury death for people of all ages.

- For every child who drowns, another five (5) received emergency care for non-fatal submersion injuries. Fatal drowning rates of African American children are significantly higher than white children in the same age range. Possible contributing factors could include limited access to pool, lack of desire to learn how to swim and choosing water related activities.
- Males accounted for nearly 80% of all drowning.

10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States - 2017

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Unintentional Suffocation 1,106	Unintentional Drowning 424	Unintentional MV Traffic 327	Unintentional MV Traffic 428	Unintentional MV Traffic 6,697	Unintentional Poisoning 10,478	Unintentional Poisoning 15,032	Unintentional Poisoning 14,707	Unintentional Poisoning 10,581	Unintentional Fall 31,190	Unintentional Poisoning 64,795
2	Homicide Unspecified 139	Unintentional MV Traffic 362	Unintentional Drowning 125	Suicide Suffocation 280	Unintentional Poisoning 5,030	Unintentional MV Traffic 6,871	Unintentional MV Traffic 5,162	Unintentional MV Traffic 5,471	Unintentional MV Traffic 5,584	Unintentional MV Traffic 7,667	Unintentional MV Traffic 38,059
3	Unintentional MV Traffic 90	Homicide Unspecified 129	Unintentional Fire/Burn 94	Suicide Firearm 185	Homicide Firearm 4,391	Homicide Firearm 4,594	Suicide Firearm 3,098	Suicide Firearm 3,937	Suicide Firearm 4,219	Suicide Firearm 5,996	Unintentional Fall 36,338
4	Homicide Other Spec., Classifiable 76	Unintentional Suffocation 110	Homicide Firearm 78	Homicide Firearm 126	Suicide Firearm 2,959	Suicide Firearm 3,458	Suicide Suffocation 2,562	Suicide Suffocation 2,294	Unintentional Fall 2,760	Unintentional Unspecified 5,125	Suicide Firearm 23,854
5	Undetermined Suffocation 56	Unintentional Fire/Burn 95	Unintentional Suffocation 36	Unintentional Drowning 110	Suicide Suffocation 2,321	Suicide Suffocation 3,063	Homicide Firearm 2,561	Suicide Poisoning 1,604	Suicide Suffocation 1,631	Unintentional Suffocation 3,920	Homicide Firearm 14,542
6	Unintentional Drowning 43	Unintentional Pedestrian, Other 88	Unintentional Other Land Transport 25	Unintentional Other Land Transport 66	Unintentional Drowning 469	Undetermined Poisoning 887	Suicide Poisoning 1,089	Homicide Firearm 1,447	Suicide Poisoning 1,459	Adverse Effects 2,902	Suicide Suffocation 13,075
7	Undetermined Unspecified 37	Homicide Other Spec., Classifiable 49	Homicide Suffocation 15	Unintentional Fire/Burn 56	Suicide Poisoning 463	Suicide Poisoning 788	Undetermined Poisoning 792	Unintentional Fall 1,248	Homicide Firearm 824	Unintentional Poisoning 2,871	Unintentional Suffocation 6,946
8	Homicide Suffocation 26	Homicide Firearm 44	Homicide Cut/pierce 14	Suicide Poisoning 39	Undetermined Poisoning 280	Unintentional Drowning 479	Unintentional Fall 522	Undetermined Poisoning 887	Unintentional Suffocation 811	Unintentional Fire/Burn 1,278	Unintentional Unspecified 6,606
9	Unintentional Natural/Environment 18	Unintentional Natural/Environment 34	Unintentional Firearm 14	Unintentional Poisoning 39	Homicide Cut/pierce 266	Homicide Cut/Pierce 404	Unintentional Drowning 397	Unintentional Drowning 451	Adverse Effects 773	Suicide Poisoning 1,111	Suicide Poisoning 6,554
10	Three Tied 16	Unintentional Firearm 31	Two Tied 13	Unintentional Suffocation 35	Unintentional Fall 212	Unintentional Fall 351	Homicide Cut/Pierce 337	Unintentional Suffocation 441	Undetermined Poisoning 732	Suicide Suffocation 919	Adverse Effects 4,459

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



In 2017, the CDC identified the following breakdown of drowning by settings. This number ONLY reflects fatalities, not the total number of water related incidents and injuries.

Common Causes of Drowning and Water Emergencies

Weak or Non-Existent Swimming Skills

- Take formal swimming lesson and learn to swim from organizations like the American Red Cross and YMCA.

Lack of Barrier Separation

- Look around your community and see how many pools have a physical barrier surrounding them to prevent access. Many municipalities have guidelines for installation of above and in-ground swimming pools. This would include fencing (design, height, bar width, gates, and latches). Unfortunately, the same may not apply to inflatable and kiddie pools that can be purchased from a retailer and immediately set up in a back yard.
- Additional safety items for pools and spas include alarms, pool safety covers, immediately accessible phone, water safety equipment (reaching and throwing devices).

Swimming in Unsupervised Areas

- Potential sites are limitless (pools, ponds, streams, lakes, rivers, and ocean). Other sources include areas around a home (bath and hot tubs, toilet), water containers (drums, large buckets), fountains, and anything that can collect and hold water.
- Supervision includes trained professionals (lifeguards), parents and caregivers, and the public.
- Additional resource information can be obtained from the [National Drowning Prevention Alliance](#) – Layers of Protection Around Aquatic Environments to Prevent Child Drowning.

Failure to wear a PFD

- Wear a personal flotation device – USCG statistics document that approximately 85% of boating accident victims who drown were NOT wearing a PFD.

Not Recognizing Drowning

Dr. Frank Pia describes an individual in the water showing the *instinctive drowning response* as follows.

- The individual's mouth is above the surface and they inhale and exhale quickly. Yelling or calling for help will be rare since the instinctive drowning response of the body is to breath.
- The head will be tilted back and the mouth open as the victim attempts to breath. They push down on the water surface with their arms attempting to keep themselves above the surface to breath. They vertically bob in one location and do not move in any direction.
- Voluntary movements such as waving for help, swimming, or reaching a rescue or support device is overridden by the body's natural defensive mechanism to breath.
- **Note** – a *distressed swimmer* (weak or fatigued) can/may make movement towards a rescue device and are generally able to hold onto the device, be supported and towed back to shore. They are unable to reach safety on their own.

