Issued by: Fire Chief Scott E. Goldstein

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SECTION 1. Purpose:

To provide direction for first responding personnel during water rescue or ice rescue incidents.

SECTION 2. Applicability:

This appendix is applicable to all MCFRS personnel and personnel from other organizations operating on incidents in Montgomery County.

SECTION 3. Background:

This appendix describes the MCFRS operational approach to water rescue incidents for personnel certified by MCFRS to the Water Rescue Operations level. It is drawn from the experience of our personnel, lessons learned from similar events in Montgomery County, and from national best practices.

This appendix **is not** a standard operational guideline for water rescue technicians, nor does it prescribe how members of the Swift Water Rescue Team (SWRT) will operate on water related incidents.

The intent of this appendix is to:

a. Provide personnel with a general framework for approaching water related incidents;
b. Provide a framework for a risk/benefit analysis;
c. Encourage personnel to decisively execute removal of people from hazards when it is within their certification to do so and when the risk analysis supports it; and
d. Reduce the timeframe from when SWRT assets arrive and when they enter the water to execute the rescue.

Position Statement

Water related incidents can be roughly divided into three basic types: swift water, flat water, and ice rescue.

In very general terms swift water is water that moves faster than an average person can comfortably walk, and flat water is moving more slowly than the average person can comfortably walk. Ice refers to any ice formation regardless of quality or strength and regardless of whether it is over swift or flat water.

It is extremely hazardous for personnel to operate outside the scope and certification of their training.

Awareness-level training has typically been provided in classes such as Practical Rescue or Rescue Technician Site Operations.

Operations-level certification is generally recognized as being currently certified as MCFRS Boat Crew or Boat Operator.

Technician-level certification is only recognized as being currently certified as a MCFRS Swift Water Rescue Team (SWRT) Boat Crew or SWRT Boat Operator.

Personnel must remember that these incidents are high risk and low frequency and will place initial responders under unusual stress. There may also be significant pressure from bystanders to “do something.” However, it is imperative that the victim(s) or the crowd don’t dictate the terms of the rescue; the actions and tempo of the rescue must be result of a rational risk-based approach.

MCFRS operations are based on action, and this appendix encourages action but action with restraint. Rescuers must take the time to evaluate the situation, to control as many hazards as possible, and to reduce risk. There are a variety of situations that can result in people requiring assistance from fire/rescue to get out of whatever situation that they are in. It is not possible to provide specific guidance on each event type; however, some events are more common than others and this appendix is designed to address the more common occurrences.

Common Occurrences

There are three common occurrences that form the basis for this appendix:

1. Urban street flooding. During urban street flooding rainfall exceeds the discharge capacity of the storm water management system leading to water in the roadways. This type of flooding

tends to cause rapid rises in water level but equally important the water recedes quickly as well.

2. Creek flooding. Excessive rainfall leads to creeks overflowing their banks and flowing rapidly downstream.
3. Flat water emergencies. These situations occur when users of the Potomac River upstream of the Seneca Breaks, or other bodies of flat water such as the Triadelphia Reservoir, Lake Needwood, and Lake Frank, either fall into the water or are stranded on disabled watercraft.

Rescues on the Potomac River downstream of Seneca Breaks are managed by SWRT and are not addressed in this document.

General Approach

The general approach to each of the water rescue types follows the same basic framework and all actions for water related incidents must be based on clear objectives and an ongoing risk analysis. In other words, there must be a good reason for placing personnel at greater than usual risk AND the risk assessment must provide a reasonable chance for mission success.

There are four objectives common to all water rescue events. Personnel must consider these objectives as a starting point and adjust them as the situation demands. They are based on the **ACRE** mnemonic**:**

a. **Assess**: Assess the scene, determine the most appropriate travel routes and staging areas, identify hazards and conduct a risk analysis.
b. **Control**: Control hazards, isolate and deny entry, identify hazards, establish isolation zones. This includes taking the necessary steps, such as establishing spotters, and downstream safety to speed the intervention of the SWRT.
c. **Rescue**: Use appropriate methods and equipment to separate people from hazards.
d. **Evacuate**: Remove victim(s) to safety.

