



Department  
for Environment  
Food & Rural Affairs

# Flood rescue concept of operations

November 2019



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## Contents

1. Introduction.....	4
Background.....	4
Scope of this document.....	4
The FRCO and other key policies and documents.....	5
2. Response to Flood Rescue .....	7
Central government response .....	7
Local response.....	7
National Flood Rescue Assets .....	8
3. Incident Command .....	12
Joint Emergency Services Interoperability Principles (JESIP).....	12
Command, control and coordination .....	14
Incident command structures .....	21
4. Communications.....	24
5. Search .....	25
6. Operational considerations .....	33
7. Helicopter operations.....	44
8. Post-incident considerations.....	46
Annex A – Defra Flood Rescue National Asset Register – Requirements for teams and application process.....	47
Annex B – Mobilisation of national assets .....	48
Annex C – Water an flood rescue credentialing standards.....	50
Annex D – Health, welfare and decontamination.....	54
Annex E – Equipment.....	57
Annex F – First aid.....	62
Annex G – Water and flood rescue training standards .....	69

Annex H – Water and flood non-rescue support operations training module.....	90
Annex I – Water and flood rescue instructor standards .....	92
Annex J – Team typing matrix .....	100
Appendix 1 - Glossary of abbreviations .....	106

## List of tables

Table 1 - Team type capability overview.....	8
Table 2 - Flood Rescue Advisers.....	10
Table 3 - Helmet and light colours .....	38
Table 4 - Hand signals.....	39
Table 5 - Whistle blasts .....	39
Table 6 - Basic first aid kit.....	67
Table 7 - Advanced first aid kit.....	68

## List of figures

Figure 1 - Examples of some common hazards teams may face .....	36
Figure 2 - Talk, reach, throw .....	37
Figure 3 - Zoning .....	38
Figure 4 - Rescue or recovery operations.....	42

# 1. Introduction

## Background

In spring 2006 the Department for Environment, Food and Rural Affairs (Defra) undertook a detailed capability assessment of flood emergency planning and preparedness in England and Wales, based on the outputs of a National Capability Survey undertaken the same year. The analysis showed a shortfall in capability to rescue people when compared against the planning assumptions for a severe East Coast flood.

The floods in summer 2007 tested flood rescue capability across England. Sir Michael Pitt's review praised the role of many organisations carrying out flood rescue, including both statutory and voluntary organisations. The Pitt Review concluded that a national framework (Concept of Operations) was required, establishing standards for typing and accreditation of rescue teams and setting standards for equipment and training.

The Defra Flood Rescue Concept of Operations was produced as part of the project along with a Flood Rescue National Asset Register. This register contained accredited teams which met the team typing standards, enabling teams to be deployed nationally in the event of a wide area flood incident. This facilitates different local capabilities being 'plugged' seamlessly into a regional or national response during wide area flooding.

In 2018 Major General Tim Cross CBE led a Multi-Agency Flood Plan Review identifying areas for improvement in the flood sector; the recommendations from that review have been considered during the update of this document.

## Scope of this document

This updated Flood Rescue Concept of Operations (FRCO) sets out the processes for managing and maintaining flood rescue capability and the national coordination of flood rescue assets in England. It builds upon the original document, last revised in 2012, and follows a 12-month period of consultation with stakeholders.

This document serves as a basis for coordination between government departments, emergency responders including the blue-light services, and other agencies, in meeting the country's requirements for flood rescue. The intended audience for this document is:

- flood rescue teams that are currently on, or who may wish to join the National Asset Register,
- other organisations involved in flood rescue but who do not have teams on the National Asset Register, such as the Maritime and Coastguard Agency, and
- statutory responders, including those who may operate as operational or sector commanders during a flood incident.

When partner bodies of a local resilience forum (LRF) are developing or revising Multi-Agency Flood Plans they should consider the Flood Rescue Concept of Operations to ensure that appropriate resources, both local and national, can be mobilised during times of flooding and all are operating on a similar basis.

The Flood Rescue Concept of Operations will:

- be the concept of operations for how organisations involved will respond to flooding incidents.
- provide the operational instructions for the management and engagement of flood rescue assets.
- identify the standards relating to response, training and equipment for flood rescue assets.

It will:

- ensure the best use of available resources in order to provide capability in the most efficient and effective manner.
- provide clarity on the coordination of search and rescue activity during severe flooding.
- provide a scalable approach, which can incorporate the existing and an expanded National Asset Register.
- inform the safe and efficient incorporation of accredited local resources.
- serve as a source of reference and basis for long-term planning.

The Flood Rescue Concept of Operations will provide the basis for a set of planning assumptions regarding:

- the type and quantities of equipment required according to team type.
- how and to whom that equipment is allocated and located according to team type.
- training required to operate the equipment in each organisation.

This document will be reviewed periodically, at least every three years, and updated as necessary to ensure it reflects current legislation and emerging best practice.

## The FRCO and other key policies and documents

There are a number of legislative instruments and other documents that relate to the concept of operations. They include the following:

- Civil Contingencies Act 2004<sup>1</sup>.
- Flood and Water Management Act 2010<sup>2</sup>.

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<sup>1</sup> [www.legislation.gov.uk/ukpga/2004/36/contents](http://www.legislation.gov.uk/ukpga/2004/36/contents)

<sup>2</sup> [www.legislation.gov.uk/ukpga/2010/29/contents](http://www.legislation.gov.uk/ukpga/2010/29/contents)

- National Flood Emergency Framework<sup>3</sup>
- Sir Michael Pitt's Review into the floods of summer 2007<sup>4</sup>, published in 2008, and the government response<sup>5</sup>.
- National Flood Resilience Review published September 2016<sup>6</sup>.
- Multi-Agency Flood Plan (MAFP) review published June 2018<sup>7</sup> and the government response<sup>8</sup>.
- The central government concept of operations, setting out the UK arrangements for responding to and recovering from emergencies<sup>9</sup>.

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<sup>3</sup>[assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/388997/pb14238-nfef-201412.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/388997/pb14238-nfef-201412.pdf)

<sup>4</sup>[webarchive.nationalarchives.gov.uk/20100702215619/http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final\\_report.html](http://webarchive.nationalarchives.gov.uk/20100702215619/http://archive.cabinetoffice.gov.uk/pittreview/thepittreview/final_report.html)

<sup>5</sup>[www.gov.uk/government/collections/government-response-to-the-pitt-review](http://www.gov.uk/government/collections/government-response-to-the-pitt-review)

<sup>6</sup>[www.gov.uk/government/publications/national-flood-resilience-review](http://www.gov.uk/government/publications/national-flood-resilience-review)

<sup>7</sup>[www.gov.uk/government/publications/multi-agency-flood-plan-mafp-review](http://www.gov.uk/government/publications/multi-agency-flood-plan-mafp-review)

<sup>8</sup>[www.gov.uk/government/publications/multi-agency-flood-plan-mafp-review-government-response](http://www.gov.uk/government/publications/multi-agency-flood-plan-mafp-review-government-response)

<sup>9</sup><https://www.gov.uk/government/publications/the-central-government-s-concept-of-operations>

## 2. Response to Flood Rescue

### Central government response

A range of partners are involved in planning for and dealing with flooding events at national and local levels. At a national level, Defra is the lead government department (LGD) for planning and responding to flooding. The Ministry of Housing, Communities, and Local Government (MHCLG) is the lead government department for flood recovery.

When flooding is forecast, using information from the Flood Forecasting Centre, Defra will coordinate with other government departments, so they can be prepared to respond to potential flooding. This allows local partners such as responder organisations within LRFs to escalate any flood plans.

During a flooding incident, Defra will provide oversight of an incident, coordinate the cross-government response and advise ministers and other government departments about the incident. MHCLG will provide a government liaison officer (GLO) who will attend the Strategic Coordinating Group, ensuring the flow of information between the local area and central government. In a flood event of any size, Defra will ensure that local responders have access to national resources as required, for example, the national flood rescue assets and military aid to the civil authorities (MACA).

Depending on the scale of the event, the government response can be escalated as required, initially managed within Defra through its Emergency Operations Centre. For significant flood events, the National Flood Response Centre may be opened, with all relevant government departments and agencies working from the same location. More severe incidents can be further escalated with central coordination, within COBR, by the Civil Contingencies Secretariat.

Other government departments feed in on their own policy areas during an incident, this most commonly includes the Department of Health and Social Care, the Department for Transport, and the Department for Business, Energy and Industrial Strategy.

### Local response

The Civil Contingencies Act (2004) requires Category One Responders to maintain plans for preventing emergencies and for reducing, controlling or mitigating the effects of emergencies in both the response and recovery phases. LRFs are encouraged to develop specific flood plans, a multi-agency flood plan (MAFP), to complement other partners' plans, and to provide more detail to generic Major Incident Plans. In early 2019, Defra issued revised guidance on MAFPs that sets out the purpose, considerations, suggested construction and key content.

The reason for having a specific flood plan is because of the complex and diverse nature of flooding and the consequences that arise, requiring a comprehensive and often sustained response from a wide range of organisations. All partner organisations within an LRF area should work collaboratively to provide an effective flood response that protects the public, property and the environment, regardless of the source of the flooding.

Each MAFP needs to adequately address river, coastal/tidal, surface water and groundwater flood risk and the associated emergency response arrangements. An MAFP should be clear on the roles and responsibilities across agencies to prepare, respond and recover from flood events in their local area. The plan may contain all the information or point clearly to where the information can be found.

## National Flood Rescue Assets

### Flood Rescue National Asset Register

Defra holds the Flood Rescue National Asset Register, a list of teams or assets that voluntarily join the register and maintain availability for national deployment. These assets include teams from the Fire and Rescue Service, Lowland Rescue, Mountain Rescue, the Police Service, the Royal National Lifeboat Institution (RNLI), the Royal Society for the Prevention of Cruelty to Animals (RSPCA) and many other organisations. Some organisations will have multiple assets declared on the register.

A system of team typing, outlined in Table 1 below, is utilised to provide a scalable and consistent response. The register only records declared and assured assets, who meet the 'team type B' (powered boat) or 'team type C' (boat without engine) criteria. Prior to joining the register, the capability of each team will have been assessed. Information on the requirements for teams and how to join the register can be found in Annex A.

A memorandum of understanding (MoU) between Defra and an organisation on the National Asset Register sets out a broad agreement to release assets to national events when reasonable requests are made. All teams will be mobilised with a team commander who will command their team in the operational area, and a team manager to support the team and ensure welfare arrangements.

Agencies are expected to maintain their respective teams in accordance with the FRCO standards, paying particular attention to the training, equipment, first aid and team typing annexes. All assets are required to complete regular assurance assessments through a combination of self-assessment and site assurance visits. This ensures they continue to comply with the necessary standards and ensures an asset's capability is known at national events.

**Table 1 - Team type capability overview**

Team Type	Capability
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<b>A</b>	Amalgamation	<ul style="list-style-type: none"> <li>• Amalgamated teams</li> <li>• These will be known as A – B for powerboats and A – C for mixed teams</li> <li>• Teams of this nature are not pre-declared but are established during the incident with members and equipment from assets from the National Asset Register</li> <li>• An example would be embedding a health care professional<sup>10</sup>, police officer, or RSPCA member in a B or C team</li> </ul>
<b>B</b>	Water & Flood Rescue Boat Team	<ul style="list-style-type: none"> <li>• Technical water rescue</li> <li>• Search operations within the water environment</li> <li>• Powerboat rescue operations</li> <li>• In-water operations</li> <li>• Flood response</li> </ul>
<b>C</b>	Water & Flood Rescue Technician Team	<ul style="list-style-type: none"> <li>• Technical water rescue</li> <li>• Search operations within the water environment</li> <li>• In-water operations</li> <li>• Non-powered boat operations</li> <li>• Flood response</li> </ul>
<b>D</b>	Water & Flood Rescue First Responder Team	<ul style="list-style-type: none"> <li>• Support operations</li> <li>• Limited in-water operations</li> <li>• Bank-based safety and search</li> <li>• Flood response</li> </ul>

Although the National Asset Register only has team types B and C, the criteria for team type A and team type D are also outlined in Table 1, and the minimum requirements for a team type D are set out in the team typing matrix in Annex J.

A team type A is an amalgamation of two or more declared assets to meet a risk or community need. An amalgamated team could be formed with responders from different organisations to address a specific need, as required. These teams would be identified as ‘A-B’ for an amalgamated team which meets team type B specification or ‘A-C’ for an amalgamated team which meets the team type C specification.

LRFs routinely hold a list of local flood rescue assets, it is recommended that local assets also meet the team typing standards for B, C and D teams to better enable local and national assets working alongside each other during an incident. As part of their response to a flood incident, LRFs should utilise local assets identified within their MAFP before they access assets on the National Asset Register. Further information on requesting assets and how assets are mobilised is outlined in Annex B.

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<sup>10</sup> For the purposes of this document, “health care professionals” generally refers to paramedics and doctors with pre-hospital emergency care qualifications and/or /experience.

Information on the additional specialist capabilities and rescue provision that are available from several agencies is detailed in the Operational Considerations section.

## Flood Rescue Tactical and Strategic Advisers

Defra has a group of specialists from the flood rescue sector who are available to respond nationally, as required, to support wide area flooding events. Flood Rescue Tactical Advisers can operate at all levels of incidents. Flood Rescue Strategic Advisers are Flood Rescue Tactical Advisers who have additional skills and knowledge to provide support and advice to Strategic Coordinating Groups (SCGs) and to Defra as lead government department. A number of flood rescue advisers have been trained in the European Union Civil Protection Mechanism to assist Host Nation Support (HNS) for international agencies.

**Table 2 - Flood Rescue Advisers**

Flood Rescue Tactical Adviser	<p>Based across England and Wales and deployed nationally as required.</p> <p><b>Deployment activity</b></p> <ul style="list-style-type: none"> <li>• Provide advice to tactical and strategic commanders, primarily at Tactical Coordinating Groups (TCGs).</li> <li>• Operate at all levels of incidents as required.</li> <li>• Credentialing assets within the multi-agency strategic holding area (MASHA).</li> <li>• Assess specific risks to support operational response.</li> <li>• Support National Resilience Fire Control.</li> <li>• Provide water &amp; flood response safety briefings to organisations, e.g. Ministry of Defence.</li> <li>• Support the management of Host Nation Support (international assets).</li> </ul> <p><b>Preparation and non-response activities</b></p> <ul style="list-style-type: none"> <li>• Support regional flood working groups.</li> <li>• Support multi-agency flood plans.</li> <li>• Support flood/water exercises.</li> <li>• Maintain Continuous Professional Development (CPD) as per Defra requirements.</li> </ul>
Flood Rescue Strategic Adviser	<p>In addition to the above:</p> <ul style="list-style-type: none"> <li>• Provide advice to the National Flood Response Centre (NFRC).</li> <li>• Provide additional advice to strategic commanders and Strategic Coordinating Groups (SCGs).</li> </ul>

Flood rescue advisers should be requested at the earliest opportunity during a flood event, or in the preparation stages, especially if flood warnings indicate their assistance may be of benefit. Subject to availability, two flood rescue advisers can be mobilised to an LRF, and a third flood rescue adviser would be used in a supporting role, operating remotely. The mobilisation of two advisers enables appropriate advice and a more timely review to be developed. It facilitates 24-hour support, based on 12-hour shift working and the flexibility to establish early credentialing, if required. The supporting adviser may only be required in the early stages of an incident, to support the gathering of information and relevant intelligence for the advisers who are travelling to the incident. The process for requesting flood rescue advisers is outlined in Annex B – Mobilisation of National Assets.

Details of how the costs and expenses of national asset teams and flood rescue advisers can be met are set out in the Post-Incident Considerations section.

## 3. Incident Command

### Joint Emergency Services Interoperability Principles (JESIP)

A successful response to flood incidents is based on a joint response involving multi-agency partners. The Flood Rescue Concept of Operations is based on the Joint Emergency Services Interoperability Principles (JESIP) to help ensure a successful response to flooding is delivered and that the complex coordination required is provided. Further information on JESIP can be found at [www.jesip.org.uk](http://www.jesip.org.uk).

#### Principles for joint working

To enable effective multi-agency approach, the five principles for joint working should be utilised:

**Co-locate** – Co-locate with commanders as soon as practically possible at a single, safe and easily identified location near to the scene.

**Communicate** – Communicate clearly using plain English.

**Co-ordinate** – Co-ordinate by agreeing the lead service. Identify priorities, resources and capabilities for an effective response, including the timing of further meetings.

**Jointly understand risk** – Jointly understand risk by sharing information about the likelihood and potential impact of threats and hazards to agree potential control measures.

**Shared situational awareness** – Shared situational awareness established by using M/ETHANE and the Joint Decision Model.

#### Joint decision model

The Joint Decision Model has been developed through JESIP and can be used for a rapid onset or a rising tide emergency to enable the establishment of shared situational awareness. When arriving at the scene of a significant incident, it is essential that an understanding of the situation is quickly established and actions are jointly agreed.



## M/ETHANE Model

The M/ETHANE model is the reporting framework for flood incidents providing a structure for responders to share incident information. For non-major incidents, then reporting follows an ETHANE structure. The information received will support the shared situational awareness of the incident.