- Recognition of the instinctive drowning response is important because the individual may only be at the surface less than 60 seconds.
- Source: <http://www.pia-enterprises.com/>

Lack of Boating Education and Skills

- Boating is a favorite American pastime. With so many boaters on our waters, rescue personnel will inevitably respond to boating incidents within their jurisdiction.
- There are over 12 million registered vessels in the United States. Statistics show that approximately 74% percent of deaths occurred on boats where the operator had received no formal boating safety instruction.
- Operator inattention, improper lookout, operator inexperience, machinery failure, and excessive speed rank as the top five primary contributing factors to accidents.
- Boating injuries and fatalities can be caused by many factors such as: capsizing, falls overboard, fires or explosions, water sports mishaps, collisions, being struck by the boat or propeller, carbon monoxide exposure, electrocution, swimming away from the vessel, and numerous other factors.
- Take a boating safety education course approved by the National Association of State Boating Law Administrators (NASBLA). Other providers include the U.S. Coast Guard Auxiliary, U.S. Power Squadron, state provider (i.e. Pennsylvania Fish and Boat Commission), and others.
- The American Canoe Association and the U.S. Sailing Association are examples of other boating safety training and resources.
- Source: [2018 Recreational Boating Statistics – USCG](#)

Lack of Aquatic Water Knowledge

- The power of water is unrelenting and continuous. From the backyard swimming pool to ponds, lakes, rivers, oceans, and ice, requires individuals and rescue personnel to understand the risks and hazards associated with each. Water comes in many different forms (flat, moving, swift, solid (ice), immediate (flash flooding), warm, cold, deep, and shallow).
- Flash flooding is the number one weather related killer. Driving across flooded roadways and walking near the water are the two primary reasons why people drown during a flash flood.

Alcohol and Drugs

- USCG in 2018 found that alcohol was a contributing factor in 19% (almost 1 in 5 deaths) of all fatal boating accidents.
- The CDC indicates that alcohol use is involved in up to 70% of deaths associated with water recreation among adolescents and adults.
- Alcohol and water do not mix. Remember just because you are not drinking does not mean that the other boaters on the water are not. Always watch for unsafe boat operations or acts and report to law enforcement personnel.

Cold Water Shock and Hypothermia

- 1-10-1, according to Dr. Gordon Giesbrecht, is the effects of cold water immersion on a person who falls into cold water.

- Cold shock causes immediate deep grasp and hyperventilation that lasts for approximately 1 minute.
- 10 minutes is the amount of time before cold incapacitation where a person will lose their ability of purposeful movement to self-rescue.
- 1 hour before becoming unconscious due to hypothermia.
- Critical factors for surviving cold water include: wearing a USCG approved PFD in accordance to its label, dressing for weather and water conditions, using the Heat Escape Lessening Position (H.E.L.P) or Huddle position to reduce body heat loss, filing a float plan (where you are going and specific information regarding the trip), having and knowing how to use water rescue devices and equipment, and being able to communicate with the Emergency Response System (9-1-1).
- Additional information can be found on [Cold Water Boot Camp](#) web site.

Rescuers Drown

The following statistical data from Dr. Rita Fahy of the NFPA is fire fighters specific; it does not include all EMS personnel. Dr. Fahy clustered the 703 fire fighter fatalities by cause or nature of injury between the years 2009 - 2018.

703 Firefighter Deaths		
RANK	CAUSE	NUMBER
1	Sudden Cardiac Death	309
2	Internal Trauma/Crushing/Fracture	225
3	Asphyxiation/Smoke Inhalation	62
4	Burns	45
5	Stroke/Aneurysm/Embolism	29
6	Gunshot	10
7	Drowning	6
8	Electrocution	3
9	Heat Stroke	3
10	Drug Overdose	2
11	Other	9

2009 – 2018 Data Courtesy of Dr. Rita F. Fahy – Manager, Applied Research NFPA

Common causes of drowning and water related emergencies include:

Not wearing a Personal Floatation Device (PFD) and wearing inappropriate personal protective equipment (PPE) in the hot zone.

- Establish Standard Operational Guidelines requiring the wearing of a PFD and appropriate mission specific PPE.
- Turn-out gear has no place in the hot zone. It is heavy, bulk, and significantly reduces the wearer's ability to be able to swim.

Overestimating Skills

- Water rescue is low frequency but high risk. An individual may feel they are a strong swimmer, but underestimate the power of swiftwater and effects of cold water shock.
- Progressive water rescue training under the guidance and supervision of instructors can greatly improve rescuers understanding water. Rescuers develop competence and hone skills through training and practice.

Underestimating Power and Dynamics of Water

- Learn how to read water and use appropriate terminology when describing features and hazards. Engage in training up to your capabilities to gain water knowledge experience.
- Underestimating effects of cold water. Utilize mission specific PPE to engage in the hostile environment

Inadequate Training

- The AHJ determines the need for water rescue and trains personnel. The level of training (Awareness, Operations, and Technician) directly influences how an agency will respond and engage at a water rescue incident. **At a minimum, all personnel train to the Awareness level.**

Lack of Equipment

- Invest in PPE first, then identify equipment to support shore, boat and direct contact rescues.

Insufficient Backup

- Identify mutual aid resources and establish call-out protocols. The Water Rescue Resource and Contact List Forms at the end of this manual will help in the planning process.

Improper Incident Scene Command and Control

- Follow the Incident Command System. Establish an IC and safety officer at every incident. Develop and implement an accountability system. Task specific water rescue resources to perform the rescue. Have adequate backup in place and onsite medical personnel for both the victim and rescuer.

WATER EMERGENCIES

Types and Sources

This next section will explore the many sources of water emergencies and their dangers and hazards.

Water related incidents can occur at any time. Anyone can become involved in a water emergency at some point in their career. Rescue professionals must identify actual and potential sources of water emergencies within their communities (see *Hazard Survey Form*). They must plan and prepare to respond to multiple types of emergencies which could include:

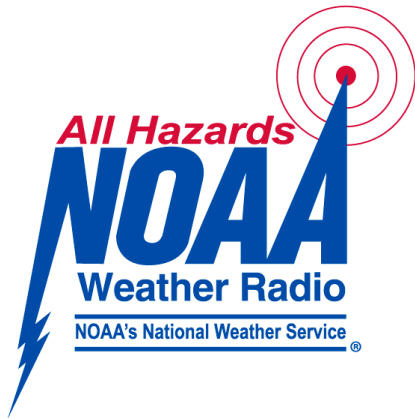


- Single or multiple victims
- Entrapments (vehicle, house, dam, strainer, undercut, foot)
- Recreational (boating, swimming, aquatic sports)
- Animal rescue
- Flat water (ponds/lakes) and moving water (streams and rivers)
- Swiftwater and flash flooding – Ice - Tidal
- Mud - Some areas are always prone to mud because of slope, soil conditions, and drainage.
- Industrial - Sites where water is used as part of a manufacturing process, the generation of power, or pits where contaminated water is stored.
- Hazmat – All water should be considered polluted and may contain water borne illnesses such as Giardia, meningitis, hepatitis just to name a few. Raw sewage, chemicals, petroleum products may be dumped illegally or occur when facilities overflow and spill into a water source.
- Criminal - All scenes should be considered a potential crime until proven otherwise. Individuals use water as places to dispose of evidence. Some areas are common sites for suicides.
- Homeland Security and Weapons of Mass Destruction (WMD) – Large recreational events (regattas, festivals, sporting events) draw many users. These events can be soft targets for terrorists.

