Fact Sheet: Working Near Water

Streams, rivers, and oceans can host a variety of hazards. Even if you are not planning to enter the water, preparing for an unexpected water entry is important, as this event can be extremely dangerous.

- **Drowning** - Workers near rivers and oceans can be swept away by strong currents. Having a foot get caught under a rock or encountering "strainers" (e.g., submerged trees) could lead to entrapment that can lead to drowning.
- **Cold Water Shock and Incapacitation** - During the first 5 minutes of suddenly entering very cold water the body experiences a shock. The first response is an involuntary gasp for air followed by massive increase in lung and heart effort. This can result in muscle spasm, drowning, or heart attack. The colder the water, the stronger the response. Between 5-15 minutes the body will try to conserve heat by decreasing blood flow to the extremities. This can cause loss of dexterity and movement in your hands and feet, followed by arms and legs. If you are not wearing a floatation device, you will struggle to stay afloat.
- **Hypothermia** - Prolonged exposure (>15-30 minutes, depending on water temperature) to cold water can lead to hypothermia. Hypothermia may be hastened by inappropriate clothing or trying to swim.
- **Wildlife Encounter** - Aquatic environments can have local wildlife that can be hazardous such as snakes, alligators, and jellyfish.
- **Waterborne Illness** - Inhaling or inadvertent ingestion of contaminated water could lead to gastrointestinal illness.

Personal Protective Equipment

- Personal floatation device (PFD)
- Boots or water shoes
- Weather appropriate clothing
- Hiking poles
- Waders
- High-visibility clothing
- Throw ropes
- Helmet

Preparation and Training

- Before leaving, investigate the weather forecast and tide schedules for your location.
- For work on bridges, obtain approval through local transportation agency for a traffic control plan for the bridge.
- It is recommended you take courses in: Basic First Aid and Basic Lifeguard Training

General Safety

- All PFDs should be inspected prior to use for cuts, loss of flotation or other damage.
- All PFDs should be worn with all zippers, clasps and buckles secured and adjusted for proper fit.
- All available PFDs should be maintained in good working condition.
- Contacting contaminated water or being exposed to aerosols of contaminated water can also cause illness. Take precautions near bodies of water with known contamination, algal blooms, and/or large fish kills.

Rivers and Streams

- When you are in a situation where you have to cross a river, identify the best place to cross. This place will ideally be shallow with a slow current. It is best to keep shoes on while crossing to prevent cuts and falls.
- Do not cross rivers that are deeper than your thigh or that are moving fast enough to carry large debris (branches or logs).
- To cross face upstream and shuffle sideways with a slightly downstream path (use walking sticks or poles for extra support if available). Loosen your pack, if you get swept away it may drag you down or get snagged in a precarious place.
- Do not attempt wading into areas upstream from low dams, waterfalls, or other river hazards such as logs, undercuts or vertical banks where there is no way to get out.
- Keep an eye for river wide reversals that may indicate a low dam, do not wade near areas with these structures.
- Avoid traveling over ice covered rivers and streams, as the ice thickness may vary and not support your weight.

Oceans/Beaches

- Keep a copy of tide schedules, a map, and an accurate watch with you.
- Wear shoes to protect your feet from jellyfish, sea urchins, and sharp rocks.
- Do not approach sea cliffs, as these are likely unstable and may have falling rocks. If you must, wear a helmet.
- Pay attention to posted warning signs regarding beach conditions. This may include falling rocks, currents, and storm conditions. Some beaches will have water quality alerts if there are large amounts of algae or other contaminant that makes the water hazardous.
- It is highly recommended that you wear a PFD, regardless of swimming ability, if entering the water.
- Do not enter the water in rough surf as powerful waves could knock you down unexpectedly.
- Be aware that strong currents may be present (rip tide, longshore currents).

Emergency Response

- If you are unexpectedly submerged in cold water, use the Heat Escape Lessening Position (HELP). This position is where you should cross your legs below the knees and draw them up toward your chest as high as you can and hug your arms across your upper body.

Rivers

- ➢ If you are swept away, attempt to point your feet down stream, float on your back, and paddle towards shore. Keep your feet down stream to adsorb the impact with exposed rocks. Reverse position to dive over logs and "strainers". Never dive under these objects.
- ➢ If you find a place where you can make it to shore, swim aggressively towards shore.
- ➢ If someone else is swept away, do not enter the water to save them, attempt to rescue from the shore. Make sure you are firmly anchored and use throw ropes to pull them to safety. If possible, throw them a flotation device, even a rolled up sleeping pad may help.

Oceans

- ➢ If somebody is swept away in a rip current you, advise them from the shore to swim parallel to the shoreline to escape the current.
- ➢ Do not attempt an in-water rescue unless you have had ocean lifeguard training.
- ➢ Call emergency services for in-water rescue.

References and Additional Resources

- • Pennsylvania Fish and Boat Commission: Water Rescue
- • Mass.gov: Ice and Cold Water Safety
- • NOAA: Beach Hazards and Safety
- • Adapted from *Near Water Fact Sheet*, by University of Maryland: Department of Environmental Safety, Sustainability & Risk (https://essr.umd.edu/about/research-safety/field-research-safety/planning) with permission.