<b>M</b>	<b>MAJOR INCIDENT</b>	Has a major incident or standby been declared? (Yes / No - if no, then complete ETHANE message)	<i>Include the date and time of any declaration.</i>
<b>E</b>	<b>EXACT LOCATION</b>	What is the exact location or geographical area of the incident?	<i>Be as precise as possible, using a system that will be understood by all responders.</i>
<b>T</b>	<b>TYPE OF INCIDENT</b>	What kind of incident is it?	<i>For example, flooding, fire, utility failure or disease outbreak.</i>
<b>H</b>	<b>HAZARDS</b>	What hazards or potential hazards can be identified?	<i>Consider the likelihood of a hazard and the potential severity of any impact.</i>
<b>A</b>	<b>ACCESS</b>	What are the best routes for access and egress?	<i>Include information on inaccessible routes and rendezvous points (RVPs). Remember that services need to be able to leave the scene as well as access it.</i>
<b>N</b>	<b>NUMBER OF CASUALTIES</b>	How many casualties are there, and what condition are they in?	<i>Use an agreed classification system such as 'P1', 'P2', 'P3' and 'dead'.</i>
<b>E</b>	<b>EMERGENCY SERVICES</b>	Which, and how many, emergency responder assets and personnel are required or are already on-scene?	<i>Consider whether the assets of wider emergency responders, such as local authorities or the voluntary sector, may be required.</i>

## Command, control and coordination

The duty to coordinate the response to civil emergencies lies with the police, who have the duty for coordination during major flood events at both a strategic and tactical coordination level.

During a major flood event, flood rescue assets will be deployed from a wide range of organisations including Category 1 and 2 responders as well as voluntary organisations. In order to ensure a safe and efficient response, it is essential that the multiple organisations are capable of operating under a unified command structure.

Command, control and coordination are essential concepts in a multi-agency response. In a large-scale, multi-agency coordination situation a control structure is convened at strategic, tactical and operational levels. The principles of command and control are scalable and can be applied across different levels from national to local, and in a multi-agency setting.

The following information draws on information from Authorised Professional Practice<sup>11</sup> and sets out the general duties for all responders at the different levels of the command structure. It references how a flood response fits into the structure at the operational level and below.

### Span of control

This forms an integral part of safety and effective communication within the command system. The command system requires that the direct lines of communication/areas of involvement of any commander be limited to enable the individual to deal effectively with those areas and the flow of information.

In a rapidly developing or complex incident, the span of control (communication) may be as small as two or three lines of communication. In a stable situation at an incident, six or seven lines may be acceptable; though it is recommended that all commanders limit their span of control to four to five lines of direct involvement.

### Strategic command

It is essential that appropriate provisions are implemented as soon as possible to support the strategic commanders and the Strategic Coordinating Group (SCG). The scale and nature of this support will be relative to the incident.

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<sup>11</sup> Authorised Professional Practice is the source of professional policing practice, as authorised by the College of Policing.

## **Strategic Coordination Centre (SCC)**

The function of the Strategic Coordination Centre (SCC) is to provide a location and infrastructure to enable the Strategic Coordinating Group (SCG) to coordinate their response. LRFs should have a flexible plan, to open certain elements of an SCC to provide the support necessary for specific incidents.

## **Strategic commanders**

The strategic commander from each agency has overall authority on behalf of their agency. They are responsible for the resources of their own agency and for formulating their single agency strategy for the incident.

The overarching aim of the strategic commander is to protect life, property and the environment by setting the policy, strategy and the overall response framework for the incident and for both the tactical and operational command levels to act on and implement. The suggested initial actions for strategic commanders are outlined below and take into consideration learning from JESIP.

## **Strategic Coordinating Group (SCG)**

The purpose of a Strategic Coordinating Group is to take overall responsibility for the multi-agency management of the emergency and establish the policy and strategic framework within which lower levels of command will operate. The Strategic Coordinating Group:

- determines and promotes clear strategic aims and objectives and reviews them regularly.
- establishes a policy framework for the overall management of the event or situation.
- prioritises the requirements of the tactical tier.
- formulates and implements media and communication plans, possibly delegating this to one responding agency.
- directs planning and operations beyond the immediate response in order to facilitate the recovery process.
- ensures the national Situation Report (SitRep) template is completed to promote shared situational awareness across SCG members.

The SCG does not have the collective authority to issue executive orders to individual responder agencies. Each organisation retains its own responsibilities and command authority, operating in their normal way.

The SCG sets strategy, which is cascaded to the Tactical Coordinating Group (TCG) that in turn undertakes multi-agency tactical planning. In the event that the incident is 'bottom up' and the TCG forms before the SCG (or no SCG is required), they may fulfil both the strategic and tactical planning functions.

TCG representatives cascade their agency requirements and actions to the organisational commanders who carry out the detailed single agency planning and maintain the command and control of deployed resources.

### **Standing strategy**

The SCG may take time to set up and to obtain a clear picture of unfolding events. As a first priority, it must formulate a strategy with key objectives that encompass and provide a focus for all of the activity of the responding organisations.

JESIP doctrine sets out the following standing strategy to enable immediate response activity in an emergency. The aim is to contain the situation in order to save lives and limit the effect of both the direct consequences created by the emergency event and any indirect consequences caused by responder activity.

#### **Governing objectives**

1. Protect and preserve life.
2. Mitigate and minimise the impact of challenging events.
3. Maintain life-support infrastructure and essential services.
4. Promote restoration and improvement activity in the aftermath of a challenging event.

#### **Enabling activity**

The following activities need to be in place to promote an effective response.

1. The creation and sharing of an agreed situation report of unfolding events across the responding organisations.
2. Simplified procedures for making joint decisions and issuing timely direction.
3. Prioritisation of tasks.
4. Allocation of resources.
5. Cross-boundary/national cooperation between partners.

#### **Functional activities**

The governing objectives above are designed to encompass but not prioritise (that is the function of commanders at every level) the following list of activities:

1. Saving and preserving human life.
2. Relieving suffering.
3. Containing the emergency, limiting its escalation and spread.
4. Providing the public and businesses with warnings, information and advice.
5. Protecting the health and safety of responding personnel.
6. Safeguarding the environment.
7. Protecting property as far as is reasonably practicable.
8. Maintaining or restoring critical activities.

9. Maintaining normal services at an appropriate level.
10. Promoting and facilitating self-help within the community.
11. Facilitating the recovery of the community (including humanitarian assistance, economic infrastructure and environmental impacts).
12. Evaluating the response and recovery effort.
13. Identifying and taking action to implement lessons identified.

## **Media and communication strategy**

SCGs are responsible for the development of communication and media strategies. They should ensure that these strategies provide clear guidance on both the resourcing and the effective use of all media (including social media) in major incidents.

## **Tactical command**

Tactical command works between the strategic and operational levels of command; interpreting strategic direction, developing a tactical plan and coordinating activities and assets.

### **Tactical Coordination Centre (TCC)**

The tactical coordination centre should house the resources required to effectively manage a fast-moving incident.

### **Tactical Coordinating Group (TCG)**

The tactical commanders of all the responder agencies should come together to form a Tactical Coordinating Group (TCG).

The TCG should meet at a pre-designated location as soon as practical to determine a coordinated response at the tactical level. The TCG should meet as frequently as required by the circumstances of the incident. The meetings are set within an agreed schedule to ensure the updates are available to the SCG and nationally. Key decisions should be recorded for audit purposes. The Joint Decision Model should be used to assist in forming the standing agenda for TCG meetings.

During large-scale or widespread incidents, many agencies will be responding at a sub-national level and may not be able to provide representation at a tactical level. Where agencies are responding at SCG level or above, it is the role of SCG chair to ensure that TCGs are updated with the appropriate information.

In incidents where an SCG is established, TCG responsibilities may be based on a functional or geographical basis and a number of tactical coordinating groups may be required.

## **Tactical commanders**

First responders are responsible for tactical decisions in the initial stages of an incident. Once the scale and nature of the flood incident is known, responding agencies appoint tactical commanders/representatives for their organisations. Agencies may also send representatives to the scene and other appropriate locations.

Communication and coordination between commanders at a scene are vital. If possible, tactical commanders should be located at a mutually agreed location where they can maintain effective joint command of the operation. This includes effective joint working with other services and additional factors such as access to communications systems. In some circumstances, a visit to the scene may be required.

Tactical commanders may be in place before strategic commanders and, if so, they are likely to take command of the incident. Tactical commanders need to set priorities before the strategic commander has set a strategy.

With rapid onset flooding incidents, the initial tactical commander may use the following prompts as considerations in understanding their role:

1. What – what are the aims and objectives to be achieved?
2. Who – who by? what resources are available?
3. When – timescales, deadlines and milestones for delivering tasks
4. Where – what locations?
5. Why – what is the rationale within the overall aims and objectives set by the strategic commander (if in place)?
6. How – how are these tasks going to be achieved? what barriers to achieving them may be encountered?
7. Consider requesting the deployment of a Flood Rescue Tactical Adviser

## **Operational command**

Operational command will be responsible for a defined geographical area and may be required to divide areas of operation into sectors based on risk and expected activity levels. This should ensure effective and achievable spans of control for operational and sector commands. The operational command point will be responsible for managing resources within their defined geographical area, maintaining a log of what resources are within their area of operations, a record of tasks ongoing, planned and completed and by whom.

Operational command may vary significantly to meet the specific requirements of an incident, such as the size, nature, hazards and activities to be completed. Operational command could be a single asset operating under a single commander to carry out a task, e.g. delivery of medications to an isolated remote, rural farm. Conversely, the operational command may have many sectors with a range of flood rescue partners carrying out the evacuation of multiple flood victims or the search of multiple defined geographical areas. This will require a larger and more complex command structure.

## **Operational commanders**

The operational commander deploys the resources within a functional or geographical area and implements the directions of the tactical commander. As the incident progresses and more resources attend the scene, the level of supervision increases proportionally and will often be divided into sectors. The operational commander will normally require command/incident support. Roles may include (but are not limited to):

- Sector commander (if sectorisation is in use)
- Communications
- Loggist
- Tasking officer
- Debriefing officer
- Additional roles such as welfare and health and safety may also be considered.

During a flooding incident, the operational commander will normally manage responders from a range of response organisations. They will be supported by a qualified Defra Module 5 - Water & Flood Incident Manager, if they are not qualified themselves.

## **Sector command**

It may be necessary to sectorise activity under an operational commander to enable the appropriate assignment of tasks. An operational sector can be a physical area of the incident ground or an aspect of service operations, but the boundaries of responsibilities for operational sectors should be clearly defined.

## **Sector commanders**

A sector commander must be appointed for each sector and will report to the operational commander when designated. The sector commander may be responsible for several assets or for a single asset for a specific task.

## **Team commanders**

Team commanders will manage a typed team appropriate to their Defra training module qualification. They should operate within the principle of subsidiarity; that means making local on-scene decisions based upon their own assessment of the situation whilst meeting the objectives of the overall plan. Team commanders must ensure that they operate within the overall incident command system. When team, sector, or operational commanders become aware of an escalating incident and the potential need for additional resources, this must be fed back at the earliest opportunity using the M/ETHANE reporting framework.

Team commanders must carry out a dynamic risk assessment and, wherever possible, inform sector/operational command of the hazards and control measures. They must liaise with sector or operational commanders to confirm the plan of action in the event of a flood

responder indicating that they have an emergency. Assets on the National Asset Register will routinely be tasked by a range of agencies in both operational and sector structures, but all organisations retain control of their own resources and personnel deployed at a scene and must coordinate with other organisations.

## **Other command considerations**

### **Area(s) of Operations (AoO)**

To allow the appropriate assignment of tasks, it is necessary to clearly identify the boundaries of operations and responsibility. Area(s) of operations may cover vast areas including the entire wide-area flood incident managed by all levels of the command structure including Strategic Coordinating Groups, Tactical Coordinating Groups and the more defined areas managed by operational command.

### **Tabards**

It is essential that all commanders are easily identifiable on the ground by the use of identification tabards, which should comply with JESIP Principles. The Flood Rescue Tactical Adviser tabard is pictured below.



### **Briefing model**

Once commanders have made decisions and decided on actions, information must be relayed in a structured way that can be easily understood by those who will carry out actions or support activities. Using JESIP's IIMARCH (Information, Intent, Method, Administration, Risk Assessment, Communications and Humanitarian Issues) as a guide a brief can be prepared in appropriate detail, <https://jesip.org.uk/briefing>.

### **Records**

Good record keeping is essential to ensure that search and rescue efforts are not wasted and are properly focused. The use of tasking forms will enable a record of taskings to be

maintained. Additional records, such as decision logs, narratives and action logs may also be required. The use of a loggist to support the recording of decisions should be considered. Handover briefings should be recorded and help to maintain a snapshot of the current operational status. Records may be required to support post-incident reviews, debriefs, inquiries and to provide evidence to relevant authorities.

## Incident command structures

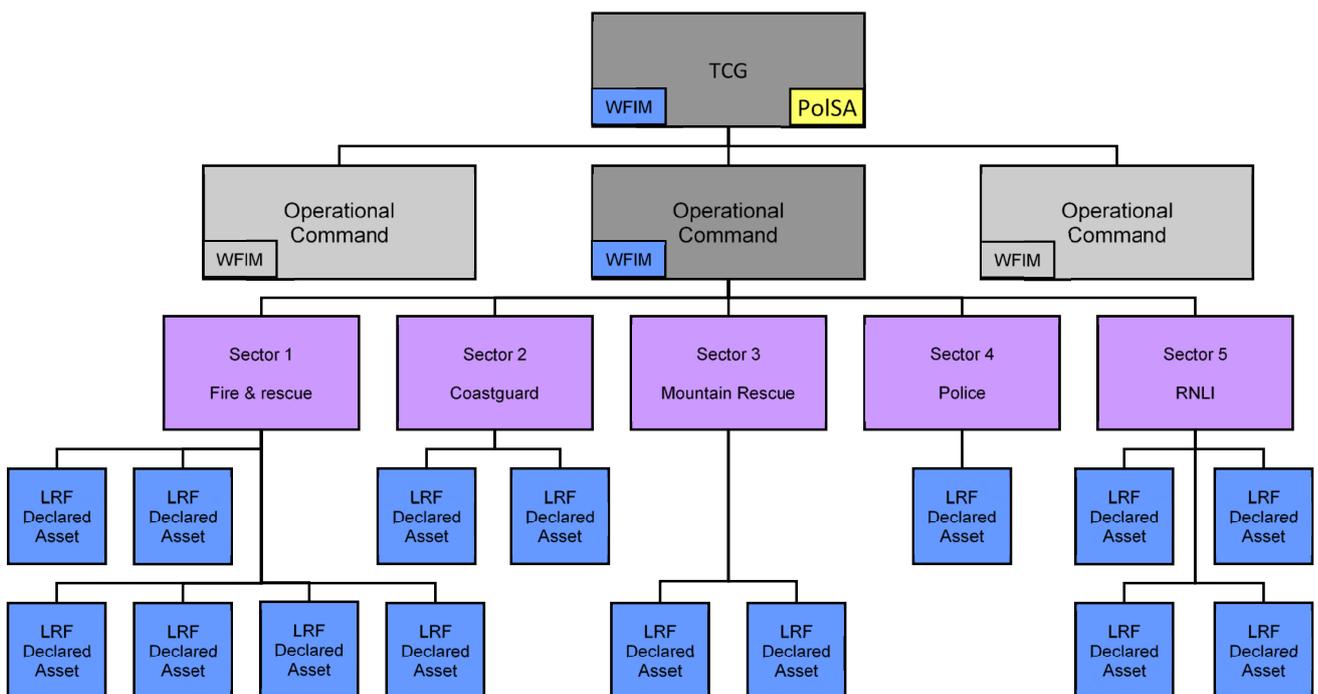
The following example structures have been developed to demonstrate how command structures could operate for flood incidents of different scales. They do not show all partner responders in the SCGs and TCGs or all those agencies who may be involved in rescue teams. The roles identified at different levels in the command structures are where those roles may be required to operate during an incident.

Key:

- FRSA – Flood Rescue Strategic Adviser
- FRTA – Flood Rescue Tactical Adviser
- PoISA – Police Search Adviser
- WFIM – Water & Flood Incident Manager

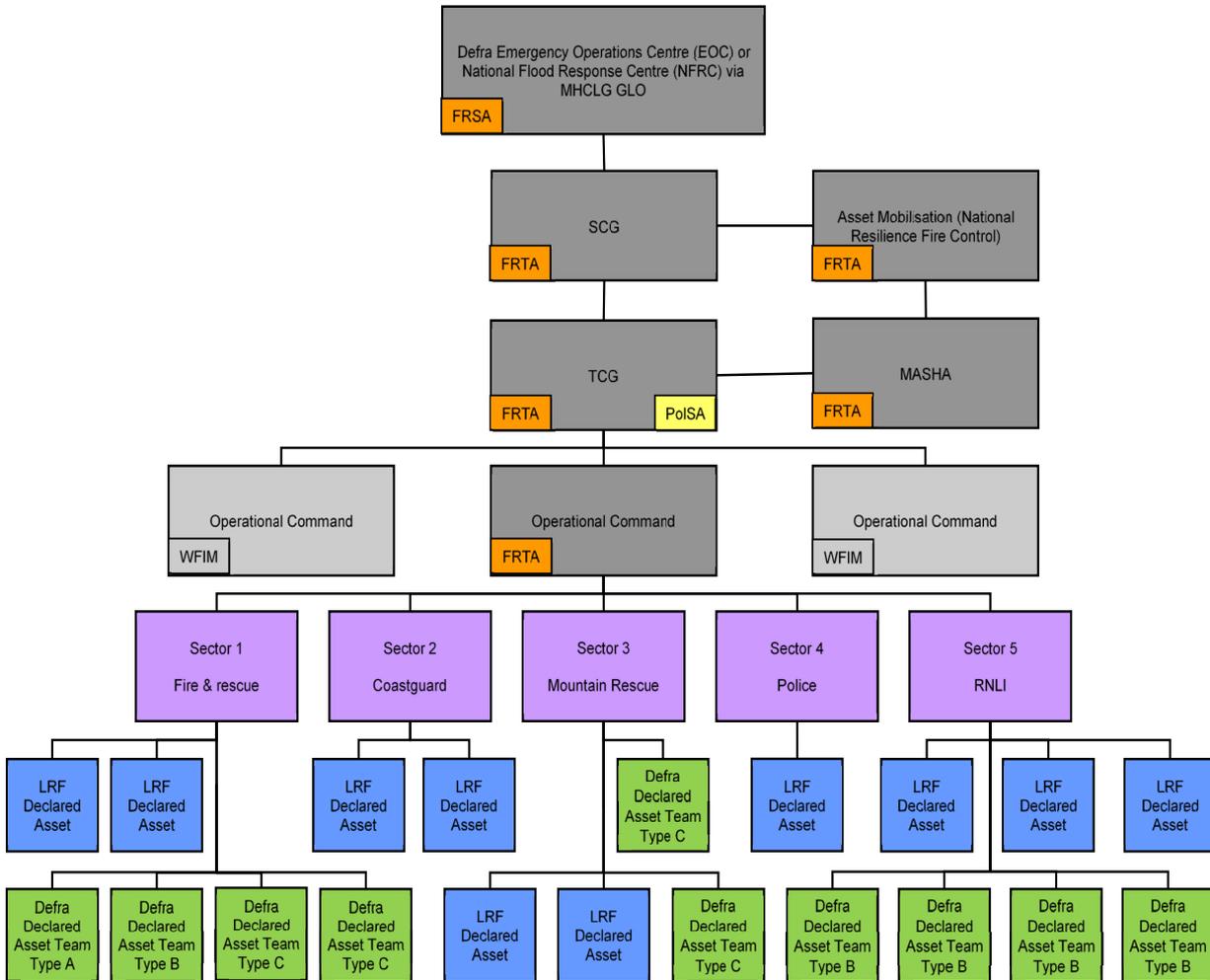
### A multi-agency response to flooding in a single area

This structure demonstrates how a single local resilience forum may respond to a flooding incident when only local flood rescue assets are mobilised.