Weather and Water Information

The National Weather Service (NWS) will issue watches and warnings for severe weather.

- Watch – means conditions are right and the severe weather potential exists. Stay aware of weather conditions through direct observations, broadcasts, and technology. Be prepared to react.
- Warning – dangerous weather is occurring or is imminent based on Doppler radar information. Take actions and move to safety.



- NOAA All Hazards Weather Radio is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. The NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.
- NOAA All Hazard Weather Radio web site: <http://www.nws.noaa.gov/nwr/>

Flood Stage and Flash Flooding

Flood stage is an established gauge height for a given location above which a rise in water surface level begins to create a hazard to lives, property, or commerce. The issuance of flood (or in some cases flash flood) warnings are linked to flood stage (NOAA). The United States Geological Service (USGS) provides current water data for the nation at the following link: <http://waterdata.usgs.gov/usa/nwis/rt>. They have more than 1.9 million sites to collect surface water data. Data is collected by automatic recorders and manual field measurements. Rescue professionals can obtain current information for their geographic area from the USGS Surface-Water Data for the Nation web site: <http://waterdata.usgs.gov/nwis/sw>

- The U.S. Geological Survey WaterAlert service sends e-mail or text (SMS) messages when certain parameters, as measured by a USGS real-time data-collection station, exceed user-definable thresholds. For the rescue professional, messages will be delivered to your email or smart device alerting you of the water conditions.

Flash flooding is a rapid rising of water in a short period of time and can occur from thunderstorms, heavy rains, hurricanes, snow melt, ice jams, dam failure, and numerous other reasons. Flash flooding can quickly trap individuals who are not aware of the fast rising water condition.

According to the National Oceanic and Atmospheric Administration (NOAA), flash flooding is the number one weather-related killer in the U.S.



- Over 50% of flash flooding deaths occur when vehicles are driven into hazardous flood waters. Most vehicles can be swept away in 18-24 inches of moving water. Cars will float when the force of the water is greater than the force of friction. Sand and mud reduce the friction force of gravity holding the car in place.
- <https://weather.com/safety/floods/news/flash-flooding-vehicle-danger-20140717>
- People who drive across flooded roadways do not know if the roadway is intact. The murky swift water can conceal hidden hazards below the surface.
- Communities can reduce this problem by utilizing barricades, road closures, and stationing personnel to control and direct access during flooding. Public flash flooding safety campaigns such as NOAA's "Turn Around, Don't Drown®" provides outstanding information regarding this significant hazard.

- Hyperlink to “Turn Around Don’t Drown” - <https://www.weather.gov/safety/flood-turn-around-dont-drown>
- Walking into, or near flood waters is the second highest reason for flood-related deaths.

Water Dynamics and Terminology

Rivers classifications:

- Sections of rivers are classed on the International Scale of River Difficulty (Class I – Class VI). The classifications are based upon gradient, volume, river features, constrictions, and numerous other factors.



River classes can change based upon specific locations on a river.

For example, one river section may be Class I and around the bend the river may be a Class IV drop. River classification can increase or decrease with water volume fluctuations and water temperature. Use the scale as a general guide.

River currents are caused by water travelling downhill. Gradient, volume, and features influence them. Laminar flow is the fastest water travelling in a straight line with no restrictions down a river. NFPA 1006 defines surface water rescue as water flowing at less than 1 knot (1.15 mph). Water flowing faster than 1 knot would be considered swiftwater. Helical flow is a cork screw or spring like current found along the shoreline constantly rolling and pushing out into the laminar flow. This spiral water flow can sweep a person off their feet and push them into the main current making swimming back to shore a challenge.

- River left – Always refers to the left side of a river looking downstream.
- River right – Always refers to the right side of a river looking downstream.
- Inside bend – Slower moving water forming an eddy. Area will usually be shallow, hold and circulate debris. It can develop strong dangerous eddies in high water and make swimming escape challenging or impossible without assistance.
- Outside bend – Faster and deeper water, and will push the rescuer or boat into the bank. The bank can be undercut, have exposed roots or strainers forming entrapment situations.
- Strainer – Manmade or natural obstructions such as a tree, root system, fencing, guiderails. Obstruction allows water to pass through but stop and hold objects such as boats and people. Bouncing twigs may indicate a partially submerged strainer. Vehicles in the water are undercut strainers.
- Undercuts (rocks and banks) - These features are usually well-known hazards on a river and often fatality sites. Dimple Rock is a well-known example on the Youghiogheny River at Ohiopyle State Park. Riverbanks, especially outside bends, constantly eroded by moving water. The bank become undercut and creates entrapments. Trees can topple into the water from the undermining and create strainers.

- Sieves – Water flowing through a narrow or contracted passage such as a crack in rock. Individuals and boats can wedge and pin in these restricted passages. Many rivers have well known sieves identified in guidebooks and paddling web sites.
- Eddy – A current created behind a rock or other obstruction (i.e. house or car) that flows in a circular upstream direction. Flow is opposite to the direction of the main laminar flow. The visual separation between an eddy and the main current is the eddy line. The line is narrow closest to the obstruction and becomes wider downstream.
- Pillow - Water piles up on the upstream side of an obstruction. A visual pillow usually means the object is solid. Lack of a pillow in front of an object means it is undercut. If a rescue boat is sideways in the current and about to hit the object creating the pillow, the boat team must lean into the object. This is referred to as high siding, meaning the crew immediately moves to the high side of the boat. If they lean away (towards the low side), the upstream gunwale will dip under the water and immediately flip the boat.
- Upstream “V” - Formed by an obstruction in water creating a “V” that points upstream. Depending upon obstruction depth, the “V” may be right on top of the feature or if deeper the “V” would be downstream.
- Downstream “V” – Formed when water is funneled (constricted) between two obstructions and forms a “V” pointing downstream. A series of multiple standing waves are known as haystacks or wave trains. In urban areas, they may indicate multiple submerged vehicles.
- Low-Head-Dams - Create dangerous recirculation currents at the base of the dam known as a hydraulic. As water flows over the dam, a depression forms. Water downstream rushes back towards the dam face to fill in this depression. This recirculation of water is often called a “drowning machine.” The features of a hydraulic include:
 - Backwash – Water flowing back towards the dam face.
 - Boil Line – Distinct feature that separates the backwash from the outwash. Water in this area appears to bubble like boiling water in a pot.
 - Outwash – Water below the boil line flowing downstream.
 - Low-Head-Dams may or may not be marked with signs or aids to navigation warnings, but to the trained eye, they are identified by a horizontal line (-----) going across the river from upstream.
 - Water in the backwash can be highly aerated. Aerated water may not support a person at the surface. Boats that cross the boil line will have a significant reduction in performance with both prop and jet drive units.
 - Low-head-dam rescue is one of the most dangerous types of rescues. Without planning and training, rescuers can quickly become victims themselves.