Water Hazards

a. The Potomac River below the Seneca Breaks (near Riley's Lock) is one of the most dangerous and difficult to navigate stretches of river in the country. People travel from all over the country to practice kayaking in this stretch of water precisely because of the inherent difficulty.

b. The relative dangers of the Potomac River as subject to change and the water level of the river plays a large role in either reducing or increasing risk.

c. Personnel must be constantly aware of the fact that floodwaters tend to rise quickly and, in many cases, subside just as quickly. This means that people in danger one moment may not be in any danger the next moment. Conversely a simple stream can turn into raging current in a matter of seconds with little or no warning.

d. Manholes can be missing. Water moving over manholes can dislodge the covers, leaving large open voids.

e. Roads can be washed away. Water can undermine large sections of roadway.

f. Water has pressure. The effect of the pressure depends on how fast the water is moving and the surface area available for the water to act on.

g. Ice is unpredictable. It is difficult for seasoned experts to make determinations about how ice is going to behave under load. This difficulty is enhanced when the ice has formed over moving water. These rescues require specialized training and equipment. Further, attempts at rescuing victim(s) may increase the danger for the victim(s) and increase the difficulty of the rescue.

h. Ice rescue requires high levels of stamina. Movement across the ice is difficult. Just making it to the rescue site is physically exhausting.

Risk Assessment

Water related incidents are among the riskiest for fire and rescue personnel. There are multiple characteristics of water related incidents that increase risk:

a. Water calls can be emotionally charged, personnel must resist the urge to rush.

b. Many hazards are hidden under the surface of the water.

c. Water exerts a tremendous amount of pressure. Even shallow water moving at speed can knock personnel off their feet.

These hazards demand that personnel slow down their action sequence and ensure that if they do choose to enter the water that choice is the result of a deliberate risk assessment and that there is a reasonable chance that the objectives can be met. A risk assessment for water rescue incidents must consider:

a. The certification level of available personnel;

b. The relative danger that the victim(s) are in;

c. The specific circumstances of the situation;

d. What hazards are obvious and potential hazards;

e. The time lag between when first responders arrive and when specialized resources arrive; and

f. The scene stability, e.g., is the situation getting better or worse over time (water line is receding, rising, or stable).

Risk Reduction

To reduce risk to the lowest achievable level the following risk mitigation methods are established:

a. Establishment of an Incident Commander;

b. When possible during flooding situations, encourage stranded people to stay in place, especially if the water is receding;

c. Marking the water line in a way that the marker will not wash or float away and can be monitored from a safe distance;

d. Establishment of a downstream safety;

e. Establishment of an upstream spotter;

f. Development and communication of incident objectives; and

g. Establishment of a safety plan.

SECTION 4. Definitions:

See Appendix Q.

SECTION 5. Policy:

a. Personnel must not perform tasks above their level of training.

b. Swift Water Hot Zone activities are only to be conducted by SWRT members.

c. Personnel must ensure that all their actions support the established objectives.

d. Non-SWRT personnel are not permitted to connect or tie their personal floatation device (PFD) to a rope unless they are operating on ice.

e. Personnel must not wear any part of their structural firefighting gear within 10’ of the water’s edge with the sole exception of ice rescue where the Incident Commander has the discretion to allow turnout coats in the Warm Zone for ice rescue if needed for protection from the elements.

f. For operations on the Potomac River, non-SWRT personnel may only work in the Hot Zone upstream of the Seneca Breaks at Riley's Lock and only when water levels are:
   1. Less than 5.5' at Point of Rocks for the Potomac River from the Frederick County line to Edwards Ferry
   2. Less than 8.0' on the Edwards Ferry gauge for the Potomac River from Edwards Ferry to the Seneca Breaks

g. During flooding situations,
   1. Encourage stranded people to stay in place, especially if the water is receding.
   2. Mark the edge of the water using means that will not wash off or wash away.
   3. Ensure the water level is monitored continuously.

h. The minimum water rescue personal protective equipment (PPE) in the Hot Zone is:
   1. A properly sized floatation device;
   2. An approved helmet for water rescue;
   3. A whistle; and
   4. Dry suits when
      A. The combined air/water temperature is below 120 degrees F.
      B. There is a reasonable concern that the water may be contaminated with by sewage, excessive runoff, or other hazards.

i. The Incident Commander may increase the PPE level as necessary based on the risk assessment.

j. The water is the Hot Zone.

k. The Warm Zone begins at the water's edge and extends to a minimum of 10' away from the water's edge.
   1. There are circumstances such as terrain, weather, or other conditions that increase the risk of personnel inadvertently entering the water, and such circumstances may require the Warm Zone to be expanded beyond the 10' minimum.
   2. All personnel in the Warm Zone must:
      A. Wear at least a PFD.
      B. Have a throw bag (if available).
      C. Be free of all structural firefighter gear.