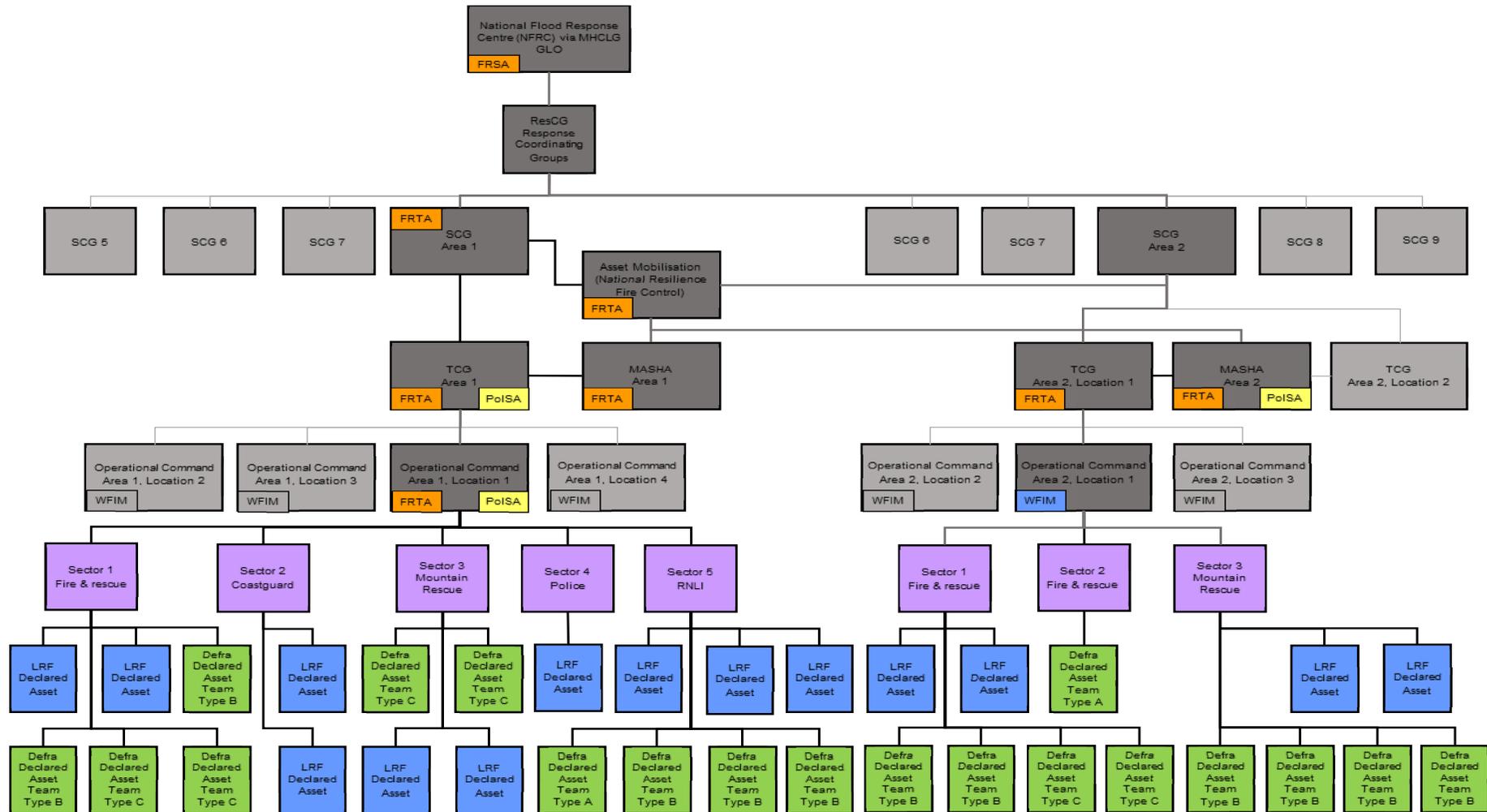
## National support to a multi-agency response to flooding in a single area

This structure demonstrates how a single local resilience forum may respond to a flooding incident when assets from the Defra Flood Rescue National Asset Register have been requested, in addition to local assets.



## National support to a multiple area, multi-agency response to flooding

This structure demonstrates how multiple local resilience forums may respond and operate together during a widespread flood incident.



## 4. Communications

Communication structures will vary between LRFs and arrangements for communication and information exchange may be contained within a generic emergency plan or a separate communication plan. If this is not the case, it is recommended that LRFs include this information in their Multi-Agency Flood Plan.

Operational command should maintain contact with all assets within their command and confirm updates at agreed regular intervals to monitor welfare and maintain lines of communication. Sector commanders (when in use) may complete this, and sector commanders will then confirm communication with operational command. In the event of a loss of communications with an asset, commanders will respond accordingly to re-establish communication.

All flood rescue assets must ensure that they hold a suitable and agreed means of communications. It is likely that the primary means of communications will be Airwave radio but may include marine band Very High Frequency (VHF), mobile telephones or other systems appropriate to the incident.

### **Airwave interoperability**

The Airwave network is used by all United Kingdom emergency services and it provides the capability for different organisations to communicate with one another via common talkgroups. Airwave can enable communication in situations where a face-to-face meeting is not possible, e.g. while commanders are travelling.

The police host primary multi-agency talk groups, but requests to activate them may come from other organisations. These are routed to control rooms via the police hailing talkgroup. It may not be necessary for the police to join the talkgroup, but given their ownership, it is expected that the force will agree to any reasonable request made.

The relevant agencies and commanders should be informed which talkgroup is in use once it has been activated. Interoperability talkgroups should be configured in all control rooms, hand-held and vehicle-mounted radios. It is then agreed which control room will monitor that talkgroup throughout its operation. The early use of an Airwave Tactical Adviser should be considered, these can be requested via the TCG.

Not all agencies involved with the response will have access to Airwave radios and this must be factored into LRFs' plans.

## 5. Search

The overall responsibility for missing persons search management in the UK lies with the police, this continues when land suffers the effects of flooding. In the flooded environment, the majority of persons reported missing are located without suffering any harm. A small number will require search operations to be conducted. The police will coordinate search operations, though they will engage other agencies to assist in this and the management of operations.

The Police Search Adviser (PoISA) holds a Home Office licence and has a responsibility to plan, organise, and manage missing persons search. Whilst the PoISA will coordinate the overall search operations it is recognised that some functions will be supported by partner agencies with specific flood expertise including Flood Rescue Tactical Advisers or Water & Flood Incident Managers. This group can establish a search cell.

This section has been developed in conjunction with the National Police Search Centre, the National Crime Agency, and the Maritime and Coastguard Agency, to ensure flood search operations align with wider search response in England. It should be used as the basis for all flood search operations.

### **Aim of missing persons search**

The aim of a missing persons search is to locate a person who is missing or otherwise establish and confirm the person's whereabouts.

### **Objectives of missing persons search management**

The objectives of police missing persons search management are:

- to protect vulnerable people;
- to gain intelligence that will assist in locating a missing person;
- to gain evidence for the prosecution in missing person cases where there has been third-party involvement;
- to locate the missing person.

### **Definition of search**

The standard definition of search applies equally to a missing persons search as to all other searches; this is: 'the capability to locate specified targets using intelligence assessment, systematic procedures and appropriate detection techniques'.

## Definition of a missing person

A missing person is defined by the following statement:

*Anyone whose whereabouts cannot be established will be considered as missing until located, and their wellbeing or otherwise confirmed.*

(Authorised Professional Practice – Missing Persons, November 2016)

## Categories of Missing Person

Missing persons can be categorised in four ways:

- **Missing persons who are ill or injured** – Those persons who do not want to be missing but have suffered some injury or illness that has resulted in them not completing a journey or have been swept away.
- **Lost persons** – These are persons who are temporarily disorientated and would wish to be found, e.g. people who do not know where they are or who are unaccounted for.
- **Missing persons who have voluntarily gone missing** – These are persons who have control over their actions and who have decided on a course of action, e.g. they wish to leave home.
- **Missing persons under the influence of a third party** – These are persons who have gone missing against their will, e.g. abduction or murder victims.

Of the four categories, it is expected that the main two categories relating to the flood environment are ‘missing through illness or injury’ and ‘lost’, though other categories will at times be relevant.

While many people may be considered as high-risk missing persons in the flood environment, often many of the calls received by agencies are ‘concern for welfare’. These are calls from concerned relatives/friends unable to contact relatives/friends in affected areas. Each police service area will have a methodology to assess these as high or low risk. For major incidents, a casualty bureau may be required to manage these calls. A search cell may be required at an incident/sector level, or both, to match the complexity of the incident.

## Immediate search considerations

- Establish an incident search cell lead by a PoISA.
- Consider advising early evacuation to minimise future search activities.
- Mapping (& Geographical Information Systems) and logging.
- Information gathering:
  - Instigation of an ongoing regime of intelligence capture, assessment and dissemination
  - Witness statements including responders’ ground truth.
  - Aerial surveillance to improve mapping.

- Consider Cabinet Office for satellite imagery.
- Consider need for casualty bureau.

## **Incident Search Cell**

The Search Cell will be led by a PoISA with the additional consideration of the following:

- Flood Rescue Tactical Adviser or Water & Flood Incident Manager
- Tasking and Logistics Officer
- Debriefing and Intelligence Officer
- Loggist/RD mapping operative

## **Sector Search Cell**

Search Cell led by a PoISA with the additional consideration of the following:

- Sector commander trained/Water & Flood Incident Manager
- Tasking and Logistics Officer
- Debriefing and Intelligence Officer
- Loggist/RD mapping operative

Additional support may be required relating to:

- Search (including PoISA Critical Friend)
- Security
- Communications/Airwave Tac Ad
- Disaster Victim Identification (DVI)
- Combined Tactical Air Cell (CTAC)
- Sea Rescue Activity

## **Terms of Reference (ToR) Search Cell**

Wide-area flooding incidents, including flash floods and protracted events, present a complex challenge for search situations. The search cell should be established as soon as is practicable to both respond to known missing persons and also to develop a management system to support future search situations. A PoISA should act as the search cell manager responsible for the overall search taskings. It is recognised during a rising tide event this role will be initially filled by other responders, ideally trained Water & Flood Incident Managers who will hand over to the PoISA when available and will often continue to support the search cell.

## **Objectives of Search Cells**

- Facilitate and expedite the search decision-making to ensure a priority of search is identified.

- To triage the search requests and ensure that those most at risk are prioritised.
- To ensure the best use of the limited resources to best reduce the risk of harm to persons and property.
- Introduce a process to log and review all decisions made and actions taken within the rescue event to improve search response overall.
- The success of the Search Cell relies on the availability of suitably qualified, empowered representatives from the relevant responder organisations, able to make routine decisions on the commitment of search priorities without reference to their parent organisations.

## Police Search Adviser (PoISA) Risk Assessment

PoISAs will complete a risk assessment based on the acronym 'SCENARIO'. The PoISA will provide greater detail to each of the categories below.

- S** Specify item sought
- C** Confirm last location
- E** Establish circumstances of disappearance
- N** Note factors influencing discovery
- A** Analyse possible scenarios
- R** Raise search strategies
- I** Identify priority search
- O** Ongoing reassessment

## Planning and assessment.

Prior to searching, an assessment of the conditions and environment should take place. This will allow for operational sectors to be clearly identified. Map and ground reconnaissance are utilised to identify the highest priority areas and enhance the Common Operating Picture (COP).

Identifying the number of search assets required is a complex calculation based on environmental factors such as weather conditions, speed of flow and debris or hazards, locality of resources, and type and condition of people being evacuated or searched for.

Reception centres for mobile uninjured survivors should be clearly identified.

## Types of search in the flood environment

Search assessment - an assessment should be completed to improve intelligence and inform search planning and management.

<b>Initial Visual Checks</b>	An initial visual check (IVC) defines the immediate and lifesaving actions of a searcher for a person, or persons, or the recovery of significant items sought by means of a search response within a defined area using all senses to establish the presence or otherwise of the person or item
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<i>previously known as 'hasty' by some agencies</i>	sought. This method of search is conducted thoroughly 'at pace' to establish the presence or otherwise of a person/persons/items and effect immediate recovery in the event of life-threatening conditions.
<b>Systematic Search - Low Assurance</b>	A systematic search is the method of conducting a search with a clear defined brief, such as a geographical area. Low assurance may be an intended strategy to maximise areas searched. It may also be determined by the physical area being searched containing inaccessible areas due to hazards.
<b>Systematic Search - High Assurance</b>	A systematic search is the method of conducting a search with a clear defined brief, such as a geographical area. High assurance may be an intended strategy with the required resources and time being spent to provide a high assurance that if the missing person was in the area they are likely to be found.
<b>Limitations affecting the level of assurance</b>	<p>Limitations can inform the assurance levels for a search activity being high or low. The limitation may be that the rescue boat is not suitable for the flow and/or conditions, e.g. a 'risk' such as large debris in fast flowing water that exposes the search team to a danger that cannot be mitigated against.</p> <p>Should a low level of assurance be passed for part of a sector, it is important this is fed back to the sector commander/PolSA to enable a more suitable search asset or method to be considered.</p>

## Search resources

**Water margin search** - In areas where land is exposed, bank-based search teams can be deployed. Searches can be focused on the dry near-water margins (warm zone areas) and areas where water levels have dropped. Providing them with thermal imaging equipment, binoculars or other vision aids may enhance their detection capabilities.

These teams are not provided with equipment to conduct in-water search or rescue activities and will require additional support to effect anything other than non-buoyant rescues.

**Water search teams** - These teams have a limited ability to conduct search activities in-water (usually hazards, water depth and current will be the main limiting factors). These teams will be able to move through shallow water areas to reach search tasks. These types of teams can use unpowered boats to aid access to search taskings.

**Boat-based search** - In areas where it is difficult for personnel to operate, boat-based operations may be the best method of conducting searches. Boats may be used in a number of different ways including both declared assets and specialist assets, e.g. inshore lifeboats.

**Aerial Search** - Air assets can be provided by many agencies with several Category 1 responders, including the Environment Agency, having 24-hour drone response capability. LRFs should be able to provide details of local agencies with drone capabilities. Fixed wing assets can also support more traditional air assets such as helicopters from the National Police Air Service and Maritime and Coastguard Agency Search and Rescue service.

## Search techniques

It is recognised agencies vary in the use of terminology for search techniques. Whilst many include line search, corridor search, parallel track searches etc., assets will be tasked to complete a search of a sector and will use a number of different search patterns according to the specific task.

Search taskings will often see partners from varying agencies working together to complete a search tasking. Therefore, it is important that sector commanders work closely with team commanders to ensure a common language and understanding of how the search will be conducted. It is important that during debriefings plain language is used to ensure a clear understanding of what the search brief was, what and how the search was conducted (including the geographical and physical area completed) and limitations of the search.

## Search considerations

**Tasking Form** - The joint National Police Search Centre and Defra tasking form should be utilised for all search taskings and is available on ResilienceDirect and on POLKA within the PoISA Toolkit.

**Debriefing Form** - The joint National Police Search Centre and Defra debriefing form should be utilised for all search taskings and is available on ResilienceDirect and on POLKA within the PoISA Toolkit.

**Search area marking** - Effective search and rescue is exemplified by good incident command systems and sector control. All searches should be documented with an equal emphasis on both tasking and debriefing in order to gain an informed intelligence for future search considerations and for Tactical Coordinating Groups to maintain an overall picture and support resourcing.

Completed searches of properties should be logged using a suitable electronic system (capable of clear tasking and debrief recording) to capture details of the search completed. For buildings under significant water, GPS will be required, and it is a requirement for all B and C team types that they have access to this system.

In the event that online recording systems are not available, this data can be captured by reporting back via phone/Airwave or by completing a paper-based record which is later updated onto the mapping system. Paper-based systems may result in a gap in

intelligence, as information may not be fed back into the mapping system in a timely manner. Effective tasking through incident and sector command prevents duplication of property searches.

The act of marking buildings will require authorisation by the Strategic Coordinating Group in discussion with the senior Police Commander to enable security and other considerations to be managed.