What urban hazards do you see?



- **Urban hazards** - can be almost anything. Survey your jurisdiction and picture what it would be like if completely covered with water. Common urban hazards encountered during flash flooding or flood management include:
 - Structures, vehicles, road signs, parking meters, Jersey barrier, guide rails, fences, trash container, and posts
 - Utilities (electric and gas) – Overhead lines, meters, residential and commercial electrical systems
 - Intake pipes, culverts, manholes
 - Flow diversion structures (sluiceways) – Manmade features that channelize water quickly from an area.
 - Industrial hazards (Hazmat) – Chemicals from industry, petroleum products, sewage, vapors, and other containments. Entering any flooded waterway exposes rescuers to containments. Wear mission specific PPE and decontaminate personnel and equipment. Take a Hazmat course to understand and identify the risks and hazards.
- **Ice** – Many areas must plan and respond to ice related emergencies. How ice forms, the factors that influence strength and thickness, the ability to identify different types of ice, and finally how to perform an ice rescue are critical technician rescue skills.
- **Surf** – Tides are predicable rise and fall of water in the ocean. When tide is on the rise, it creates a flood current that moves towards shore. High tide is the peak of the flood current. Once high tide occurs the ebb current, (outgoing tide) will start. This current moves away from shore. The weakest tidal currents occur between the flood and ebb currents are called slack tide. The strongest currents occur near the time of high and low tides.
 - Tidal range is the height between low and high tide. Most areas will have two high and low tides in a lunar day (24 hour and 50 minute period).

- Tidal effects are influenced by the shape of the land and how water may be funneled through an area. Depth of the water, wind, and weather (tropical storms and hurricanes) can have significant impacts on tidal strength.
- Tropical storms and hurricane paths are projected and alerts (watches and warnings) are posted. Rescue personnel may be called upon to assist with evacuations of areas prior to their impact. Unfortunately, some individuals think riding out the storm will be fun, or that it will not be as bad as projected. Many have lost their lives in recent events like Hurricane Katrina and Sandy. Entire communities have been destroyed by storms through tidal surges and wave impact.
- There are many hazards associated with surf. One often misunderstood hazard is a rip current. Anyone working or playing in surf must understand how rip currents form, how to visually identify, and how to exit a rip current if caught.

The United States Life Saving Association (USLA) and NOAA produced an excellent PSA video on rip current safety. <https://youtu.be/ytyLMkV2iu0>

NOAA Tide Predictions charts:

https://tidesandcurrents.noaa.gov/tide_predictions.html



NFPA 1670 – Standards on Operations and Training for Technical Search and Rescue Incidents – Surface and Swiftwater Search and Rescue – Awareness Level.

Water rescue has evolved over the years through the development of nationally recognized training programs and standards organizations such as the National Fire Protection Association (NFPA).

The NFPA provides and advocates consensus codes and standards, research, training, and education. NFPA 1670 Standards on Operations and Training for Technical Search and Rescue Incidents identify the levels of functional capabilities that an Authority Having Jurisdiction (AHJ) should meet at a minimum level. This includes:

- Hazard identification
- Risk management
- Training level of personnel, and
- Availability of internal and external resources

About NFPA - <http://www.nfpa.org/about-nfpa>

The PA Fish & Boat Commission swiftwater rescue training programs utilizes the following NFPA resources to design and develop its curriculum.

- ✓ *NFPA 1670 – Standard on Operations and Training for Technical Search and Rescue Incidents*
- ✓ *NFPA 1006 – Standard for Technical Rescuer Professional Qualifications*
- ✓ *NFPA 1983 – Standard on Life Safety Rope and Equipment for Emergency Services*
- ✓ *NFPA 1952 - Standard on Surface Water Operations Protective Clothing and Equipment*
- Ultimately, the Authority Having Jurisdiction is responsible for enforcing the code or standard requirements, approving equipment materials, an installation, or a procedure.
- The AHJ determines to what level of functional capability the organization prepares. NFPA 1670 assists AHJ's in this decision making process. The AHJ is **STRONGLY** encouraged to follow these base line standards for water search and rescue. For additional information on NFPA Codes and Standards visit NFPA.org

NFPA 1006 Standard for Technical Rescuer Professional Qualifications

NFPA 1006 - Standard for Technical Rescuer Professional Qualifications establishes general job performance requirements for Awareness, Operations and Technician levels. as well as specific job performance requirements for special rescue operations.

NFPA 1006 is directed specifically to the rescuer and what they should be able to demonstrate in terms of the minimum job performance skill sets to work safely and efficiently in specialized disciplines (i.e. Surface Water and Swiftwater Rescue). An AHJ can also require standards beyond the level of NFPA 1006.

The candidate must meet the CORE requirement plus the discipline level(s). The candidate must be evaluated through training documentation, written tests, and individual skills testing through a 1006 compliant testing organization. In the Commonwealth of Pennsylvania, The PA State Fire Academy is responsible for the implementation of firefighter training and certification developed in accordance with and consistent to established standards. The Office of the State Fire Commissioner (OSFC) is the certifying agency within the Commonwealth of Pennsylvania. Visit their web site and search for “**Certification Levels Presently Offered**” and click on the certification level. Here you will find certification process information, pre-requisites, study guide, application, skill sheets and candidate handbook.

Upon successfully completion of this process, the individual will be certified and listed on the Pro Board National Registry.



The Authority Having Jurisdiction must determine the following:

1. Do they want to establish a team (yes/no)?
2. Follow recommended standards and guidelines established by the NFPA and Type Team Level (I-IV). The National Incident Management System (NIMS) provides guidelines for resource typing by establishing a comprehensive, integrated national mutual aid and resource

management system that provides the basis to type, order, and track all (Federal, State, and local) response assets. Type I teams have the highest capability level while a Type IV team is much smaller and has limited capabilities based upon personnel, equipment, and training. For additional federal information, search FEMA for “Swiftwater/Flood Search and Rescue Team Typing.” In Pennsylvania go to the PA Fish and Boat Commission website and search “VRSR Water Rescue Guidelines.”

3. Identify who should have training. The challenge for the AHJ in the Commonwealth of Pennsylvania is volunteer recruitment. Senate Resolution 6 report identified that the number of volunteer firefighters has been significantly declining. In the 1970’s there were approximately 300,000 volunteers – early 2000’s approximately 60,000 and in 2018 approximately 38,000. Pennsylvania has lost almost 90% of its volunteers!

Pennsylvania Fish and Boat Commission - Swiftwater Rescue Training Courses



To complete all PFBC training at the BASIC level 67 hours. To become an INSTRUCTOR in all disciplines would be an additional 72 hours for a total of 139 hours. Besides core training, rescue personnel participate in drills, large-scale exercises, annual skills qualifications requirements and respond to incidents.

