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| **CAL-HS-PD-0711** |
| **Working Near to Open Water** |
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# PURPOSE

1. This procedure gives instruction on how to work safely near water or mud in both tidal and non-tidal waters and is aimed at all staff involved in operational policing including training.

# RISK ASSESSMENTS / HEALTH AND SAFETY CONSIDERATIONS

1. Working near water or mud can be highly dangerous. Deaths and serious injuries occur every year in both tidal and non-tidal waters. Casualties are often experienced in the environment but the volatile nature of water and mud linked to weather can create an unforeseen problem. It is hazardous for police staff or officers, especially in the dark, to enter areas where water or mud exists. Cold weather exacerbates this danger along with floodwater and icy water. It can be dangerous for staff to work near water or mud without appropriate equipment and training.
2. To assist managers in risk assessing this type of work activity, a model risk assessment on working near water is available from M2 Safety Consultants.
3. There are a number of significant health risks from waterborne contaminants. These contaminants include chemical substances and biological agents found in and around water. Polluted water may also contain toxin producing algae or micro-organisms and diseases.

# PROCEDURE

## Definitions

1. **Working near water**; means any environment where the staff member is in close proximity to water, whether tidal or non-tidal, where there is any potential for the member entering that water, either voluntarily or not. This includes working in, on, near and over water.
2. **Tidal water**; means any water that is affected by the position of the moon and sun, i.e. the depth and/or flow of current increases/decreases as a result of the tidal effects at the coast.
3. **Non-tidal water**; means any water that is not affected by the sun and moon, i.e. the depth and/or flow of current is unaffected by tidal affects. This includes all upper river areas, streams, ponds, canals, lakes, swimming pools etc.
4. **Floodwater**; means any area of water that in normal circumstances does not exist and incorporates any water that is formed as a result of heavy rainfall and/or overflow water from any normal source of water, e.g. rivers, canals etc.
5. **Marina**; means a location comprising of a quayside with pontoons designed for the mooring of watercraft.
6. **Pontoon**; means any structure, whether floating or fixed to the ground, that allows access by foot or vehicle to watercraft on moorings, whether or not watercraft are present.
7. **Watercraft**; means any vessel that floats and is designed to carry people or equipment. This could be a simple raft used as a working platform, or a ship. It could also include inflatable vessels from small children’s beach dinghies to commercial rigid inflatable boats (RIBs).
8. **Ice**; refers to any water whilst in a frozen state, note that salt water freezes at a lower temperature than fresh water.
9. **Mud**; means any area of mud/sand/slurry that cannot be easily assessed as being safe, i.e. it is of an unknown depth or consistency. It will often be linked to mud flats at the coast but could equally be a deep area of mud in a woodland environment or a farmer’s slurry pit.
10. **Weather**; means the combined effects of temperature, wind speed and direction and rain.
11. **Bank**; means all land abutting the edge of any river, canal or enclosed water such as a pond or lake.
12. There are a number of work activities which involve working near water/mud such as bank realignment and dredging burns/ water courses.

## Pre-Planned Operations

1. Where there is a known risk of working near water/mud, for example:

* Dredging water courses
* Restabilising water banks
* Grading water/ river banks
* Working near to live rivers (footpaths/ roads/ right of ways).

## Assessing the Risks

1. When planning any operation which involves working near water/mud, a risk assessment should be carried out prior to carrying out the work activity to establish the risks, this should take account of the following:

* Is there suitable safe access?
* Is there suitable edge protection to prevent falling into the water?
* Is the structure/bank/material to be stood on or used sufficiently strong enough to hold the weight?
* Are there trip hazards present?
* Is there a risk of being pushed by a suspect into the water/mud?
* The duration of the work and the proximity to the water/mud.
* The equipment to be used for the operation.
* The safety equipment available e.g. life jackets, throwing lines, first aid kits.
* Do staff need special training, e.g. fast water rescue, boat, first aid etc?
* Are there safe escape routes if things go wrong?
* Have relevant agencies been notified of the work, e.g. Fire and Rescue, Ambulance etc.
* Is there a risk of falling into the mud/water?
* Weather, including wind.
* Tidal effects which can cause strong currents or strand people.
* Temperature.
* Ability to swim/physical ability to do the work.
* Communications with others, including other agencies.
* Suitable welfare provision, e.g. the capability to provide hot/cold drinks, food, sun screen and rest for staff in protracted operations.

## Unplanned Work Activities

1. No work near water should be unplanned. A thorough walk through of the work area prior to commencing work should be under taken and if open water is present, do not start work. A risk assessment will be required to be compiled taking into account the work near the open water.