In the event of a building collapse that requires the attendance of specialist urban search and rescue capability, a cordon will be handed over to the Fire and Rescue Service who will search using specialist procedures and search techniques appropriate for building collapse incidents.

**Place Last Seen (PLS) and Last Known Point (LKP)** - The place last seen (PLS) is the last confirmed location where the missing person was seen. The last known position (LKP) is the last location at which the missing person was known to have been. The LKP is established from clues at the location such as property, clothing or tracks while also considering impacts from hydrology. Ensure all witnesses have been spoken to and contact details maintained on the log.

**Search exit strategy** - As a general principle, search activity will continue until the missing person is located. There are occasions that missing persons may not be found, and the search needs to be called off. Search and rescue teams may be required to stop searching for a number of reasons, including the safety of the crew, and the final decision to call off a search lies with the police.

**Body Recovery From Water Study** - Certain factors can affect the movement and subsequent location of the human body in water and these variables could effectively determine the search parameters and the subsequent success of a recovery operation.

The 'Body Recovery From Water Study' is a UK-based study which started in 2009. The research is gathering data of international water recovery cases and is continuing to develop a practical tool to aid search and rescue operations. This mechanism will allow the search controller or other relevant parties to determine the likelihood of body buoyancy and therefore predict movement in inland water based on empirical evidence.

The core aims of the study:

- To collect data and share analysis of this data with the international search community and investigation teams regarding the movement of bodies in inland water.
- To enhance learning to make us more effective in the searching for and recovery of bodies in water.
- To minimise the risk to search personnel.
- To reduce search time to gain an earlier resolution in missing person cases.

- To provide sanitised information to public bodies so measures can be made to prevent drowning incidents.

The success of the research and the accuracy of the predictive model is dependent on data being submitted for analysis. The predictive model made from analysis will be updated periodically and results will be made available to the search, rescue and recovery community.

Responders are required to complete the following questionnaire for all dead bodies recovered from inland waterways: <http://www.bodywaterstudy.co.uk/survey.html>

## 6. Operational considerations

### Flood victim and casualty management

The majority of people affected by the impacts of flooding do not need medical interventions that require NHS Ambulance Service or onward hospital care. This group, often evacuated by rescue teams, are classified as flood victims.

Those people who have illnesses or injuries and do require medical care are referred to as casualties. The NHS Ambulance Service is the lead agency for patient care and casualty management within water and flooding incidents and has a specific legal duty of care to avoid any unreasonable delay in accessing and stabilising casualties.

The Ambulance Service commander will be required to ensure a casualty management plan is in place, which is suitable and sufficient to support the scale and requirements of the incident. Hazardous Area Response Team (HART) paramedics can provide NHS care to casualties within the flood environment as required.

At flood operations where persons are being rescued from either the water or properties, it is important that a casualty landing area is established. This will ensure casualties can be logged, receive medical attention and be decontaminated as necessary. Operational command will nominate an area for a casualty landing area and reception centre, which should be determined through liaison with the NHS Ambulance Service. Consideration should be given to:

- Accessibility of rescue assets
- Likely development of the incident
- Number of casualties
- Media access
- Security
- Access to decontamination
- Access for onward transport to casualty reception centres
- Access for medical services
- Consideration of disabled access.

Through their Multi-Agency Flood Plans, LRFs should outline a management plan for both flood victims and casualties who have been evacuated and/or rescued, as they will need onward support.

## Specialist capabilities

Agencies including the Maritime and Coastguard Agency, Fire and Rescue Services, Mountain Rescue, Lowland Rescue and the RNLI have additional flood rescue assets and responders that meet the standard of team type 'D' as detailed in the Flood Rescue Concept of Operations.

Many agencies can also provide specialist rescue provision, including the availability of flood rescue resources that meet the requirements of team types, B, C and D. Flood rescue advisers are updated periodically regarding specialist capabilities that are available nationally and internationally.

The following is a list of some of the other specialist rescue provision available:

- NHS Ambulance Service HART paramedics are Defra Module 3 trained with specialist skills to deliver patient care in hazardous environments. They are not a dedicated team but are able to form type A amalgamated teams with other responders.
- NHS Ambulance Service Special Operations Response Teams (SORT) have the equipment and training to decontaminate injured casualties in line with the NHS duty of care.
- Critical Care and Air Ambulance teams have the ability to provide NHS specialist care in some environments, such as lily pad (areas that are totally cut off by floodwater) communities.
- Drone capability exists within many Category 1 and 2 and NGO responders and should be considered to improve situational awareness and safety control during the management of wide area flooding.
- The Environment Agency has a range of specialist equipment capable of measuring watercourse depth and water speed; this information can be linked to digital mapping. The capability includes over 30 remote control vessels that are available nationally.
- Helicopters from both Maritime and Coastguard Agency Search and Rescue and the National Police Air Service have loudspeakers known as 'Skyshout' that can be used for warning and informing the public and to facilitate safety messages and evacuation.
- Major flood events will likely require deployment of a range of specialist assets from National Fire Chiefs Council's National Resilience such as High-Volume Pumps (HVPs) and Enhanced Logistics Support (ELS) vehicles. The Fire and Rescue Service's Urban Search and Rescue (USAR) teams may potentially be able to assist with the construction of landing platforms. The Fire and Rescue Service's Mass Decontamination Units (MDUs) can be used to assist the decontamination of

rescue personnel and casualties. This will be managed via the Fire and Rescue Service National Coordination and Advisory Framework (NCAF)<sup>12</sup>.

- RNLI have additional flood rescue teams as well as other specialist rescue assets. RNLI teams routinely work with the Maritime and Coastguard Agency's search and rescue helicopters in boat-based operations.
- Mountain Rescue teams have close working experience with helicopters including the Maritime and Coastguard Agency search and rescue helicopters. They are aware of helicopter operations and are used to operating in areas that are difficult to access. They have good multi-agency communications in many parts of the UK.
- RSPCA has a flood rescue capability to deal with animals that includes Module 3 trained members, as well as a number of boats.
- The Radio Amateurs' Emergency Network (RAYNET) has great expertise in assisting different agencies and organisations in establishing communication networks.
- Mountain Rescue and Lowland Rescue have personnel with good knowledge of formal search procedures and can work well with local police search advisers.
- The European Union Civil Protection Mechanism (EUCPM) has the ability to provide support through flood rescue assets. The EUCPM allows for both international support into the UK and for the UK to provide assistance internationally.

## **Water and flood risks**

It is essential that responders appreciate the hazards associated with working in, on, or near water (examples provided in Figure 1). Operating in flood environments is dangerous and the appropriate training, equipment and command are required to reduce risks as far as reasonably practicable. While some floods dissipate quickly many are protracted. It is important that organisations risk assess their team activities prior to deployment and responders should also be trained in basic health and safety awareness, including:

- Awareness of Health and Safety at Work regulations, including the responsibilities of employees and employers.
- Working knowledge of the risk assessment process, including analytical and dynamic risk assessments.
- Manual handling.

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<sup>12</sup> <https://www.gov.uk/government/publications/national-coordination-and-advisory-framework-for-england>

**Figure 1 - Examples of some common hazards teams may face**

Access	River current/flow	Slips, trips and falls
Variable flow rates	Number of rescues	Low visibility
Manual handling	Strainers/siphons	Falling equipment
Drowning	Entrapment	Hazardous materials & waterborne diseases
Hypothermia/fatigue	Driving	Electricity
Helical flow	Debris	Force of water
Laminar flow	Electrical hazards	Inspection covers
Weirs/stoppers	Eddies	Weather
Actions & transportation of casualties/animals	Water level liable to change continually	Moral pressure to act/decision to deploy team/mission creep

## Hierarchy of rescue

**Rescue Philosophy** - The basic principles of any rescue organisation are:

1. Self
2. Team
3. Casualty

There are two types of rescue:

- *Conditional rescue* – Relies upon the victim doing something to assist in their rescue, e.g. a throw line rescue.
- *True Rescue* – Requires no assistance from the victim in their rescue, e.g. unconscious or injured victims.

Responders should choose the most appropriate rescue technique (see Figure 2) for the situation they are faced with.

Figure 2 - Talk, reach, throw



## Zoning

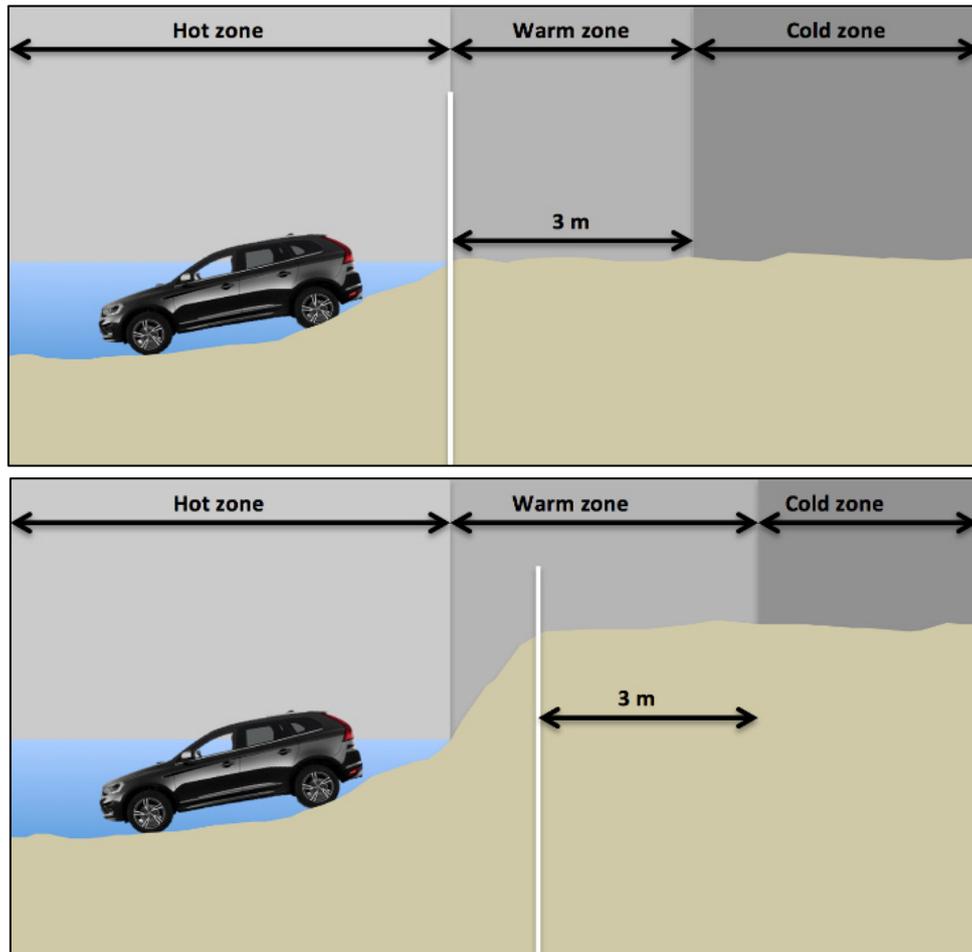
An integral part of managing safety at a flood incident is effective control of the inner and outer cordon. Zoning is required to ensure the appropriate response resources are used and that responders operate in the correct locations.

**Hot Zone** - This is the area is covered by water and is the high-risk area. Operations in the hot zone should be restricted to trained in-water responders who are appropriately equipped for the environment.

**Warm Zone** - This is the area adjacent to the water and remains a risk area to responders. A minimum of 3 metres should be maintained from the water. This distance should be increased depending on terrain, e.g. when operating near slopes (see Figure 3). Operations in the warm zone should be restricted to responders who are appropriately trained in self-rescue techniques and who are equipped for the environment.

**Cold Zone** - The cold zone is the safe area located outside the risk zones.

**Figure 3 – Zoning**



### Individual identification & lighting

A system of identification using helmet and light colours is used, to ensure that all team types and personnel are identifiable. This ensures that operational and sector commanders, tasking officers and others can determine capability and teams and personnel are correctly tasked. The marking of hazards can in part be achieved by the use of blue lights. Blue lights are also used to identify structural monitoring equipment used by Urban Search and Rescue (USAR) teams.

**Table 3 - Helmet and light colours**

Role	Helmet colour	Light colour
Team Commander – Team type B & C	White helmet	Red light
Water & Flood Rescue Technician	Red Helmet	Red light
Water & Flood Rescue Boat Operator	Red Helmet	Red light
Team Commander – Team type D	White helmet	Yellow light

Water & Flood Rescue First Responder	Yellow Helmet	Yellow light
Equipment & throw lines	N/A	Green light
Hazard marking	N/A	Blue light

## Hand and whistle signals

To ensure interoperability between teams regardless of their agency, it is essential that all teams use a standard set of signals for communication.

**Table 4 - Hand signals**

Signal	Meaning
One hand flat on head	OK
One arm raised above head	Distress
Pointing with one arm outstretched.	Move in that direction
Both arms crossed in front of chest	Need medical help or bring medical kit.
One arm outstretched in front of chest showing palm	Stop
Whilst in boat - arm outstretched to one side	Move in that direction
Whilst in boat - both arms raised above head	Stop
Whilst in boat - one arm outstretched at side of body bent upwards at 90°	Holding position

**Table 5 - Whistle blasts**

Signal	Meaning
One blast	Stop or attention towards signaller
Two blasts	Attention to upstream or move upstream
Three blasts	Attention to downstream or move downstream
Three blasts repeated	Emergency
One long blast followed by a short blast	Carry On

## Night operations

During hours of darkness and poor visibility, responders are required to have suitable lighting for activities undertaken. This includes team and personal lighting. Personal lighting should include a hands-free head torch and a solid coloured light visible and attached to the helmet; this may be battery powered or a chemical light stick. Lights on buoyancy aids are not sufficient to meet this requirement. It is important that responders use the correct colour of helmet and light as detailed in Table 3.

In addition, each team will be equipped with search lighting to enable the team to illuminate an area sufficiently for carrying out searches and navigation of both urban and rural areas on foot or by boat. Rescue throw lines should have the bag marked with a green light, so this is more easily located if deployed into the water.

Consideration should be given to the use of thermal imaging cameras to assist with navigation and searches, bearing in mind their limitations in some circumstances. The use of night vision devices may also assist with night operations. Care must be given to the use of lighting when working with helicopters as the aircrew may use night vision goggles, which would be adversely affected by powerful search lights shining directly at the helicopter.

Additional control measures need to be considered for night operations, including the suspending or restriction of activity according to the safety of responders. Other control measures may include increased supervision, lighting, safety officers, upstream spotters and downstream back-up.

## Lily pads and asset deployment

Areas that are totally cut off by floodwater (lily pad) may still require search and rescue effort. When planning operations for areas such as these, teams that are deployed to these locations need to consider how they can provide an effective search and rescue service. Teams deploying into lily pads using boat or aircraft should ensure that they identify suitable capabilities, resources and have sufficient endurance to conduct a full range of flood search and rescue operations, potentially for an extended period. A suitable location to act as an operational or sector command point, and if required a survivor reception centre, should be identified and its position reported to incident or operational command.

While assets would normally be mobilised in pairs, a single asset may be mobilised to a lily pad or to remain at a building such as a nursing home if the decision is made to leave the residents in-situ. Assets that may contain special responders, such as health care professionals, may be mobilised to remain at a specific location.

## **Animals and pets**

Experience has shown that many people requiring evacuation or rescue will often not leave homes or properties without ensuring family pets are also evacuated. Some teams on the Defra Flood Rescue National Asset Register are trained in animal handling or are animal rescue experts. Learning from previous UK flooding events acknowledges that the RSPCA are best placed to provide the necessary skills and the range of equipment for an effective response.

Operational and team commanders should decide on whether to carry out animal rescue or evacuation based upon the dynamic risk assessment. A safe system of work should be in place, which may include portable pet cages for cats and small animals and muzzles for dogs. To maximise the use of RSPCA officers, it should be considered embedding them in other teams to create amalgamated teams (team type A).

Larger animals, including farm animals, may require evacuation to minimise losses for farmers. Larger animals require specialist equipment and considerations for moving. It may be safer for the animals to be left in some situations and, if so, plans for shelter, fresh water, and feeding arrangements should be made.

Information on managing farm animals and horses during a flood is available online<sup>13</sup>. Officials from local councils and the Animal and Plant Health Agency (APHA) with the RSPCA, National Farmers' Union (NFU), and other organizations who deal with farmers and animal welfare. APHA, local councils and the RSPCA can be contacted for advice during a flood incident.