Commission training opportunities include:

- Water Rescue for the First Responder – Meets NFPA 1670 Awareness Level
- Water Rescue and Emergency Response (WRER) – Meets NFPA 1670 Operations - Level
- Emergency Boat Operations and Rescue – Meets NFPA 1670 Technician Level
- Advance Line Systems Rescue – Meets NFPA 1670 Technician Level
- Ice Rescue and Emergency Response – Meets NFPA 1670 Technician Level

The Commission’s core water rescue values are based upon the acronym SAFE RESCUE. For any rescue to be successful, rescue personnel must understand these core values.

- S** – Self-rescue skill mastered
- A** – Adequate backup is critical
- F** – Follow the rescue sequence (self-rescue, shore, boat, direct/go, helicopter)
- E** – Equipment use practiced

- R** – Rescue and recovery approached with distinction
- E** – Evaluate personal and team ability
- S** – Stress planning and practice
- C** – Cooperation between everyone involved in rescue operation
- U** – Understand the power of water
- E** – Environmental conditions complicate a rescue

STUDENT REQUIREMENTS			
			
Strenuous Training in Extreme Conditions	Physically Fit	Strong Swim Skills	18 Years of Age or Older
What you need to know!			

Student must be prepared to engage in strenuous activities in extreme weather and water environments. They must be in good physical condition and able to swim. Be at least 18 years-of-age to take and participate in any of the curriculums.

Students must not have a medical condition that could foreseeably jeopardize his/her safety during participation or be aggravated by participation.

4. Funding and Equipment – Like all rescue disciplines, specific equipment is needed to engage in water rescue operations. The most important is appropriate personal protective equipment (PPE) for personnel. The VRSR document will identify the MINIMUM equipment needed for a typed team. Assets must be moved from point A to B. This requires specialty vehicles, cargo and boat trailers.
5. Mutual Aid (Logistics and Support) - Have mutual aid agreements with agencies that can assist when requested. Agencies can provide personnel, equipment, and technical advisors. Typed (I – IV) and credentialed teams meet specific criteria providing the AHJ with known team capabilities and resources. SAR resources can include:
 - a. VRSR and Rapid Intervention Teams
 - b. SAR Dogs and Animal Rescue Teams (ART)
 - c. Aerial – Helicopter Aquatic Rescue Team (HART) and Unmanned Aerial Vehicles (drones)
 - d. Public Safety Divers
 - e. Medical – Local EMS assets of Special Medical Response Team (SMRT)
 - f. Night Operations – Scene illuminations, night vision capabilities, thermal imaging and Forward Looking InfraRed (FLIR)
 - g. Force Protection – Law Enforcement
 - h. Rehab and Decon



This section identifies actions and responsibilities a first responder should do until water rescue response resources arrives.

The information follows the Incident Command System (ICS) and is general in detail. All first responders need to understand the ICS. Information regarding ICS can be found on the ICS Resource Center @ training.fema.gov.

A first responder should follow these **general** scene guidelines:

- Activate the Emergency Response System if not already activated; dial 9-1-1. Request specific rescue assets and provide information for responding water rescue team. Provide a call back number and hang up after instructed by 9-1-1 dispatch.
- During flash flooding, multiple water rescue calls will occur. Establish guidelines to determine the level of urgency. For example, individuals stranded on one side of a river would be a lower priority than individuals on top of vehicle swept downstream and pinned against a tree.
- Ensure scene safety (personal, team and bystander). Evaluate the scene for risks and hazards and take steps to mitigate, manage and control. Assess the scene and advise responding units of the following information:
 - Nature of the emergency
 - Brief description of the incident and the scene
 - Number of individuals (victims)
 - Point Last Scene (PLS) or Last Known Point (LKP) of the victim(s)
 - Exact location of incident command post, resource staging and challenges of site access
 - Address/road
 - Name of river/lake/access
 - Shore (river right or left) - right or left always refers to looking downstream
 - Distance from a known point
 - GPS coordinates
 - Scene hazards
 - Known – visible
 - Potential (rising water) – Monitor by placing a stick at the edge of the water and observe if the water is rising or falling. A fixed object (vehicle, house) in the water can be used to monitor changing water conditions. Use apps to track and project water volume from gauge readings.



- HAZMAT concerns identified – Always consider water contaminated, especially during flash flooding. Don water rescue PPE to reduce and mitigate exposure.
- Utilities (electrical/gas)

ICS Task <ul style="list-style-type: none"> ○ <u>ICS Form 208 – Site Safety and Control Plan</u> ○ <u>ICS Form 215 A – Incident Action Plan Safety Analysis</u>

- Identify Zones
 - Hot Zone (most dangerous area) – highest level trained personnel using mission specific PPE. Must have the ability to self-rescue and directly engage in the rescue operation. Includes the water and 15-20’ from the water. Area should be visually restricted and access controlled.
 - Warm Zone – transition area between the hot and cold zone. Staging and decontamination of equipment occurs here. PPE must include at a minimum a PFD and helmet and thermal protection.
 - Cold Zone – support area for the incident. Can contain the command post, medical, media, and rehabilitation area. Ensure incident command is established.
- Appoint incident commander (IC) and safety officer. The IC will appoint general and command staff positions. An Incident Action Plan (IAP) strategy for managing the incident is developed.

ICS Tasks <ul style="list-style-type: none"> ○ ICS Form 201 – Incident Briefings ○ ICS Form 202 – Incident Objectives ○ ICS Form 203 – Organization Assignment List ○ ICS Form 204 – Assignment List ○ ICS Form 205 – Incident Radio Communications Plan ○ ICS Form 206 – Medical Plan ○ ICS Form 209 – Incident Status Summary ○ ICS Form 211 – Check in List ○ ICS Form 214 – Unit /Activity Log

- Establish accountability system
 - Responding personnel and resources must report to the incident control command post or staging area and be checked in. Agency representatives are briefed and assigned operational tasks.

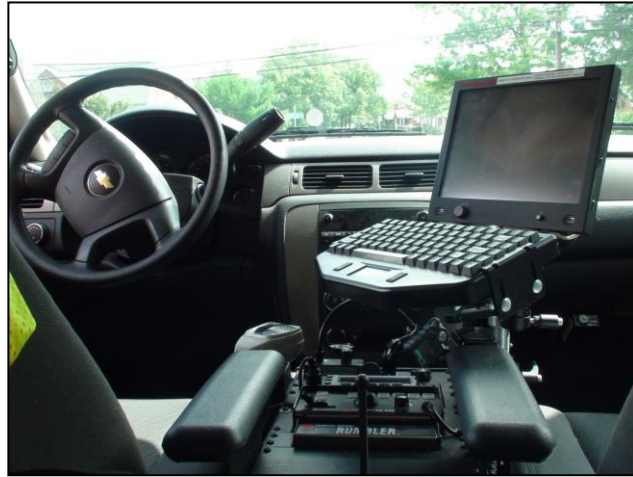
ICS Tasks <ul style="list-style-type: none"> ○ ICS Form 211 – Check in List ○ ICS Form 214 – Unit/Activity Log
--

- Provide onsite medical (2 units recommended - one for victim and support of rescue team personnel). Medical is responsible for developing the Medical Plan and providing emergency medical treatment for response personnel and victims.