l. When a boat-based rescue is likely, and properly trained personnel are available prior to the arrival of the boat personnel or SWRT, the following positions should be staffed, in order of priority:

1. Downstream Safety
2. Downstream Safety on opposite bank
3. Upstream Spotters

m. Downstream Safety and Upstream Spotters are only used when they have a reasonable chance of impacting the overall safety of the mission. For example, when operations are occurring beyond the reach of throw bags, it may be no longer prudent to assign downstream safety.

n. Downstream Safety and Upstream Spotters will operate in teams of at least two personnel wearing at least PFDs and equipped with radios and throw bags. The Downstream Safety personnel should be prepared for the rescue of victims and/or rescuers that may be swept downstream. All personnel in this group should have throw bags in hand.

o. Shallow Water Crossing: A shallow water crossing is where personnel enter water less than 18 inches deep on foot to make a rescue.

p. Personnel may make a shallow water crossing when:

1. They meet the minimum requirement of boat crew;
2. The water is not more than 18 inches in depth; and
3. They use a Shallow Water Crossing Pole.

q. Boat Based Rescue: Personnel may initiate boat-based rescue when:

1. They meet the minimum requirement of boat crew (Operations level for flat water, SWBC level for swift water);
2. There is at least one boat operator on board; and
3. A safety plan is in place.

r. All victims should be placed in a PFD before being moved.

s. Only the SWRT may operate on ice that is in or above moving water.

t. Personnel who entered flood waters should to be decontaminated with a solution of mild detergent and water.

u. The Fire Chief has the discretion to publish and update checklist(s) to be used on water related incidents.

v. When a checklist exists for an incident, unit officer must use the checklist for incident operations.

w. Only the SWRT may engage in any water or ice rescue of animals.

x. **Initial Actions**

1. The first arriving Primary Unit Officer will provide the Initial On-Scene report (IOSR).
2. The first arriving Primary Unit Officer will then:
   A. Assess the entire scene.
   B. Gather information about the circumstances of the event, preferably from direct witnesses.
   C. Provide a Situation Update Report (SUR) containing the information gathered during the scene assessment:
      i. **Location.** Update and/or confirm location of incident and
      ii. **Conditions.** Type of technical rescue involved, a description of the situation, the number of people in danger, description of hazards found
      iii. **Actions.** What actions you have already taken, and which do you intend to take.
      iv. **Needs.** Announcement of what resources will be needed to execute the rescue.
      v. The SUR report contains the command choice (Tactical or Stationary).

SECTION 6. Responsibility:

Personnel are responsible for knowing their current certification level and not acting in a capacity that exceeds their current certification.

SECTION 7. Procedure:

a. The first arriving Primary Unit Officer must:

   1. [Provide an IOSR].
   2. Assess the scene.
   3. [Provide a SUR].
   4. [Announce best access for additional units].
   5. [Announce staging location for units].
   6. Communicate the incident objectives.
   7. Ensure the water line is marked.
   8. Use the Water Rescue Checklist.

b. Determine if there is a rescue involved and the level of certification required to conduct the rescue.

c. Assign the following positions as necessary and prudent.

   1. Downstream safety
   2. Downstream safety on opposite bank
   3. Upstream spotters

d. Begin the rescue sequence

   1. **Yell:** Establish and maintain contact with the victim(s). When possible, the person making contact should provide instructions for self-evacuation. Consider the use of a bull horn or apparatus PA system.
   2. **Reach:** Use available tools and equipment to reach out to the victim and pull them to safety.
   3. **Throw**: Use the issued throw bags or other available means to throw a rope to the victims and pull them to safety.

e. Personnel certified as boat crew may extend the rescue sequence on **Flat Water** to:

   1. **Row**: Rescue and evacuate the victims to safety using a boat.
   2. **Go:** Bodily enter the water to rescue the victim(s).

f. After rescue operations are deemed unnecessary or have been completed:

   1. Ensure stranded vehicles are clearly marked with high visibility caution tape whenever it is safe to do so.
   2. If the incident involves a boat, other watercraft, or car, the make and color should be recorded and passed on to ECC.
   3. The Incident Commander must coordinate with the appropriate agency to deny access to flooded roadways or other hazardous areas.
   4. The Incident Commander must ensure that personnel and equipment are decontaminated as necessary.

SECTION 8. Cancellation:

Information Bulletin 07-10, Enhanced Water Rescue Capability, 05/17/2007

SECTION 9. Attachments:

A. Water Rescue Checklist

Approved:

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Fire Chief

January 1, 2019

Date