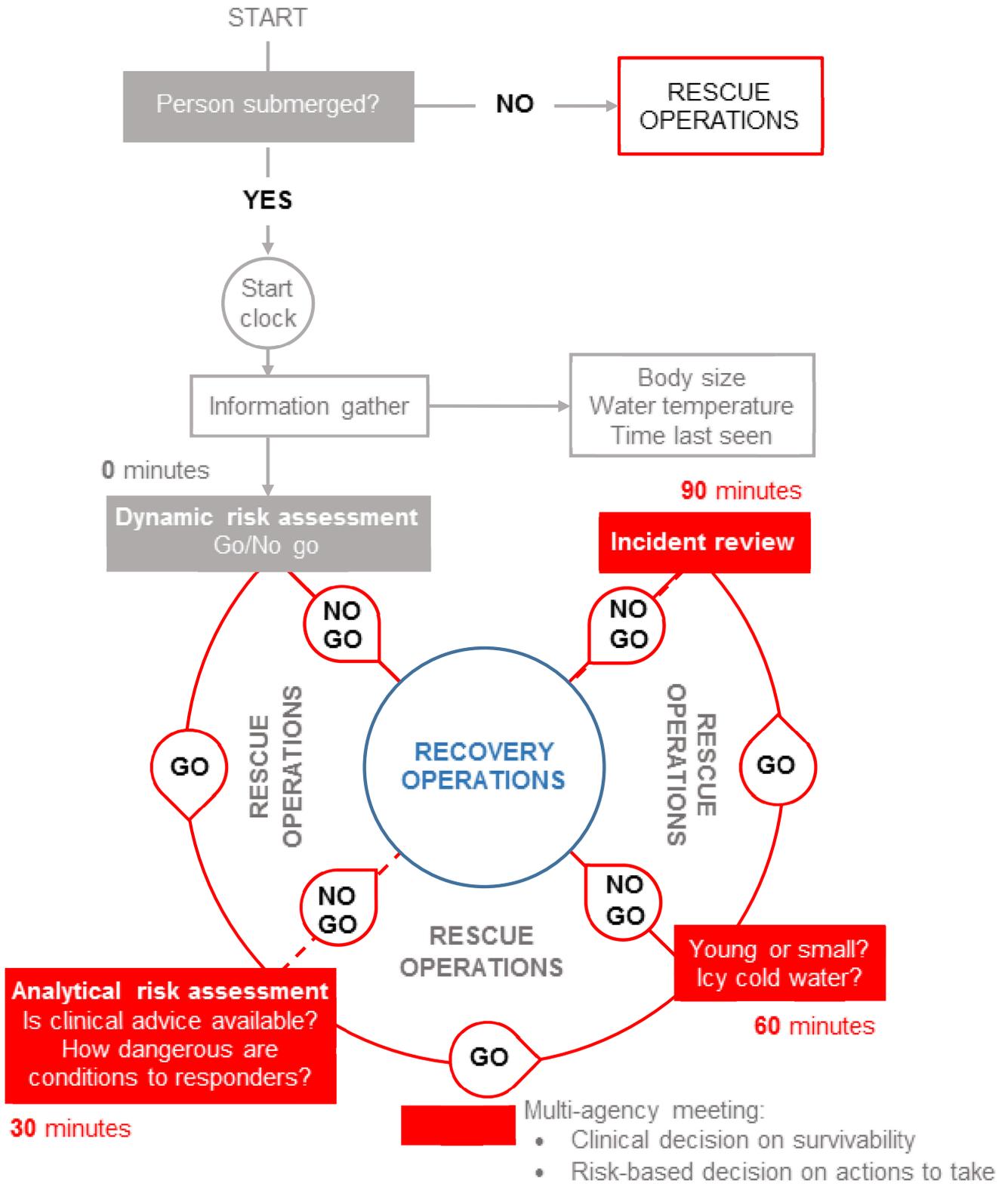
## **Rescue or recovery operations**

When responding during a flood event, it is important for commanders and responders to differentiate between rescue operations and body recovery operations. A model (see Figure 4) has been developed, by the Fire and Rescue Service and agreed for use by UK Search and Rescue organisations, to help commanders decide upon casualty survivability and involves decision-making with other agencies that might be on scene.

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<sup>13</sup> <https://www.gov.uk/guidance/keeping-farm-animals-and-horses-in-extreme-weather>

Figure 4 - Rescue or recovery operations



### Fatalities and Disaster Victim Identification (DVI)

Recent UK flood events have resulted in relatively few fatalities, but historically, flood events can lead to large numbers of people being killed. Whilst disaster victim

identification (DVI) activity is led by the police, flood responders may have to deal with finding large numbers of fatalities. Early advice should be sought from the police when any fatality is identified, so that the necessary actions can be initiated; this may include the arrangement for a mass fatality incident.

Whilst it is possible to request specialist police officers to assist from existing Police Marine Units, flood responders may have to work with police-led DVI teams to assist with reporting, marking, and recovery of victims. Where victims are at risk of being washed away then, subject to suitable risk assessment, the bodies should be moved to a position where further movement is unlikely and the actions of the responder should be thoroughly documented.

## 7. Helicopter operations

Helicopters offer an essential search and rescue capability during wide area flood events and can be requested by any Category 1 responder. Helicopters may be required to rescue stranded people in difficult-to-access locations, transfer the injured, and conduct search operations over areas that are inaccessible to other responders. Some air assets are able to support with logistics such as deploying responders to lily pads and isolated communities as part of the overall response strategy.

If doubt exists whether the intended tasking is suitable for helicopter operations, contact should be made with either the Aeronautical Rescue Coordination Centre (ARCC) based in the National Maritime Operations Centre (NMOC) or the National Police Air Service (NPAS) who will advise upon the availability and suitability of the intended tasking. When requesting helicopter support consider:

- Weather – en route and on scene
- The location and nature of the incident
- Assistance required (to include equipment type and amount to be moved)
- Any other search and rescue assets on scene or en route

As a flood incident escalates and for incidents requiring multiple air assets (3 or more aircraft from 2 or more agencies) to support response operations, a Combined Tactical Air Cell (CTAC) may need to be established. Only one CTAC can be established nationally. The CTAC can provide coordination for the responding aircraft and act as the interface by ensuring appropriate tasking and coordination of assets and requests. The CTAC will be led either by the Maritime and Coastguard Agency (MCA) or the police and have representation from either/both ARCC or from NPAS. The location of the CTAC is flexible and could be established at the incident within the Tactical Coordinating Group but could also be established remotely. Local responders who are experienced with working with helicopters should establish interim support for air assets.

Depending on the incident, representatives from Ambulance Helicopter Emergency Medical Service (HEMS) may be able to provide advanced medical care in isolated areas. Royal Air Force Liaison Officer (RAFLO) and the media, who may operate aircraft, may support the CTAC.

Communication with air assets is essential. Agencies such as the Maritime and Coastguard Agency and Mountain Rescue have existing nationally recognised working arrangements with search & rescue helicopters and routinely complete safe operations training for working around aircraft. Ground to air communications can usually be established using UK Land Search and Rescue (SAR) channels 62A (calling channel) and then changed to 24A for local ground-to-air operations. For marine band VHF equipped units, Channel 0, 16 or 67 can be used.

Consideration should be made to establishing an agreed communication link and suitable helicopter-landing sites (HLS) with the ability to handover rescued or recovered patients to

recognised health care professionals as required to maximise the effect of the airframe. Experienced responders with the correct training and personal protective equipment should establish helicopter-landing sites.

**Hazards** - Operating with aircraft has a significant number of associated hazards. Commanders should consider only using flood rescue personnel who have training to work with aircraft and are able to recognise potential hazards. Hazards to which personnel on the ground could be exposed include:

- Rotor wash/down drafting (blowing water spray, dust, snow and other materials, small boats being flipped).
- Blade sail (especially at start up and shut down).
- Exhaust fumes and temperatures.
- Rotor strikes due to operating on uneven ground.
- High noise levels (impacts on hearing and reduced levels of communications).
- Static discharges.
- Foreign object damage (material that is picked and damages the aircraft).
- Impact with high objects (such as pylons, masts, trees).

Good ground team management and appropriate personal protective equipment will minimise these hazards, alongside strict adherence to instructions given by the helicopter crew.

**Operating with boats** - Operating small rescue craft in a flood environment will be challenging for most crews and any operation with an aircraft will considerably increase the risk to those involved. The lack of safe, open water and air space, the risks of impact with shallow ground or debris, and the large density of obstacles should be reason enough to generally avoid winch operations to or from small craft, if possible. The construction of unpowered rescue craft makes them extremely susceptible to helicopter downwash, which in turn increases risk when winching to or near them. It is preferable to seek a dry point or large structure and conduct winch operations from there.

If unavoidable then:

- good communications with the aircraft and crew needs to be established.
- a suitable area to operate both boat and aircraft from should be identified.
- the boat should be prepared for winch operations, to minimise objects being blown around and reduce the number of snag hazards on the craft.

Personnel or casualties that have automatic inflating life jackets may need to have the life jacket put into a manual inflation mode shortly before being transferred. If this is not possible, the automatic mode must be disabled once on board the aircraft, indicating to the crew when this action is complete.

## 8. Post-incident considerations

### Costs and expenses

It can be expensive for any organisation to respond to out-of-area flood rescue operations both for equipment and personnel. Any equipment lost will have to be re-purchased through fundraising or cost recovery.

Some organisations will deploy with no charge being made to the requesting agency; they consider it as part of their organisation's ethos. This is particularly true when the organisation is local to the flood incident. Any expense incurred will be covered as part of their own expense in support of the flood response. However, where the responding organisation is not local to the incident, it may wish to recover some or all of the cost of responding. Some organisations may have a costs policy already in place with requesting agencies.

Other organisations will deploy and cover the immediate response phase with no charge or minimal charge. For extended periods of response operations they may, usually by agreement with strategic command, investigate cost recovery options.

Any costs incurred during response phase operations may be eligible under the Bellwin Scheme; this should be communicated to all responding organisations where applicable.

### Joint Organisational Learning

Fully embedding a joint organisational learning strategy nationally was one of the original objectives for JESIP and is a key element of the Joint Doctrine: The Interoperability Framework. JESIP, in partnership with the Civil Contingencies Secretariat (CCS), have launched new joint organisational learning arrangements for emergency services and LRFs called Joint Organisational Learning (JOL) Online.

JOL Online, hosted on ResilienceDirect, is a unique but simple way to capture lessons identified that may impact on multi-agency working and allow responders to continually improve what is done. Lessons identified, or notable good practice may come from training, testing and exercising or incidents, as well as a range of external sources.

The key to the capture of all interoperability and national capabilities lessons is through local single and multi-agency debriefs. All debriefs should have interoperability as a core theme and any lessons identified should be captured in line with JOL guidance and inputted onto JOL Online.

# Annex A – Defra Flood Rescue National Asset Register – Requirements for teams and application process

Organisations wishing to become a declared asset on the Defra Flood Rescue National Asset Register must meet the full list of requirements for team types, either a ‘team type B’ or ‘team type C’, as outlined in the team typing matrix (Annex J) and complete the application process. The application pack is available from Defra, [flood.rescue@defra.gov.uk](mailto:flood.rescue@defra.gov.uk), or existing teams can access the pack from the ResilienceDirect Flood Rescue Concept of Operations page.

Organisations must initially complete the application documents, which will be reviewed by Defra. If all the requirements are met, a physical assurance visit will be completed that will include assurance of team and personal equipment and a reviewing of training certification; this visit will take around half a day. Full details of the assurance visit will be confirmed in advance.

If both parties are content that the required standards have been met, a Memorandum of Understanding (MoU) will be signed between the declaring flood rescue agency/organisation and Defra for future deployments. This document will constitute a broad agreement to release assets nationally and for the agency to continue to meet the standards within this document.

## Requirements of agencies and assets on the National Asset Register

- Re-confirm asset availability on at least a monthly basis and notify when unavailable for more than 8 hours.
- Be able to deploy to a flood incident for a minimum of 3 consecutive days, not including travel time.
- Ensure ongoing compliance with the requirement for their team type as set out in the Concept of Operations.
- Ensure all members maintaining flood rescue training qualifications and record individual training and competence.
- Carry out and record routine inspection, maintenance and testing, as appropriate, of all flood rescue equipment including PPE, boats, vehicles and technical equipment.
- Assets will be required to complete any assurance activities as required by Defra.
- Maintain compliance with relevant health and safety legislation.
- Each agency should have in place suitable management and business provision for items such as insurance and finances.

# Annex B – Mobilisation of national assets

## Management of the National Asset Register

The management of the Defra Flood Rescue National Asset Register is contracted by Defra to the National Fire Chiefs Council and is delivered by its National Resilience team using the National Coordination and Advisory Framework's functions. National Resilience is responsible for the mobilisation and coordination of boat teams and Flood Rescue Tactical and Strategic Advisers, in response to local requests during major incidents.

## Availability reporting

National Resilience maintains a database of asset capability and availability. Assets on the register are required to update their availability at least once a month, and when an asset will be unavailable for a period greater than 8 hours.

## Requests for assets

Once a decision is made by a Strategic Coordinating Group that assets from the National Asset Register are required, the request would normally be made to National Resilience through the local fire and rescue service's control room. The request should be made using the M/ETHANE reporting framework. Requests for flood rescue advisers should also be made through the same mechanism.

National Resilience will select which of the national assets will be mobilised based on a number of considerations including the type of incident, urgency, location, equipment and team suitability. Potential future weather impacts and the likelihood of incident escalation will also be considered.

## Asset confirmation

The assets identified for mobilisation will be contacted by National Resilience and the organisation will initially have 30 minutes to confirm if the asset is able to mobilise. The asset must be available to deploy to the incident for a minimum of 3 consecutive days from arrival at the multi-agency strategic holding area (MASHA), not including travel time.

## Deployment to a multi-agency strategic holding area

On confirmation of mobilisation, the details of the rendezvous point or MASHA will be provided to the asset. For smaller localised incidents where national assets have been requested, it is likely that they will be mobilised to a rendezvous point coordinated by the Strategic or Tactical Coordinating Group. For wide-area flood incidents requiring a greater

number of assets and greater coordination, it is expected that a MASHA will be established. National Resilience's Enhanced Logistics Support (ELS) teams are able to provide this support function.

All assets will be credentialed on arrival at the rendezvous point or MASHA, further details on this process are covered in Annex C.

## Driving

The use of blue lights is not a requirement for flood rescue assets from any organisation. Mobilisation of national assets often occurs over long distances and as such blue light response journeys pose a significant risk to the public, driver and crew. For this reason, routine mobilisation of flood rescue assets will be at normal road speed.

In the event of a developing incident or a sudden onset incident with catastrophic circumstances, a decision may be made to utilise road traffic exemptions. This will normally be based on a threat or danger to life, in light of information from the affected authority, information and warnings from the Flood Forecasting Centre and therefore justified under the Joint Decision Model. The utilisation of road traffic exemptions should only be made after discussion with either the affected authority, National Resilience, or a suitably placed flood rescue adviser.

In the unlikely scenario a blue light response is required, this must be only completed by those who have received appropriate training by a Category 1 organisation in Emergency Response Driver Training or those who have the required skill set from other emergency response duties.

## Annex C – Water and flood rescue credentialing standards

Flood rescue assets will be required to comply with the rendezvous point (RVP) or MASHA booking-in procedure upon arrival, which will be completed prior to tasking. When an asset arrives at the RVP or MASHA, it will be credentialed by a flood rescue adviser, to ensure it meets the minimum standards for the declared team type. All team members will be checked to ensure they are correctly equipped and qualified.

Team commanders or managers will be required to provide information to enable a flood rescue adviser to complete and sign off the Flood Rescue Credentialing Form. The form is available on ResilienceDirect within the Flood Rescue Concept of Operations page. It is recommended that copies of this form are downloaded in readiness for any potential mobilisation, so that basic information such as team members' details, vehicle details and contact details can be completed in advance of arrival.

For assets with more than 2 boats, including rafts and sleds, and more than 2 vehicles a second form should be completed. This second form will only capture the team name, team manager contact details and the additional assets, i.e. additional boats and vehicles. No additional personnel will be added.

Whilst all assets are required to meet team typing specifications, it is acknowledged that teams often have additional unique skills, qualifications and equipment and can deploy in a number of configurations.

### Specialist Team Capabilities

The area for specialist team capabilities is broken down into eight categories. There are four categories to capture assets who have team members with specialist skills that are likely to be useful, though this does not require the asset to have the necessary equipment. Necessary equipment would be sourced locally if required. Specific personal protective equipment (PPE) such as appropriate helmets may be required.

- **USAR** - This team has members with specialist skills in clearing debris and negotiating collapsed structures. No additional equipment is required.
- **Ladder Operations** - This team has members with specialist skills in working from ladders and helmets that comply with BS EN 12492:2012. No additional equipment is required.
- **Animal Rescue** - This team either consists of members of the RSPCA or has members with specialist skills in Animal Rescue and meet the AR 2 standard.. No additional equipment is required.

- **Experienced Coastal Team** - This team has members with experience operating in navigable channels and coastal experience. Teams must have the ability to provide boat navigation lighting in line with the International Regulations for Preventing Collisions at Sea and marine band radio communications.

If the specialist capability does have suitable additional equipment, this can be captured in the 'additional information' section, e.g. the team has trained animal rescue personnel and the appropriate equipment. The other four categories are where assets have specialist capabilities with both trained members and the necessary equipment to perform this special capability.

- **Rope Rescue** - This team has members with specialist rope rescue skills and rope rescue equipment available. The team have helmets that comply with BS EN 12492:2012.
- **Helicopter Ground Operations** - This team has members who have helicopter training including UKSAR SAR-H Stage 1A and 1B and have eye protection, hand-held smoke flares and ground-to-air radio communications.
- **Helicopter Boat operations** - This team has members who are experienced in helicopter operations from boats and have eye protection, hand-held smoke flares and marine band radio communications.
- **Advanced Medical: Doctor/Paramedic** - This team has members who are health care professionals and have additional medical skills and equipment available.