ICS Task <ul style="list-style-type: none"> ○ ICS Form 206 – Medical Plan
--

- Establish a communication plan - The ability to communicate with command and operational personnel is critical. Have multiple communication sources (radio, smart phones, ham radio and computers). Utilize smartphone application/PDF's and browser features:

- Weather and radar
- Emergency alerts
- Hazardous materials
- River flows
- Maps and navigation
- Google Earth
- Skype
- Voice recorder
- Camera and video
- Note pad
- GPS
- Contact lists
- Email/phone
- Flash light



- Remember to:
 - Charge and conserve battery life by turning off unneeded features that are running in the background.
 - Internet access is not always available. Have PDF's saved on phone.
 - Protect phone from the elements with rugged cases and waterproof containers (cases, pouches, boxes).


ICS Tasks

- ICS Form 205 – Incident Radio Communication Plan

- Communicate with the victim(s)
 - Keep victim(s) calm and out of the water
 - Communicate directly with victim using a whistle, hand signals, megaphone, lights, or cell phone. Almost everyone has a cell phone today. Rescue personnel can obtain the victims phone number multiple ways and talk directly to them.

FIRST ON SCENE

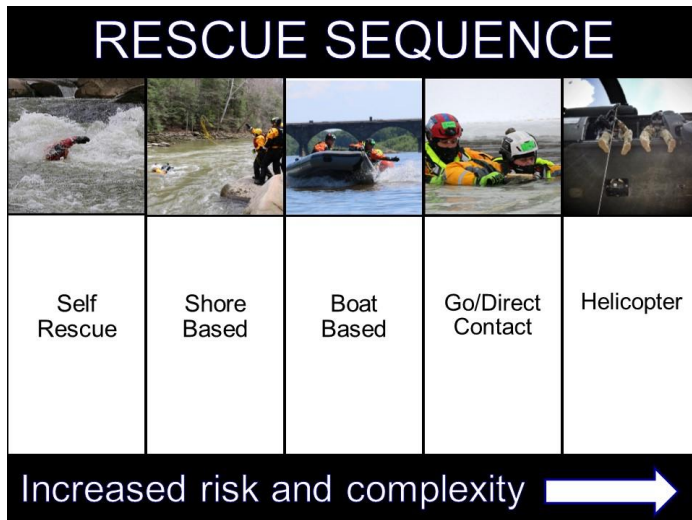
- USCG approved PFD
 - Whistle
 - Knife
 - Two locking carabineers
- Helmet
 - Reflective tape and light source
- Appropriate thermal protection



WEAR MISSION SPECIFIC PPE

- Wear mission specific personal protective equipment (PPE) in the hot zone.
 - Don and secure an appropriately sized U.S. Coast Guard approved PFD with attached whistle, knife, and two locking carabineers. Wear a helmet designed for water rescue applications with an attached waterproof light source and reflective tape.

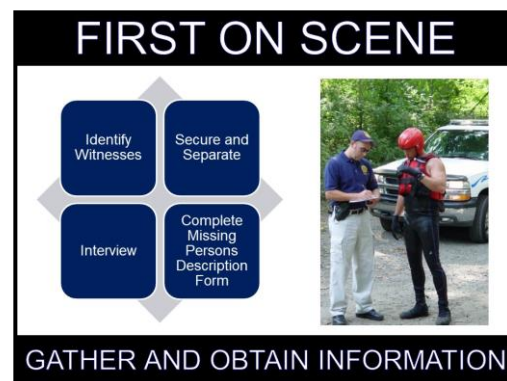
- Select mission specific water rescue clothing (dry suit, thermal layering to meet the demands of the environment, gloves, and water rescue boots).
- NOTE: Turn-out gear is NOT appropriate PPE in the hot zone. It is bulky, heavy, restricts swimming and is dangerous to wear around water.



- Plan a rescue response and function up to the teams capabilities. Follow the rescue sequence:
 - Self-rescue
 - Shore-based
 - Boat-based
 - Go/Direct contact
 - Helicopter
- Never have a person leave a safe location without a properly donned and sized PFD and helmet.

- Rescue vs. Recovery - At the scene of a water rescue emergency time is critical. Many people do not realize that individuals have been successfully revived after being under water for over one hour. Influencing survival factors include:
 - Individual and team safety (number one factor)
 - Personnel and equipment available
 - Victim condition
 - Length of submersion
 - Complexity of the rescue
- Keep track of time from when the victim was last seen on the surface will help determine if the team is in a rescue or recovery mode. Most teams use the “golden hour” as a benchmark to function in rescue mode from time of submersion. The team will switch to recovery mode when specific criteria have been met.
- Rescuers have needlessly lost their lives due to rescue operations being pushed by family and media. Use judgment and experience, not compassion for decision making. Compassion kills!
- Designate a person to work directly with the family and answer their questions.

- Obtain information and gather data
 - Identify witnesses, secure and move them to an area where they can be interviewed. Keep separated to obtain unbiased or influenced information
 - Complete Missing Persons Description Form
 - Determine Point Last Scene (PLS)/Last Known Point (LKP)
 - Pick visual points to use when



describing where a person was last seen. Use flagging, sticks or other items to mark directions to point

- Identify Public Information Officer (PIO) to work with the public and media to provide approved information regarding the incident.
- Incident termination and demobilization
 - Complete gross decontamination of equipment and personnel
 - Complete accountability of all personnel
 - Complete onsite after action review (AAR)
 - Notify Emergency Operations Center (EOC) that your resources are clear of the scene and returning to home base.
- Final actions
 - Clean, inspect, and store equipment
 - Damaged equipment must be removed from service if problems are found
 - Restock supplies
 - Complete reports
 - Notify EOC when resource is in-service and available to respond to next incident

PROGRAM REVIEW

The Water Rescue Awareness for the First Responder program provides the student with the following information:

- The need for surface and swiftwater search and rescue
- Scene safety, assessment, control and management
- Evaluation of potential and existing water hazards
- Resources needed to perform water operations
 - Operations and Technician level personnel and teams
- Personal and team safety measures
 - Training
 - Personal Protective Equipment (PPE)
- Activation of the Emergency Response System (9-1-1)
- Rescue vs. recovery operations
- Information regarding Operations and Technician level training programs are provided to introduce the learner to the many aspects of water rescue training.

The AHJ is responsible for developing, implementing, evaluating and updating their Standard Operational Guidelines. They may already have done significant planning to handle water emergencies. On the other hand, this training program may point out organizational weaknesses.