# CURRENT FLOW

1. There are two types of current flow in rivers, Helical flow which causes the banks of the river to be undercut and eroded. This type of flow causes objects to be swept into the middle of the bank.
2. Laminar flow is the less hazardous but causes water near the surface to move more quickly than on the river bed. Further more water on the outside of a bend in the river will move faster than that on the inside.

## Fast Flowing Rivers

1. In fast flowing rivers various currents and eddies will be formed by obstructions under the water. These are highlighted by waves which appear to stay in the same place.

## Weirs

1. This is an artificial construction like a dam across the river, over which water falls to a lower level. The hazard with these are that people/objects get dragged back upstream towards the face of the weir, then forced under the surface to be flushed out further upstream.

## Strainer

1. A strainer is a metal grate through which the river water is strained. The hazard with these is that objects and people get sucked against them.

## Cold water

1. Cold Water (Cold water is defined as water below 15 degrees Centigrade)
2. When a body is suddenly immersed in cold water it encounters a number of symptoms, i.e. ‘cold water shock’ which has the effect of giving the body a strong drive to inhale deeply (gasp) followed by excessive breathing (hyperventilation), an increase in heart rate (tachycardia) and a reduction in blood flow to the skin. Even in ideal conditions, the voluntary breath hold time is commonly reduced to 10 seconds. Water temperature in the Solent typically range between about 7 to 18 degrees Centigrade.

## Weather

1. Account should be taken of weather conditions at all times. Time spent adjacent to water exposed to the sun increases the risk of sun stroke and sunburn due to the rays of the sun being reflected from the water.
2. The wind is highly significant as it will affect the condition of the water and buoyancy of items floating on it. The relative temperature is also dramatically affected by the wind especially if people get wet. Wind chill is a factor to be considered.
3. Icy conditions clearly affect the ability of staff to move about and increases the risks associated with falling into the water/mud. Furthermore, the low temperature associated with icy conditions attracts further risks with being in water or mud.

## Fresh Water and Salt Water

1. A body in salt water is more buoyant than one in fresh water, this may be a factor worth considering. Fresh water will freeze over at a higher temperature than salt water. The likelihood of stationary water such as ponds and lake freezing over is far greater than sea water.

## Fresh Water and Salt Water

1. Operating in or near to flood water can bring additional hazards not normally encountered in an everyday working environment. Fast flowing water is particularly hazardous as the weight of water exerted in these conditions will be extreme.
2. Following flooding staff should not wade through any water. Manhole covers and drains often become displaced due to water pressure within the storm drain or sewer system. This will leave a deep hole into which the unsuspecting can fall.
3. Dirty contaminated water can also mask ditches and access to basements. These types of situation represent an unseen hazard even in the shallowest of waters.
4. Floodwater will contain substantial amounts of debris which could cause entrapment.
5. Health hazards from water borne contaminants will be present in floodwater. These hazards may derive from overflow from sewage treatment plants, or from nearby agricultural or industrial premises and include the following:

* Hepatitis, the virus is present in faeces which can be present in water courses.
* Gastro Enteritis: sewage contains a number of bacteria, which if ingested can cause Gastro Enteritis.
* Blue Green Algae: This is an algae found in fresh water in the summer months, when a bloom grows on the surface which is a blue green colour and can be toxic.
* Leptospirosis: (Wells Disease) this is a bacterial infection caused by rat urine in the water.

1. To minimise risk to infection, staff should undertake basic precautions such as:

* Covering cuts and broken skin with waterproof plasters;
* Wear disposable gloves and Wellington boots;
* Avoid contact with slow moving water;
* Wash hands after handling any animal or contaminated clothing or other material;
* Wash hands before eating or drinking.

1. Water conducts electricity. Staff should be weary of live power cables in water. If power has not been turned off there is a high risk of electric shock.

# ROLES AND RESPONSIBILITIES

## Managers

1. It is the responsibility of Managers to carry out risk assessments and provide a safe system of work in relation to staff working near water/mud.

## Supervisors

1. It is the responsibility of Supervisors to ensure the safe systems of work are adhered to and if any additional risks are identified prior to/ during work then work is stopped. Additional control measures will need to be implemented prior to re-commencing work.

# MONITORING AND EVALUATION

1. This procedure will be monitored M2 Safety Consultants to ensure compliance with current health and safety legislation.

## Review

1. This procedure will be reviewed every three years, or as and when legislation or company requirements change or new and amended model risk assessments are produced.

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