## Defra Flood Rescue Credentialing Form

<b>Team Name</b>	Eg: Derbyshire Fire B1 / Derby MRT C1		
<b>Team Type</b>	Type B	Type C	Type D
<b>Call Sign</b>			

Role	Name	Mobile No	Call sign
Team Manager			
Team Commander			
Team Commander			

<b>Communications available</b>	Airwave issi No.	VHF Marine	VHF Land SAR	UHF
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<b>BOAT DETAILS</b>	Eg: Raft, Sled	
<b>Type</b> (incl. construction)		
<b>Length</b>		
<b>Draft</b>		
<b>Engine size</b>		
<b>Prop guarded?</b>	Yes / No	Yes / No
<b>Boat capacity</b> (people)		
<b>Boat load capacity</b> (kg)		
<b>Night Capable</b> (nav lights)	Yes / No	Yes / No
<b>Slipway needed?</b>	Yes / No	Yes / No

(For additional vehicles attach additional form)

VEHICLE DETAILS										
<b>Make &amp; Model</b>										
<b>Registration Number</b>										
<b>Vehicle Comms available</b>	Yes / No	Type of comms:								
VEHICLE DETAILS										
<b>Make &amp; Model</b>										
<b>Registration Number</b>										
<b>Vehicle Comms available</b>	Yes / No	Type of comms:								
CREW DETAILS										
Role	Name	Module 2	Module 3	Module 4	Team Commander	Module 5	First Aid Advanced / Basic; Doctor or Paramedic	Night operations experienced		
Responder										
Responder										
Responder										
Responder										
Responder										
Responder										
Team Manager										
Specialist Team Capabilities										
Team	Experienced Coastal Team	Ladder Operations	Animal Rescue		USAR					
Equip	Rope Rescue	Helicopter Ground Operations	Helicopter Boat Operations		Advanced Medical Doctor / Paramedic					
Team Manager / Commander	Location				Time	Date				
Print:					(24 hour)					
Sign:	<b>Additional Information:</b>									
<b>Completed by FRTA:</b>										
Print:										
Sign:										

# Annex D – Health, welfare and decontamination

## Asset team manager

The role of the team manager is to provide support to assets. They will:

- Maintain links as required with relevant contacts within the multi-agency strategic holding area (MASHA) or rendezvous point.
- Ensure welfare arrangements are being provided including food and accommodation. This must include ensuring post-deployment and pre-travel rest is managed as required.
- Maintain links as required with key contacts in the asset's organisation.
- Maintain records of feedback from team deployments.
- Consider the need and management of reliefs.
- Act as an emergency contact for responders.

They may look after up to five teams, if they are all provided accommodation and welfare arrangements in close proximity to each other and effective communication is maintained. Alternatively, a team manager can be deployed with each team, if an organisation wishes to provide this level of support. Team managers may be required to support teams from other organisations.

Longer term welfare and accommodation will be managed by the affected authority where assets have been deployed and should ideally be confirmed prior to deployment.

## Welfare

The partner organisations of an LRF are responsible, so far as reasonably practicable, for the health, safety and welfare of responders from assisting organisations in the same satisfactory manner as those from the impacted authority, e.g. responders are only to be placed in situations for which they are properly trained and equipped. This responsibility is in addition to the requirement for the team manager and team commander to ensure the health, safety and welfare of their team. General considerations include:

- adequate provision of food and drink while at the MASHA and during deployments.
- accommodation, including the provision of ideally 11 hours' rest and recovery time upon completion of a sustained period of deployment.
- decontamination, for equipment throughout the entire deployment and for personal protective equipment (PPE) and personnel after the initial 72 hours.

Operational deployments considerations include:

- Operational/sector commanders supported by team commanders should manage the working duration of teams. This should take into consideration factors such as task being performed and environmental considerations.
- Within the 72-hour availability for deployment period, crews should not exceed individual deployments for more than 12 hours in duration, i.e. no more than three in a 72-hour deployment.
- Each 12-hour deployment should include approximately 3 to 4 hours of breaks. This may need to be increased for teams carrying out more strenuous activities such as wading. During this time, PPE should be relaxed and refreshments taken on board. This break should be in a suitable location with toilet provision.
- On completion of a 12-hour deployment, a minimum of 11 hours rest should be provided with necessary meals and sleeping accommodation provided.
- If an incident requires the team to work beyond the considerations above, team commanders should escalate to operational commanders regarding the need for additional assets.

## Health

Any water system can present significant hygiene issues. Training should cover the need to manage hygiene with simple procedures, thereby reducing the risks significantly. The only guaranteed way to avoid exposure is to not enter water and this should be a consideration at all incidents. Urban flood operations are accepted as a Hazardous Materials Incident with the potential for flooded petrol stations, sewers and/or industrial sites to spill dangerous chemicals into floodwater.

## Fitness/medical considerations for responders

Any responder that is part of a flood rescue team should have a level of health and fitness that ensures that they are capable of carrying out their role. It is recommended that a medical doctor or physician verify a responder's level of health and fitness. A test of fitness e.g. an aerobic fitness test, and inoculations (including Hepatitis, Typhoid, and Tetanus" should be considered for inclusion as part of any medical declaration.

## Team decontamination

Teams operating in water are required to have a decontamination capability for people and initial on-site PPE decontamination. Organisations should consider the exact need for decontamination provision and carry out suitable and sufficient risk assessments. A decontamination capability could include, for example:

- Pressure Spray (Large) x 1
- Pressure Spray (Medium) x 1
- Measuring jug x 1

- Three days provision of Disinfectant Cleaner (1 L bottle) x 3
- Black bin bags (roll) x 1
- Heavy-duty storage bags x 8
- Anti-bacterial hand wipes (pack of 100) x 4
- Preparation Instructions x 1
- First Aid Instructions x 1
- 'Really Useful Box' x 1
- Clean water x 12L
- Dust Mask FFP3 x 20
- Goggles x 2
- COSHH Data Sheet for Disinfectant

## Annex E – Equipment

The following tables set out the required equipment standards for both personal protective equipment and team equipment by team type.

Additionally, many declared assets have specialist capabilities and are encouraged to deploy with equipment that may be of use. Such equipment as marine band radios, smokes, flares, rope rescue and animal rescue equipment is welcomed and should be declared during the credentialing process. Those bringing rope rescue or ladders must ensure PPE including helmets comply with the additional standard.

### Personal Protective Equipment

<p><b>Drysuits</b></p>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Size specific to the responder.</li> <li>• Fitted with internal braces.</li> <li>• Latex or Fabric socks, not integral boots.</li> <li>• Ability to regulate own drysuit. For example; a front zip or alternative breather zip. A front zip improves rescuer welfare and enables the rescuer to self-regulate temperature.</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• To ensure the appropriate thermal protection, drysuits should be constructed from a Trilaminare (or similar) fabric recommended to be between 220 and 430 gsm.</li> <li>• Fabric reinforcement in high wear areas.</li> <li>• Toilet access zip.</li> <li>• Latex seals for neck and wrist seals for ease of decontamination.</li> <li>• Neoprene protection is an optional extra over neck, boot and wrist seals providing added protection to seals.</li> <li>• Reflective strips on both arms and legs to aid visibility of rescuer.</li> <li>• Pockets are not recommended due to increased entrapment risks and increased drag.</li> </ul> <p><b>Consideration:</b></p> <ul style="list-style-type: none"> <li>• Module 2 to wear yellow/yellow and black dry suits.</li> <li>• Module 3 and 4 to wear red /red and black dry suits.</li> <li>• Whilst rare, consider the risk of latex allergy of wearer.</li> </ul>
<p><b>Buoyancy aid</b></p>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Size specific to the rescuer.</li> <li>• Comply with BS EN 393 or ISO 12402 pt 5, and all sizes must have a minimum of 70 Newton minimum floatation.</li> <li>• Must not be fitted with hydration systems due to the potential for contamination and resultant infection.</li> </ul>

	<ul style="list-style-type: none"> <li>• A releasable chest harness and a cowtail is required on all buoyancy aids with a locking karabiner which meets the standard of EN 362.</li> <li>• Front access/waistcoat style to reduce contamination and aid decontamination procedures. This is also a welfare requirement enabling wearer to relax PPE during rest periods.</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• High visibility reflective patches.</li> </ul>
<b>Knife</b>	<p>As part of Buoyancy Aid ancillary equipment.</p> <p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Must be carried by all responders.</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• Fixed bladed and attached to buoyancy aid for immediate use.</li> </ul>
<b>Whistle</b>	<p>As part of Buoyancy Aid ancillary equipment.</p> <p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Must be carried by all responders.</li> </ul>
<b>Helmet</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Must comply with PAS 028; 2002</li> <li>• Size specific to the responder or adjustable</li> <li>• Module 2 – Yellow</li> <li>• Module 3 &amp; 4 – Red</li> <li>• Designated team commanders to wear a white helmet; team members trained as team commanders not fulfilling this role should wear either a yellow or red helmet.</li> <li>• Should also comply to EN12492:2012 if a team is declaring ladder or rope rescue capabilities</li> </ul>
<b>Eye protection</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• All rescuers who declare they are skilled to work with helicopters must carry eye protection to meet the relevant safety standards as risk assessed by the organisation.</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• All responders to have eye protection available.</li> </ul>
<b>Torch</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• A hands-free torch should be attached to the rescuer during hours of low light and darkness.</li> <li>• Adequate provision must be considered for all responders and be sufficient for 3 nights of deployment</li> </ul>
<b>Helmet light/light sticks</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• All rescuers must have the appropriate coloured (red or yellow) solid light attached to helmet during low light and night operations.</li> <li>• This is to be solid light and not flashing.</li> <li>• Sufficient lights and consumables, e.g. batteries for all responders for 3 nights of deployment.</li> </ul>

<b>Thermal protection</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Skull cap or a neoprene hood should be available to all responders.</li> <li>• Gloves should provide thermal protection for the responder environment.</li> <li>• Suitable under thermal garments with flexibility to layer up or down depending on the environment and tasks being completed.</li> </ul>
<b>Footwear</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Suitable footwear such as walking boots or boots with reinforcement and good grip are required.</li> </ul> <p><b>Consideration:</b></p> <ul style="list-style-type: none"> <li>• Reinforced toe cap.</li> </ul>
<b>Life jackets</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Any flood responder operating in the flood environment and operating in an area with potential to accidentally enter the water should wear a personal flotation device (PFD) meeting the ISO 12402 Part 2.</li> <li>• Responders in heavy PPE, such as fire and rescue personnel in structural firefighting PPE, should wear a 275 Newton lifejacket.</li> <li>• This should be fitted with crotch straps, reflective tape, an oral inflation tube and whistle.</li> </ul>
<b>Throw line/belt</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• All Module 2 personnel to have minimum 15 metre throw line.</li> <li>• At least Module 3 &amp; 4 to have either 15 or 20 metre throw line with each team type B &amp; C having a minimum of 4 x 20 metre throw lines available.</li> <li>• Method of attachment for throw line bag to responder.</li> </ul>

## Team Equipment

<b>Transport</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Any vehicle(s) should be suitable to carry personnel and equipment and have the ability to provide basic welfare needs during deployment.</li> </ul>
<b>Logistics/welfare</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Facility for financing team for up to 3 days of deployment.</li> <li>• Credit card and cash should be considered for wide area flood incidents where failure of electricity prevents card usage.</li> <li>• An initial supply of fuel for vehicles and boats as required for 8 hours of constant activity after deployment from the MASHA.</li> <li>• Food and snacks for all team members for the initial 8 hours from deployment from the MASHA.</li> <li>• 4 litres of drinking water per person; this is only enough for a maximum of 8 hours deployment.</li> </ul>
<b>Team Type B</b>	<p><b>Required:</b></p>

<b>Boat and ancillary equipment</b>	<ul style="list-style-type: none"> <li>• Minimum capacity to drive upstream against 10 mph flow whilst carrying 6 persons.</li> <li>• Prop guarded.</li> <li>• Ancillary equipment: <ul style="list-style-type: none"> <li>○ Means to light the vessel for navigation purposes to comply with IRPCS. This may be a temporary low technical method.</li> <li>○ Anchor and anchor line.</li> <li>○ Fuel containers to enable 8 hours of activity.</li> <li>○ Lifelines.</li> <li>○ Attachment points for tethers.</li> <li>○ 4 x paddles (minimum 3 paddles in boat).</li> <li>○ Towing equipment suitable for boat.</li> </ul> </li> </ul> <p>All equipment must be able to be secured in the boat in case of capsiz..</p>
<b>Team Type C boat and ancillary equipment</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Raft or boat with minimum 6 persons capacity for tethering operations or basic paddle boat handling.</li> <li>• Suitable for wading/paddling rescue of persons without unduly getting the casualties wet.</li> <li>• Ancillary equipment: <ul style="list-style-type: none"> <li>○ Lifelines</li> <li>○ Attachment points for tethers</li> <li>○ 4 x paddles</li> </ul> </li> <li>• Raft or boat does not include open-backed sleds</li> </ul> <p>All equipment must be able to be secured in the boat in case of capsiz..</p>
<b>Team Type D raft/boat or sled and ancillary equipment</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Raft/boat or sled, Minimum 3 persons capacity for tethering operations or wading rescue of persons.</li> <li>• Ancillary equipment <ul style="list-style-type: none"> <li>○ Attachment points for tethers</li> </ul> </li> <li>• No paddles permitted; team type D is a non-buoyant rescue team.</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• Raft to enable rescue of persons without unduly getting the casualties wet.</li> </ul>
<b>Communications</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Handheld communications for all team members, spare batteries and charger (all waterproofed).</li> <li>• Mobile phone (waterproofed) with team commander and team manager.</li> </ul>
<b>First aid equipment</b>	<p>See Annex F - First Aid</p>
<b>Technical equipment</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• 1 x 50m floating line.</li> </ul>

	<ul style="list-style-type: none"> <li>• Set of technical rescue equipment to achieve efficient 3:1 mechanical advantage and to achieve 4-point tethering of boat/raft/sled.</li> <li>• Blue light sticks for marking hazards.</li> <li>• Yellow light sticks.</li> <li>• Green light sticks for throw lines and equipment.</li> <li>• Resealable waterproof (minimum size 20 cm x 15 cm) bags for use to ensure evacuated flood victims can transport vital personal possessions such as mobile phone and medications and does not slow down the evacuation process during handover from boat/raft.</li> <li>• Throw bags, rescue lines and for use for boat/raft tethering.</li> <li>• Scene lighting.</li> <li>• Search lighting.</li> <li>• Wading poles.</li> <li>• Adult casualty flotation devices: casualty flotation device standard to be determined by individual organisation to enable effective stowage on craft and vehicles.</li> <li>• Child casualty flotation devices: casualty floatation device standard to be determined by individual organisation to enable effective stowage on craft and vehicles.</li> </ul>
<b>Decontamination</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Anti-bacterial hand gel.</li> <li>• Anti-bacterial face &amp; hand wipes.</li> <li>• Anti-bacterial decontamination spray for PPE.</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• Anti-bacterial spray for equipment, though it is expected that this will be a consideration of the TCG/LRF.</li> </ul>
<b>Navigation</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Team Type B &amp; C: Handheld GPS system with street mapping facility</li> <li>• Team Type D: Mapping capability via electronic or physical maps</li> </ul> <p><b>Recommended:</b></p> <ul style="list-style-type: none"> <li>• Handheld GPS system with street mapping facility</li> </ul>
<b>Data logging</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• Suitable means of logging incident briefings and deployment information. This should include both electronic and paper-based options to enable exchange of information.</li> </ul>
<b>Testing</b>	<p><b>Required:</b></p> <ul style="list-style-type: none"> <li>• All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines and current legal standards</li> </ul>

## Annex F – First aid

Assets on the Defra Flood Rescue National Asset Register are required to provide a range of skills and capabilities and provide a minimum level of equipment as identified within this document. The focus of a flood rescue team is a rescue response and provision of initial first aid; the provision of a medical capability lies with the NHS Ambulance Service.

Teams will operate in dangerous environments with a primary function of rescue and evacuation of people in the flooded environment; these are often areas remote from health care. Within operational command points and sectors, health and safety and welfare of responders will be assessed and managed by operational, sector and team commanders. Individual organisations must comply with the minimum standards for this environment and the activities they are planning to undertake as detailed in the Health and Safety Executive (HSE) first aid regulations.

As a minimum, all assets are required to deploy with a basic team first aid kit. The team commander or operational/sector commander will consider the need for an asset to deploy with an advanced medical kit when operating remotely to other available medical capabilities.

The hazardous environment and strenuous activities carried out by flood responders is recognised. Due to the likely remoteness or possible time delay of access to care from a registered health care professional for both responders or flood casualties, initial and immediate management of flood victims will be managed by the declared flood rescue team and its personnel.

Tactical & strategic medical management will be incorporated into the wider incident management structure.

### Additional medical resources

- Ambulance Service (including Hazardous Area Response Teams - HART)
- Medical Emergency Response Incident Team (MERIT)
- British Association for Immediate Care (BASICS)
- Air Ambulance/Critical Care Team
- Flood rescue teams may include responders who are health care professionals in either their primary role or an additional voluntary role, e.g. RNLI, Mountain/Lowland Rescue members.

Assets may include responders who are health care professionals whose scope of practice is specifically in the pre-hospital environment. Commanders and organisations must recognise these individuals may not be able to fulfil their normal scope of practice and pre-hospital care due to limitations in equipment and interventions (such as access to controlled drugs. This must be identified as part of any declaration as a type A team and

appropriate NHS resources deployed in addition as defined with the agreed casualty management plan for the incident.

## Competencies

The contents of this section are based on minimum standards. Organisations may wish to increase training standards and medical provision based on an organisational risk assessment.