Utilize this information to ensure personal and team safety when responding to water related emergencies. Periodically refresh your training and take additional water safety courses. Focus on planning and practice to be prepared for the dangers and difficulties associated with water rescue.



The Pennsylvania Fish and Boat Commission is responsible for the PA Water Rescue program. Ryan Walt, the Commission's Boating and Watercraft Safety Manager coordinates and oversees water and ice rescue curriculum development, instructor training, and is the liaison with numerous local, state and national agencies regarding water rescue training opportunities and standards.

Chris A. Calhoun, lead water rescue instructor-trainer, is the primary author of the instructor's lesson plan and PowerPoint presentation for this curriculum. PFBC instructor-trainers assisted with the curriculum development, review and editing, instructor training, and ensuring the program meets and exceeds current national standards. They are Anthony Beers, Lenny Basara, Chad Doyle, George Drees, Scott Grahn, Emmett Kyler, John Hopkins, Darrin Kephart, Joel Koricich, Michael Kurtz, Michael McCarthy and Jeremy Speakes.

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WATER RESCUE RESOURCE AND CONTACT LIST					
RESOURCE TYPE					
<input type="checkbox"/> WATER RESCUE TEAM			<input type="checkbox"/> HELICOPTER		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	
<input type="checkbox"/> LOCAL			<input type="checkbox"/> SEARCH DOG TEAM		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	
<input type="checkbox"/> COUNTY			<input type="checkbox"/> EMERGENCY MEDICAL SERVICES		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	
<input type="checkbox"/> REGIONAL			<input type="checkbox"/> HAZMAT		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	

<input type="checkbox"/> STATE			<input type="checkbox"/> SHELTER AND FOOD RESOURCES		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	
<input type="checkbox"/> FEDERAL			<input type="checkbox"/> GOVERNMENT AGENCY		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	
<input type="checkbox"/> PUBLIC SAFETY DIVE TEAM			<input type="checkbox"/> MEDIA		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	
<input type="checkbox"/> LAW ENFORCEMENT			<input type="checkbox"/> OTHER		
NAME			NAME		
STREET ADDRESS			STREET ADDRESS		
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PHONE NUMBER 1 ()	PHONE NUMBER 2 ()		PHONE NUMBER 1 ()	PHONE NUMBER 2 ()	

WATER RESCUE RESOURCE CONTACT INFORMATION		
		EMAIL
STREET ADDRESS		
CITY	STATE	ZIP CODE
HOME PHONE NUMBER ()	CELL PHONE NUMBER ()	WORK PHONE NUMBER ()

NIMS INFORMATION	
TEAM TYPE CLASIFICATION	TEAM SIZE
RESOURCE CAPABILITIES	
EQUIPMENT AND RESOURCES	
CALL OUT PROTOCOL	
MEETING DATES	
AGREEMENTS	

HAZARD SURVEY FORM			
SITE INFORMATION			
SITE NAME			
SITE TYPE			
<input type="checkbox"/> OCEAN	<input type="checkbox"/> LAKE	<input type="checkbox"/> RIVER	<input type="checkbox"/> STREAM/CREEK
<input type="checkbox"/> POND	<input type="checkbox"/> SWAMP	<input type="checkbox"/> DIKE/LEVEE	<input type="checkbox"/> LOW WATER CROSSING
<input type="checkbox"/> LOW-HEAD DAM	<input type="checkbox"/> INDUSTRIAL INTAKE	<input type="checkbox"/> OTHER: _____	
IF RIVER: SELECT CLASS OF RIVER			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6			
SITE DESCRIPTION AND HAZARDS (MANMADE AND NATURAL)			
SITE SPECIFICATIONS		TYPE OF MARKINGS	
WIDTH	DEPTH	DAM CONDITION AND CONSTRUCTION	
GPS DATA POINTS Latitude _____ Longitude _____			
<ul style="list-style-type: none"> • Format Used (Degrees, Minutes, and Seconds (DMS) – Degrees and Decimal Minutes (DMM) – Decimal Degree (DD) – Other) 			
ACCIDENT SITE HISTORY			
GAUGE DATA			
U.S.G.S. REAL TIME DATA FOR THE UNITED STATES STREAM FLOW http://waterdata.usgs.gov/usa/nwis/rt			
SPECIFIC U.S.G.S. LINK FOR SITE			
CFS/GAUGE HEIGHT – LOW		CFS/GAUGE HEIGHT – MEDIUM	
CFS/GAUGE HEIGHT – HIGH		CFS/GAUGE HEIGHT – FLOOD	
JURISDICTION			
FIRE/RESCUE	NAME		PHONE NUMBER
			()
	STREET ADDRESS		
	CITY	STATE	ZIP CODE
LAW ENFORCEMENT	NAME		PHONE NUMBER
			()
	STREET ADDRESS		
	CITY	STATE	ZIP CODE

MUTUAL AID	NAME	PHONE NUMBER ()	EMAIL
	STREET ADDRESS		
	CITY	STATE	ZIP CODE
OTHER	NAME	PHONE NUMBER ()	EMAIL
	STREET ADDRESS		
	CITY	STATE	ZIP CODE
COMPLETED BY			
NAME		DATE	

MISSING PERSON DESCRIPTION FORM		
INFORMATION OBTAINED FROM		
NAME		EMAIL
STREET ADDRESS		
CITY	STATE	ZIP CODE
HOME PHONE NUMBER ()	CELL PHONE NUMBER ()	WORK PHONE NUMBER ()
RELATIONSHIP TO MISSING PERSON <input type="checkbox"/> WITNESS <input type="checkbox"/> VICTIM <input type="checkbox"/> FAMILY MEMBER <input type="checkbox"/> OTHER:		
MISSING PERSON DATA		
NAME		EMAIL
STREET ADDRESS		
CITY	STATE	ZIP CODE
HOME PHONE NUMBER ()	CELL PHONE NUMBER ()	WORK PHONE NUMBER ()
FLOAT PLAN (IF YES, ATTACH TO THIS FORM) <input type="checkbox"/> YES <input type="checkbox"/> NO	PHOTOGRAPH (IF YES, ATTACH TO THIS FORM) <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE REPORTED MISSING
TIME REPORTED MISSING OR LAST SEEN _____ AM/PM _____ MILITARY TIME		TIME WHEN VICTIM SUBMERGED _____ AM/PM _____ MILITARY TIME
POINT LAST SEEN/LAST KNOWN (BE SPECIFIC REGARDING DETAIL AND MARK/IDENTIFY LOCATION (MARKER BUOY, GPS, ANCHOR BOAT))		
MISSING PERSON DESCRIPTION – OBTAIN IMAGE		
GENDER <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE <input type="checkbox"/> UNKNOWN	AGE (5 YEAR SPANS – I.E. 25-30)	WEIGHT (10 LB. SPANS – I.E. 180-190)
HEIGHT (3 INCH SPANS – I.E. 5'-5'3")	BODY BUILD <input type="checkbox"/> SLIGHT <input type="checkbox"/> AVERAGE <input type="checkbox"/> HEAVY	HAIR (COLOR AND STYLE)
FACE SHAPE	FACIAL HAIR	EYE COLOR
HEALTH STATUS		
PHYSICAL LIMITATION(S)		
MEDICAL CONDITION(S)	MEDICATION(S)	

ALLERGIES		MENTAL STATUS	
CLOTHING			
HAT	PFD COLOR _____ TYPE _____	JACKET	SHIRT
PANTS/SHORTS	SOCKS	SHOES TYPE _____ SIZE _____ TREAD PATTERN _____	
UNIQUE FEATURES/CHARACTERISTICS			
IDENTIFYING MARKS (TATTOOS, BIRTH MARKS, SCARS, PIERCINGS)		IDENTIFYING ACTIONS (MANNERISMS (WALK, STYLE, SPEECH, ETC.))	
SWIMMING ABILITIES			
SWIMMING			
<input type="checkbox"/> NON-SWIMMER <input type="checkbox"/> WEAK <input type="checkbox"/> FAIR <input type="checkbox"/> STRONG			
BOATING/WATER SAFETY TRAINING			
TRAINING (IF YES, PROVIDE DETAILS OF TRAINING (BOATING, DIVING, SWIMMING, WATER RESCUE, ETC.))			
<input type="checkbox"/> YES <input type="checkbox"/> NO DETAILS: _____			
VICTIM BEHAVIOR			
CHECK ALL THAT APPLY		DETAILS	
<input type="checkbox"/> DRINKING/DRUG ABUSE <input type="checkbox"/> UNSAFE ACT <input type="checkbox"/> DEPRESSED/SUICIDAL <input type="checkbox"/> USE OF WEAPONS <input type="checkbox"/> RUN AWAY <input type="checkbox"/> OTHER			
VICTIM ACTIVITY			
CHECK ALL THAT APPLY		DETAILS	
<input type="checkbox"/> FISHING <input type="checkbox"/> SWIMMING <input type="checkbox"/> BOATING <input type="checkbox"/> DIVING <input type="checkbox"/> DRIVING <input type="checkbox"/> HIKING <input type="checkbox"/> ICE SKATING <input type="checkbox"/> OTHER			
VICTIM PERSONAL PROTECTIVE EQUIPMENT			
WAS VICTIM WEARING PFD <input type="checkbox"/> YES <input type="checkbox"/> NO		WAS VICTIM WEARING COLD WATER CLOTHING <input type="checkbox"/> YES <input type="checkbox"/> NO	
SIGNALING CAPABILITIES			
VICTIM HAD			
<input type="checkbox"/> VISUAL DISTRESS SIGNALS <input type="checkbox"/> MIRROR <input type="checkbox"/> WHISTLE <input type="checkbox"/> CELL PHONE (LIST NUMBER) _____			
<input type="checkbox"/> RADIO (VHS OR WALKIE TALKIE) TYPE: _____ CHANNEL OF OPERATION: _____ CALL NUMBERS OR SPECIFIC NAME: _____			
PROVIDE ANY OTHER DETAILS			
VEHICLE INFORMATION			
MAKE	MODEL	YEAR	COLOR
LICENSE PLATE STATE _____ NUMBER _____	VEHICLE ID NUMBER (VIN)	UNIQUE CHARACTERISTICS	
LOCATED AT (ACCESS, BOAT RAMP, ALONG ROAD, PARKING LOT, ETC. – PROVIDE DETAIL)			

NAME _____

AWARENESS ANSWER SHEET

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

FLOOD EMERGENCY RESPONSE GUIDELINES

THE NUMBER ONE PRIORITY IN A FLOOD EMERGENCY IS YOUR PERSONAL SAFETY AND YOUR TEAM'S SAFETY. The hot zone is within 15 - 20 feet of any waterway. Always provide adequate backup for all water related engagements.

IMMEDIATELY ASSESS YOUR AREAS OF HIGH RISK. Preplanning is critical. Prepare equipment and plan for evacuations.

RECOGNIZE THE RISKS AND DANGERS ASSOCIATED WITH WATER EMERGENCIES and take actions to ensure you and your team's safety. Prepare for a self-emergency. If swept away, float on your back with feet downstream and at the surface. Backstroke and angle yourself toward shore.

DO NOT WEAR TURNOUT GEAR when responding to a water-related emergency.

WEAR PERSONAL PROTECTIVE EQUIPMENT (PPE) WHICH MUST INCLUDE WEARING A LIFE JACKET (PFD) AND A WATER RESCUE HELMET. Other important PPE includes a dry suit for protection from water contaminants. Thermal protection worn beneath the dry suit may also be needed.

APPROPRIATE FOOTWEAR IS NEEDED FOR WATER RESCUE. Wear wading shoes or boots, NOT FIRE BOOTS! Good hand protection is neoprene gloves.

BE PREPARED TO DECONTAMINATE PERSONNEL after they come out of the water. They may be exposed to a wide variety of chemicals and pollutants. Rescue team members should maintain vaccinations for preventable diseases such as hepatitis and tetanus. Post medical exams are a good idea.

During boat operations in urban areas be aware that HAZARDS EXIST ABOVE (low-hanging electrical lines) AND BELOW THE BOAT (mailboxes, fences, gas and parking meters, etc). Assure utilities are secured in the area of engagement prior to in-water rescue activities.

USE A POLE OR STAFF TO PROBE AHEAD when wading in NON-MOVING floodwaters to make sure there are no open manholes or other traps.

MOVING WATER IS INCREDIBLY POWERFUL. Never underestimate its power; 18-24 inches will lift and move a vehicle. Underwater currents can be very deceiving, especially with debris in the water or poor visibility.

DO NOT DRIVE OR ALLOW ANYONE TO DRIVE ACROSS A FLOODED ROADWAY. During floods, the #1 reason for fatalities is driving across a flooded roadway.

PREPARE FOR NIGHT OPERATIONS. Floods do not care about what time of day it is. Use reflective tape on helmets. Issue light sticks and portable lights with extra batteries to all personnel.

RADIO CONTACT MUST BE MAINTAINED WITH ALL PERSONNEL. Maintain PAR levels.

ALWAYS PLACE RESCUED VICTIMS IN PROPER PPE, i.e. a life jacket and helmet prior to moving. Consider sheltering in place and establishment of safe havens only after consulting the forecast and rescue capabilities.

Mark buildings and vehicles that have been searched for victims with a marking system that indicates they were already searched. This eliminates the potential for a second team wasting valuable time during a disaster response.

Prepared by PA Fish & Boat Commission – REV. 1/2020

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