Category	Competency	Basic	Advanced
Safety	Basic Life Support, including choking	✓	✓
	Automated External Defibrillators (AED)	✓	✓
	Wear correct PPE for environment	✓	✓
	Demonstrate understanding of scene & casualty safety	✓	✓
	Communicate effectively with emergency services	✓	✓
Scene Management	Basic knowledge of the capabilities of different Emergency Service Personnel	✓	✓
	Appropriate awareness of high-risk mechanisms of injury including: <ul style="list-style-type: none"> <li>• Spinal injuries</li> <li>• Pelvic injuries</li> <li>• Long bone injuries</li> </ul>	✓	✓
	Awareness of triage	✓	✓
	Competence in triage sieve		✓
	Demonstrate forensic awareness		✓
	Awareness of simple consent and capacity issues and how to get assistance for assessment and management	✓	✓
	Survivor priority evacuation		✓
Catastrophic Bleed	Recognise life-threatening haemorrhage	✓	✓
	Understand a stepwise approach to managing a catastrophic limb bleed	✓	✓
	Appropriately manage catastrophic junctional bleed		✓

	Apply direct pressure	✓	✓
	Competent application of tourniquet		✓
	Competent in use of haemostatic agents		✓
Airway	Inspect and clear airway	✓	✓
	Head tilt/chin lift & neutral alignment	✓	✓
	Jaw thrust		✓
	Postural airway management	✓	✓
	Use of suction		✓
	Size and insert appropriate simple airway adjunct		✓
Breathing	Identify if patient is breathing normally	✓	✓
	Correctly assess breathing rate, depth and quality		✓
	Perform basic chest examination		✓
	Identify life-threatening chest conditions		✓
	Application and management of appropriate chest seals		✓
	Splintage of flail chest in a responsive patient		✓
	Appropriate positioning to assist ventilation		✓
	Safely configure an oxygen system for use		✓
	Oxygen delivery & correct mask choice		✓
	Understanding of limitations of pulse oximetry use if appropriate		✓
	Oxygen delivery and ventilation via bag-valve-mask (using adjuncts where appropriate)		✓
	Use of expired air ventilation (using adjuncts where appropriate)	✓	✓
Circulation	Assess presence of circulation	✓	✓
	Measure pulse rate and rhythm		✓
	Measure capillary refill time		✓
	Assessment of blood loss		✓

	Apply direct pressure	✓	✓
	Elevation of limb where appropriate	✓	✓
	Splinting as a haemorrhage control method		✓
	Application of appropriate wound dressing	✓	✓
Disability	Perform an Alert, Verbal, Pain, Unresponsive (AVPU) assessment	✓	✓
	Identify indicators of underlying head injury		✓
	Perform a Face, Arms, Speech, Time (FAST) assessment	✓	✓
	Assess neurovascular status		✓
Exposure	Differentiate cold from hypothermia	✓	✓
	Differentiate heat exhaustion from heat stroke	✓	✓
	Recognise possibility of and prevent hypothermia	✓	✓
	Assess, treat and casualty handling of patients exposed to extremes of temperature	✓	✓
	Recognition and management of non-freezing cold injury	✓	✓
Casualty handling	Appropriate packaging of patient for evacuation		✓
	Assist with transfer of patient	✓	✓
	Manage transfer of patient to appropriate evacuation device		✓
	Ability to medically assist and manage in safe extrication of a patient in an operational environment	✓	✓
	Ability to understand and make disposition decision		✓
	Provide appropriate clinical handover to next echelon of care	✓	✓
	Casualty handling techniques	✓	✓
Paediatrics	Ability to carry-out basic life support (BLS) protocols on a child and infant		✓
Musculoskeletal injuries	Recognition of possible fractures	✓	✓
	Recognition & appropriate initial treatment of soft tissue injury	✓	✓

	Realignment and splintage of fractures and splint dislocations where appropriate		✓
	Awareness of methods of pain control	✓	✓
Drowning	Recognition and management of the drowned patient	✓	✓
Chemical & Burn injury	Recognition and management chemical injury	✓	✓
	Recognition and management of burns	✓	✓
	Recognition and management of toxin exposure	✓	✓
Medical	Generic patient assessment	✓	✓
	Ability to recognise and manage common medical emergencies	✓	✓
	Acute breathlessness		✓
	The unconscious patient	✓	✓
	The fitting patient	✓	✓
	Acute allergic reaction		✓
	Bites, stings and envenomation		✓
	Electrocution		✓
	Diabetic hypoglycaemia		✓
	Stroke/transient ischemic attack (TIA)		✓
	Cardiac chest pain including myocardial infarction and angina	✓	✓
	Management of patients own medication and home equipment		✓
	Eye irrigation	✓	✓

## Overview of team type first aid capability

### Team Type B

Team manager	No medical training required
6 team members	4 x basic first aid
	2 x advanced first aid

## Team Type C

Team manager	No medical training required
6 team members	5 x basic first aid
	1 x advanced first aid

## Team Type D

Team manager	No medical training required
4 team members	4 x basic first aid

## Medical equipment

Each declared asset is required to have, as a minimum, the items listed in the basic medical equipment kit and all 'team type B and C' assets must also have advanced first aid kits.

### Basic first aid kit

This equipment is designed for teams operating in local proximity to sector command/deployment area with full medical kit available.

**Table 6 - Basic first aid kit**

Item	Description	Quantity
Dry bag	To contain the items below. Robust with an attachment point suitable for attachment to boat	1
Marker pen	Fine point	1
Patient record card		1
Medical gloves	Mixed sizes	6
Tuff cut shears		1
Resuscitation aid	Pocket mask	1
Compression/wound dressing		2
Alcohol gel		1

\*It is recommended that team type B teams carry tourniquets if responders are competent in their use.

**Table 7 - Advanced first aid kit**

Item	Description	Minimum Quantity
Dry bag	To contain the items below. Robust with an attachment point suitable for attachment to boat	1
Casualty care record card		12
Cohesive bandage		4
Gauze/cotton swabs	Pack of 5	3
Eye wash		5
Triangular bandage		4
Oropharyngeal airways	Sizes 2, 3, 4	1 of each size
Bag Valve Mask	Adult	1
Oxygen cylinder		1
Oxygen therapy mask		1
Suction		1
Blankets	Not a single layer foil/space blanket. Layered baffled foil blankets are acceptable.	6
Stretcher	Basket stretcher or similar suitable device to complete extrication and transportation in the flood environment.	1
Automatic External Defibrillator (AED)	Including pads, battery, razor. Unit and ancillary kit to be contained in a waterproof bag	1

### Equipment limitations

The limitations of many standard items of medical equipment must be acknowledged when dealing with patients in cold and wet environments including pulse oximetry, tympanic thermometers etc.

# Annex G – Water and flood rescue training standards

The Defra water and flood rescue training modules are the required minimum standards for responders and instructors on the Defra Flood Rescue National Asset Register.

Training hours identified are the minimum face-to-face contact hours and do not include travel time or rest periods. It is recognised some agencies may choose to deliver blended learning in addition to the minimum training hours to improve responder competence and to increase success when attending the course.

It is essential that training courses are delivered by appropriately qualified instructors, using adequately risk-assessed locations especially with regards to access, features of Class 2 water, and water quality. Instructor assessments must be completed in a training environment.

All in-water sessions are required to commence with a non-assessable familiarisation and acclimatisation session for responder safety considerations reasons. This is intended to allow the delegate to adjust physically and psychologically to the environment.

Individual organisations are required to risk assess and review if additional learning outcomes or equipment are required for their organisation's requirements. Agencies whose primary response is for Defra flood rescue activities need to risk assess and develop additional training to cover the skills that agencies such as Cave Rescue, the Fire and Rescue Service and Mountain Rescue would practice by providing other responses.

## Continual Professional Development and Recertification

Responders and instructors will be required to show evidence of continual professional development (CPD) to ensure skills maintenance and recertification as specified.

CPD and recertification requirements are specific to individual modules. The minimum CPD hours are based upon responders already carrying out associated response skills in other roles. CPD and recertification must be carried out on suitable and appropriate water, as detailed in the modules.

The modules that require recertification should be completed with a focus on the specific module being recertified. An upskilling course for example where a Module 3 responder completes advanced rope skills in the water environment, advanced rescue from vehicles, or a Module 4 qualification would not be recognised as a recertification. This training and assessment must be under the supervision of appropriately competent instructors.

Holding an in-date module qualification and having completed a non-water related teaching qualification does not meet the requirements for an instructor wishing to teach these modules to teams wishing to join or maintain their position on the National Asset Register.

## Training standards for Water and Flood Rescue

The following modules define the appropriate training for water related activities.

Module 1: Water & Flood Awareness	General water safety awareness training
Module 2: Water & Flood First Responder	To work safely near and in water using land based and wading techniques
Module 3: Water & Flood Rescue Technician	Specialist rescue operation
Module 4: Water & Flood Rescue Boat Operator	Rescue boat operations
Team Commander	Water team related incident command
Module 5: Water & Flood Incident Management	Water-related operational and tactical incident command
Module 6: Flood Rescue Tactical Adviser	Provide advice to tactical and strategic commanders and credentialing
Module 7: Flood Rescue Strategic Adviser	Provide advice to the National Flood Response Centre and Strategic Coordinating Groups

## Defra Training Module 1

### Water & Flood Awareness training module

<b>Target group</b>	All responders who may, as part of their role, work near water.
<b>Scope</b>	<p>This training is designed to make responders aware of the hazards associated with water and the flooded environment.</p> <p>The dangers of working near water are explained and basic safety measures are introduced.</p> <p>The session includes awareness of water-related hazards, water hydrology, typical water and flood search and rescue scene organisation, principles of water safety, varying rescue options including low to high risk options, and introduction to basic water safety.</p> <p>The training is split into separate units that cover the essential knowledge and understanding, plus the awareness of practical application rescue techniques.</p>
<b>Aim</b>	To enable members to operate safely near water.
<b>Minimum delivery hours</b>	Two hours.
<b>Instructor</b>	Any Module 3 responder who is in-date with qualification and CPD requirements, or a recognised instructor.
<b>Instructor ratio</b>	No required ratio, however suggested ratio of one instructor to twenty-four delegates.
<b>Learning Outcomes</b>	<p>State the hazards associated with working near water.</p> <p>State safety measures to be put in place when working near water.</p> <p>Describe selection of and demonstrate correct donning of water safety personal protective equipment (PPE).</p> <p>Awareness of the use of rescue equipment provided.</p> <p><b>Outline of requirements:</b></p> <p><b>Knowledge and understanding relating to learning outcomes</b></p> <ul style="list-style-type: none"> <li>• Understand organisational policies and the Flood Rescue Concept of Operations modules</li> </ul> <p><b>Identification of the basic characteristics and hazards of the water environment</b></p> <ul style="list-style-type: none"> <li>• Water temperature; current/flow; pollution/contamination; public, bystanders; moral pressure; training; equipment; locks; weirs; ice, mud and other unstable surfaces; access; entrapment; debris; casualty (human and animal); noise; communications; visibility; time of day/year; tide; effects of weather; changeable water conditions; other water users, vessels etc</li> </ul> <p><b>Safety measures when working near water</b></p> <ul style="list-style-type: none"> <li>• Understand the defensive swimming position; understand the concept of zoning near to the water</li> </ul> <p><b>Awareness of the physiological effects of entry into cold water</b></p>

	<ul style="list-style-type: none"> <li>• Cold water reflex; short- and long-term effects</li> </ul> <p><b>Have an appreciation of the physiology of drowning</b></p> <p><b>Have an appreciation of the difficulties associated with rescues from ice, mud and other unstable surfaces.</b></p> <p><b>Understanding of the limitations of non-water rescue PPE in various water environments</b></p> <ul style="list-style-type: none"> <li>• Cold; drag; weight; helmets; self-rescue/recovery; breathing apparatus sets; clothing worn by non-water equipped personnel</li> </ul> <p><b>Have an understanding of flowing water hydrology</b></p> <ul style="list-style-type: none"> <li>• Eddies; force of water; strainers; main current; helical/laminar flow; flood water</li> </ul> <p><b>Awareness of the range and limitations of PPE</b></p> <ul style="list-style-type: none"> <li>• Life jackets; buoyancy aids; ancillary equipment</li> </ul> <p><b>Have a knowledge of the prioritised approach to rescue attempts</b></p> <ul style="list-style-type: none"> <li>• Understanding of talk, reach and throw techniques; awareness of row and go hazards</li> </ul> <p><b>Demonstrate the use of throw bags</b></p> <ul style="list-style-type: none"> <li>• Design and limitations; care and maintenance; dry land practice (in bag and loose coiled); receiving the throw line as casualty</li> </ul> <p><b>Night Operations:</b></p> <ul style="list-style-type: none"> <li>• Awareness of hazards and limitations of night operations</li> </ul> <p><b>Flood:</b></p> <ul style="list-style-type: none"> <li>• Awareness of hazards associated with flooded areas</li> </ul>
<b>Continual Professional Development</b>	N/A
<b>Recertification</b>	Personnel trained to this level should be recertified on an annual basis. This training should include all learning outcomes as detailed above.

## Defra Training Module 2

### Water & Flood First Responder training module

<b>Target group</b>	This module is aimed at selected search and rescue personnel who respond to water & flood incidents with appropriate PPE.
<b>Scope</b>	The module introduces water rescue equipment including its safe and effective use and progressively develops the student to be confident in and around water. As well as learning how to read the water, the student will practice non-buoyant rescues including wading rescues and self-rescue techniques appropriate to the risk, bank-based rescues and shallow water crossings. The session will also provide an awareness of unstable surface hazards such as mud and ice which may also be encountered at water and flood incidents.
<b>Aim</b>	To train responders to identify their limitations and safely and effectively use appropriate water rescue equipment, whilst operating near or in moving water appropriate to the limits of a non-buoyant rescuer.
<b>Minimum delivery hours</b>	Minimum of fourteen hours over a minimum of two days when delivered as a standalone course. Minimum of twelve hours over a minimum of two days if module 1 completed in previous two months.
<b>Instructor Trainer</b>	Module 2 or 3 Instructor
<b>Instructor ratio</b>	Minimum of two Module 2 instructors to twelve delegates The maximum number of delegates can be increased by four for every additional suitably qualified instructor, assessed against the suitability of the training facilities available to ensure appropriate water and instructor contact time.
<b>Pre-requisites</b>	This module can be delivered as a standalone course.
<b>Training venue</b>	The water selected for this module shall be appropriate to the limits of wading rescue with suitable and appropriate hydrology features, up to Class 2 water, for all aspects of training to be carried out safely and effectively.
<b>Learning Outcomes</b>	<p><b>Demonstrate water rescue scene management and dynamic assessment of risk</b></p> <ul style="list-style-type: none"> <li>• Understand the limitations of the water rescue wading responder capability; rescue team organisation; communication systems including hand, audible and radio; hazard recognition and preplanning; risk and incident zones; incident management structure; team roles and responsibilities</li> </ul> <p><b>Identify and apply the role of the First Responder within the incident management structure</b></p> <ul style="list-style-type: none"> <li>• Incident management structure; team health, safety and welfare</li> </ul> <p><b>Apply a working knowledge of hydrology and associated hazards</b></p> <ul style="list-style-type: none"> <li>• Recognition of water features and their impact</li> </ul> <p><b>Have an understanding of search procedures in the water environment</b></p>

- When and how to search; types of search, deployment of teams; sectors, point last seen and areas of possible detection

#### **Identify and use appropriate PPE**

- Types of PPE; donning and doffing; care maintenance and inspection; record keeping

#### **Demonstrate self-rescue from water**

#### **Understand and apply relevant rescue techniques**

- Talk, reach, throw; first responders to only demonstrate talk, reach, throw

#### **Have a working knowledge of specialist rescue equipment within team**

- Inflatable adjuncts; ropes for water rescue; technical hardware; unstable ground equipment

#### **Demonstrate techniques for movement in shallow water**

- Supported crossing (poles/tethers); 1-2-3 person teams; wedge and line astern; casualty crossing

#### **Have a working knowledge of casualty management issues specific to the water environment**

#### **Medical problems associated with water**

#### **Identify and explain an understanding of the hazards and implications associated with**

- Entrapment - supporting tag lines, use of cinches
- Mud and ice - characteristics, medical issues, extrication techniques, contamination
- Locks and sluices - characteristics, design/hydrology, specific rescue techniques
- Vehicles and objects in water - behaviour, hydrology, access and stabilisation techniques with flood rescue equipment and safety considerations.
- Animals - hazards and safety protocols

#### **Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility and application of suitable control measures**

- Equipment issues; lighting; additional marking requirements; audible signals

#### **Raft/sled**

- Use of sled as an evacuation device during wading operations, not used as a platform for water and flood first responders to work from or as a means of movement

#### **Search**

- Awareness of search techniques and capabilities

#### **Flood**

- Awareness of flooding and associated hazards; pollution; location and incident specific hazards; topography

<p><b>Continual Professional Development</b></p>	<p>A minimum of eight hours per calendar year with a minimum of two sessions per year with a maximum gap of nine months between training sessions. Of the eight hours, at least two hours must be in Class 2 water or water with equivalent features.</p> <p>Recorded activity-based training should cover the following subjects as a minimum:</p> <ul style="list-style-type: none"> <li>• Donning, doffing and care of water rescue PPE</li> <li>• Water Rescue Incident Management</li> <li>• Self-rescue techniques</li> <li>• Throw bag skills</li> <li>• Shallow water crossing techniques</li> <li>• Swift water hydrology</li> </ul>
<p><b>Recertification</b></p>	<p>Recertification is required every three years.</p> <p>Responders with the Module 2 qualification who have maintained competency using internal or peer-led CPD are required to complete a minimum of twelve hours over a minimum of two days with learning outcomes, instructor and instructor ratio and venue as detailed above.</p> <p>Responders with the Module 2 qualification who have completed an annual CPD event of six hours minimum in duration with at least three hours in Class 2 water delivered by suitably qualified instructors meeting the standards above, are required to complete a minimum of six hours over a minimum of one day with learning outcomes, instructor and instructor ratio and venue as detailed above.</p>

## Defra Training Module 3

### Water & Flood Rescue Technician training module

<b>Target group</b>	Specialist Search & Rescue Personnel
<b>Scope</b>	<p>This module is aimed at selected search and rescue personnel. The module introduces appropriate water rescue equipment including its safe and effective use and progressively develops an individual to be confident in, on and around moving water. As well as learning how to read the water, an individual will spend time swimming, practicing self-rescue techniques and performing in- and on-water rescues as part of a rescue team.</p> <p>The syllabus also includes boat/pathway handling, basic rope rescue techniques and consideration of still water and unstable ground hazards such as mud and ice.</p>
<b>Aim</b>	To train responders to identify their limitations and safely and effectively use appropriate water rescue equipment, whilst operating near, on, or in moving water.
<b>Minimum delivery hours</b>	Minimum of twenty-six hours over a minimum of four days.
<b>Lead Instructor</b>	Module 3 Instructor
<b>Instructor ratio</b>	<p>Minimum of one Module 3 instructor and one Module 2 instructor to twelve delegates.</p> <p>The maximum number of delegates can be increased by four for every additional suitably qualified instructor, assessed against the suitability of the training facilities available to ensure appropriate water and instructor contact time.</p>
<b>Pre-requisites</b>	This module can be delivered as a stand-alone course.
<b>Training venue</b>	The water selected for this module shall be appropriate to assess all relevant skills with suitable and appropriate hydrology features, up to Class 2 water, for all aspects of training to be carried out safely and effectively.
<b>Learning Outcomes</b>	<p><b>Demonstrate water rescue scene management and dynamic assessment of risk</b></p> <ul style="list-style-type: none"> <li>Understand the limitations of the role; rescue team organisation; communication systems; hazard recognition and preplanning; risk and incident zones; Incident Management Structure including providing tactical advice; team health, safety and welfare</li> </ul> <p><b>Identify and apply the role of the water and flood rescue technician within the Incident Management Structure</b></p> <ul style="list-style-type: none"> <li>Team health, safety and welfare; team roles and responsibilities</li> </ul> <p><b>Apply a working knowledge of hydrology and associated hazards</b></p> <ul style="list-style-type: none"> <li>Recognition of water features and their impact</li> </ul> <p><b>Have an understanding of search procedures in the water environment</b></p> <ul style="list-style-type: none"> <li>When and how to search; types of search; deployment of teams; sectors; point last seen and areas of possible detection</li> </ul>

**Identify and use appropriate PPE**

- Types; standards; donning and doffing; care maintenance and inspection; record keeping

**Demonstrate swimming and manoeuvring in moving water**

- Ferry glide concept; negotiating obstacles; entry – egress; defensive swimming; aggressive swimming; tethered swims

**Understand and apply relevant rescue techniques**

- Talk; reach; throw; row; go/tow; helicopter

**Have a working knowledge of basic boat handling by paddle & rope systems**

- Types and suitability of systems; safety briefings; helming skills; tethered boat options; paddling skills; wading skills
- Demonstrate capsize drill skills in a suitable boat or raft and have awareness in powered boat operations in preparation for operating with or being transported by a team type B

**Demonstrate rigging & operating of rope systems**

- Equipment; anchors; tensioned diagonals; tensioning lines; efficient 3:1 mechanical advantage; knots and hitches

**Have a working knowledge of specialist rescue equipment (where in use by organisation)**

- Inflatable adjuncts; ropes for water rescue; technical hardware; unstable ground equipment

**Demonstrate techniques for movement in shallow water**

- Supported crossing (poles/tethers); 1-2-3 in teams; wedge and line astern; casualty crossing

**Awareness of flooding and associated hazards**

- Pollution; location and incident specific hazards; topography

**Demonstrate casualty management issues specific to the water environment**

- Medical problems associated with water; in-water spinal care considerations; managing the non-compliant casualty

**Identify and explain an understanding of the hazards and implications associated with**

- Entrapment - supporting tag lines, use of cinches; mud and ice - characteristics, medical issues, extrication techniques
- Contamination
- Locks and sluices – characteristics; design/hydrology; specific rescue techniques
- Vehicles and objects in water – behaviour; hydrology; access and stabilisation techniques with flood rescue equipment and safety considerations
- Working with helicopters - availability and access; hazards and safety protocols

	<ul style="list-style-type: none"> <li>• Animals - hazards and safety protocols</li> </ul> <p><b>Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility and application of suitable control measures</b></p> <ul style="list-style-type: none"> <li>• Equipment issues; lighting, additional marking requirements; audible signals</li> </ul> <p><b>Search</b></p> <ul style="list-style-type: none"> <li>• Demonstrate search techniques</li> </ul>
<p><b>Continual Professional Development</b></p>	<p>A minimum of twelve hours per calendar year with a minimum of two sessions per year with a maximum gap of nine months between training sessions. Of the twelve hours, at least six hours must be in Class 2 water or water with equivalent features.</p> <p>Recorded activity-based training should cover the following subjects as a minimum:</p> <ul style="list-style-type: none"> <li>• Donning, doffing and care of water rescue PPE</li> <li>• Water Rescue Incident Management</li> <li>• Self-rescue techniques</li> <li>• Throw bag skills</li> <li>• Shallow water crossing techniques</li> <li>• Swift water hydrology</li> </ul>
<p><b>Recertification</b></p>	<p>Recertification is required every three years.</p> <p>Responders with the Module 3 qualification who have maintained competency using internal or peer-led CPD are required to complete a minimum of eighteen hours over a minimum of three days with learning outcomes, instructor and instructor ratio and venue as detailed above.</p> <p>Responders with the Module 3 qualification who have completed an annual CPD event of six hours minimum in duration with at least four hours in Class 2 water delivered by suitably qualified instructors meeting the standards above, are required to complete twelve hours over a minimum of two days with learning outcomes, instructor and instructor ratio and venue as detailed above.</p>

## Defra Training Module 4

### Water & Flood Rescue Boat Operator training module

<b>Target group</b>	Specialist search & rescue personnel operating rescue boats powered by engines.
<b>Scope</b>	This module is aimed at selected search and rescue personnel who are required to operate a powered craft for a range of activities as part of a crew. The module develops Module 3 - Water & Flood Rescue Technicians to be able to operate a powered craft in a variety of waters, including still, moving and flood. The module covers basic and advanced boat rescue operations such as casualty pickups, throw lines, evacuations and includes night search and rescue activities.
<b>Aim</b>	To train technicians to identify their limitations and safely and effectively use powered boats and associated equipment in inland waters and flooding, by day or night, in a wide range of water conditions.
<b>Minimum delivery hours</b>	Minimum of twenty-eight hours over a minimum of four days.
<b>Lead Instructor</b>	Module 4 Instructor
<b>Instructor ratio</b>	Minimum of one Module 4 instructor to a maximum three delegates per rescue boat.
<b>Pre-requisites</b>	Defra Module 3 - Water & Flood Rescue Technician RYA Level 2 Powerboat Handling
<b>Training venue</b>	The water selected for this module shall be appropriate to the limits of a boat-based rescue with suitable and appropriate hydrology features, up to Class 2 or marine equivalent with an average minimum flood/ebb speed of not less than 4 knots, for all aspects of training to be carried out safely and effectively.  In the circumstances when there are three delegates or fewer so only one training boat is required, a second boat must be used and operated by competent Module 4s to provide both a safe system of work and a second craft to enable compliance with the learning outcomes.
<b>Learning Outcomes</b>	<p><b>Individuals will demonstrate their ability to perform skills completed during the RYA Level 2 National Powerboat Course including:</b></p> <ul style="list-style-type: none"> <li>• pre-launch checks</li> <li>• launching</li> <li>• leaving and coming alongside</li> <li>• low and high-speed manoeuvring</li> <li>• picking up a buoy</li> <li>• anchoring</li> <li>• towing</li> <li>• person overboard</li> <li>• recovery of boat</li> <li>• IRPCS/Rules of the Road</li> </ul>

- Basic Fault Finding
- Emergency Procedures

### **Demonstrate boat handling in swift water**

- Identification of safe launching sites and bail-out sites
- Launch and recovery into swift water
- Recognition of moving water characteristics and hazards
- Vessel limitations
- Hull damage, watertight integrity and free surface water effect
- Anchoring
- Veering down/controlled boat lower
- Holding station
- Stemming the flow and ferry gliding
- Use of water features, including eddy currents, lees and wash-outs
- Identify the hazards and operate in shallow water
- Manoeuvring in swift water, including running with the flow, moving aft over ground, power turns
- Closing/bearing away
- Coming alongside moving vessels
- Suction effects and pressure waves
- Closing down procedures – returning equipment
- Reporting faults and problems

### **Paddle boat handling**

- Use of paddles to manoeuvre and control the craft, in both still and moving water
- Capsize avoidance and recovery

### **Search and rescue operations from powered craft**

- Safety equipment, communication with crew & other agencies
- Search techniques & incident management
- Methods of recovering personnel from water and techniques for lifting heavy casualties including extended reach rescue & throw line rescues
- Swimmer operations (including recovery of rescue swimmer)
- Use of loaded lines
- Tandem working (e.g. two boats operating together whilst attached by a line)
- Twin boat working (e.g. two boats operating together in the same sector or carrying out rescues by use of protected boat etc.)
- Towing & being towed – astern tow and alongside tow, length of tow-lines, position to pass a tow, using a bridle, towing alongside, casting off a tow

	<ul style="list-style-type: none"> <li>• Approaching, righting and dealing with entrapments from capsized vessels</li> <li>• Dealing with entrapments and capsized of own vessel</li> <li>• Awareness of rescue from vehicles and operating a boat around a vehicle in water (achievable using suitable object providing similar hydrology)</li> <li>• Mass evacuation and use of lily pads</li> <li>• Helicopter rescue procedures</li> <li>• Use of navigation systems</li> <li>• Use of other specialist equipment</li> </ul> <p><b>Boat handling and Search and Rescue during darkness and poor lighting conditions</b></p> <ul style="list-style-type: none"> <li>• Practical application of skills in darkness and poor light</li> <li>• Demonstrate ability at keeping a proper lookout and identifying lit and unlit marks and hazard at night</li> <li>• Students to conduct a search and rescue scenario during darkness</li> </ul>
<p><b>Continual Professional Development</b></p>	<p>A minimum of twelve hours per calendar year with a minimum of two sessions per year with a maximum gap of nine months between training sessions. Of the twelve hours at least six hours must be in Class 2 water or water with equivalent features.</p> <p>Recorded activity-based training should cover the following subjects as a minimum:</p> <ul style="list-style-type: none"> <li>• Launching and recovery</li> <li>• Manoeuvring the boat, forwards reverse and holding off</li> <li>• Coming alongside, mooring and swift off</li> <li>• Low and high-speed manoeuvring</li> <li>• Person overboard</li> <li>• Shallow water operations</li> <li>• Use of navigation system</li> </ul>
<p><b>Recertification</b></p>	<p>Recertification is required every three years.</p> <p>Responders with the Module 4 qualification who have maintained competency using internal or peer-led CPD are required to complete a minimum of eighteen hours over a minimum of three days with learning outcomes, instructor and instructor ratio, and venue as detailed above.</p> <p>Responders with the Module 4 qualification who have completed an annual CPD event of six hours minimum in duration with at least four hours in Class 2 water delivered by suitably qualified instructors meeting the standards above, are required to complete twelve hours over a minimum of two days with learning outcomes, instructor and instructor ratio and venue as detailed above.</p>

## Defra Training Module - Team Commander

### Team Commander training module

<b>Target group</b>	Module 2, Module 3 and Module 4 responders who as part of a team type, command the team in the operational area.
<b>Scope</b>	<p>This module is aimed at search and rescue personnel who have an in-date Module 2, Module 3 or Module 4 who will manage a team type appropriate to their qualification.</p> <p>The team commander role is only valid within a team type of that commander – for example, a Module 3 commander can only command a team type C.</p>
<b>Aim</b>	To improve the coordinated response to a water or wide-area flood incident and improve command, control, welfare and support of flood responders.
<b>Minimum delivery hours</b>	Minimum of thirteen hours over a minimum of two days.
<b>Lead Instructor</b>	Module 5 Instructor
<b>Instructor ratio</b>	<p>Minimum of one Module 5 instructor to twelve delegates.</p> <p>The maximum number of delegates can be increased by six for every additional suitably qualified instructor, assessed against the suitability of the training facilities available to ensure appropriate instructor contact time.</p>
<b>Pre-requisites</b>	Hold one of the following - Defra Module 2, Module 3 or Module 4.
<b>Training venue</b>	Appropriate for learning outcomes.
<b>Learning Outcomes</b>	<ul style="list-style-type: none"> <li>• Demonstrate an understanding for the considerations related to incident management.</li> <li>• Demonstrate an understanding of the roles and responsibilities of incident management across a range of appropriate agencies.</li> <li>• Demonstrate an understanding the requirements of effective risk management within operational activities and deployments.</li> <li>• Have an understanding of health and safety considerations, dynamic risk assessment and the challenges of risk appetite in relation to decision-making and the management of ‘mission creep’.</li> <li>• Demonstrate an understanding of the need for effective lines of communication at incidents and show the skills required for an initial response for an incident.</li> <li>• Demonstrate an understanding of the various stages of an incident and the ability to effectively close down an incident.</li> <li>• Demonstrate an understanding of the need for clear effective briefing, debriefing and handovers during an operational incident.</li> <li>• Demonstrate an understanding and identify the considerations when managing a scene of crime or body recovery.</li> <li>• Have a working knowledge of welfare considerations and actions required when an accident or welfare consideration occurs within your team.</li> </ul>

	<ul style="list-style-type: none"> <li>• Demonstrate an understanding of the Defra Flood Rescue Concept of Operations.</li> <li>• Have an awareness of the levels of water rescue PPE and their associated uses and applications.</li> <li>• Have an awareness of search management techniques relevant in the water environment including tasking and debriefing.</li> <li>• Have an understanding of search, rescue and evacuation capabilities.</li> <li>• Have an awareness of flood management commonalities such as: accessing and interpreting weather and flood warnings, flood warning schemes, multi-agency working, rainfall prediction, flood development, hazard identification and deployment of crews.</li> <li>• Have an understanding of resources available, capabilities and team limitations.</li> <li>• Have an awareness of the Civil Contingencies Act, responders and categories.</li> <li>• Demonstrate an understanding of local water resources availability, capabilities and limitations.</li> <li>• Have an awareness of the skills required for incident planning and ensuring appropriate documentation and possible post-incident considerations.</li> <li>• Have an awareness of the skills required for media management.</li> <li>• Have an understanding of all skills in-line with standards, including training, capabilities and limitations.</li> <li>• Have an understanding of hazards and limitations of night operations.</li> <li>• Have an understanding of hazards associated to the flooded urban and rural environment.</li> <li>• Have an awareness of the credentialing process.</li> </ul>
<b>Continual Professional Development</b>	A minimum of four hours per calendar year.
<b>Recertification</b>	<p>Recertification is required every three years.</p> <p>Responders with the team commander qualification are required to complete a minimum of six hours over a minimum of one day with learning outcomes, instructor and instructor ratio as detailed above.</p> <p>Team commander is required to maintain Module 2, Module 3 or Module 4.</p>

## Defra Training Module 5

### Water & Flood Incident Manager training module

<b>Target group</b>	This module is for personnel who are required to advise or command at water and flood incidents at a tactical or operational level.
<b>Scope</b>	This module is aimed at selected search and rescue personnel who are required to command and manage water and flood incidents at a tactical or operational level. The module covers water and flood specific incident command considerations, rescue, evacuation and search considerations and explores single and multiple incident scenarios.
<b>Aim</b>	To train commanders to identify, select, develop and manage appropriate tactical and operational plans in water and flood environments.
<b>Minimum delivery hours</b>	Minimum of twenty-six hours over a minimum of four days when delivered as a standalone course. Thirteen hours, if Defra team commander course completed in previous six months.
<b>Lead Instructor</b>	Module 5 Instructor
<b>Instructor ratio</b>	Minimum of one Module 5 instructor to twelve delegates. The maximum number of delegates can be increased by six for every additional suitably qualified instructor, assessed against the suitability of the training facilities available to ensure appropriate instructor contact time.
<b>Pre-requisites</b>	Hold an in-date ticket for either Training Module 2 or 3.
<b>Training venue</b>	Appropriate for learning outcomes.
<b>Learning Outcomes</b>	<ul style="list-style-type: none"> <li>• Demonstrate an understanding for the considerations related to incident management.</li> <li>• Demonstrate an understanding of the roles and responsibilities of incident management and of that from other key stakeholders.</li> <li>• Demonstrate an understanding of the requirements of effective risk management within operational and tactical activities and deployments.</li> <li>• Demonstrate an understanding of health and safety considerations, dynamic risk assessment and the challenges of risk appetite in relation to decision-making and the management of “mission creep” in a water and flood environment.</li> <li>• Demonstrate an understanding of the need for effective lines of communication at incidents and show the skills required for an initial response for an incident.</li> <li>• Demonstrate an understanding of the various stages of an incident and the ability to effectively close down an incident response.</li> <li>• Demonstrate an understanding of the need for clear effective briefing, debriefing and handovers during an operational incident.</li> </ul>

	<ul style="list-style-type: none"> <li>• Demonstrate an understanding and identify the considerations when managing a scene of crime or body recovery.</li> <li>• Have a working knowledge of welfare considerations and actions required when managing multiple water and flood rescue teams.</li> <li>• Demonstrate an understanding of national water safety policies, guidance and training standards.</li> <li>• Demonstrate an understanding of the Defra Flood Rescue Concept of Operations.</li> <li>• Demonstrate an understanding of the levels of water rescue PPE and their associated uses and applications.</li> <li>• Demonstrate understanding of search management techniques relevant in the water and flood environment.</li> <li>• Have an understanding of search, rescue and evacuation capabilities.</li> <li>• Have an understanding of flood management commonalities such as: accessing and interpreting weather and flood warnings, flood warning schemes, multi-agency working, rainfall prediction, flood development, hazard identification and deployment of crews.</li> <li>• Have an understanding of resources available, capabilities and team limitations.</li> <li>• Demonstrate understanding of the Civil Contingencies Act, responders and categories.</li> <li>• Demonstrate an understanding of local water rescue resources available, capabilities and limitations.</li> <li>• Demonstrate understanding and skills required for incident planning &amp; ensuring appropriate documentation and post-incident considerations.</li> <li>• Have an awareness of the skills required for media management.</li> <li>• Demonstrate understanding of all skills in-line with FRCO standards, including training, capabilities &amp; limitations.</li> <li>• Have an understanding of hazards and limitations of night operations.</li> <li>• Demonstrate an understanding of hazards associated to the flooded urban and rural environment.</li> <li>• Have an awareness of the credentialing process.</li> </ul>
<b>Continual Professional Development</b>	A minimum of eight hours per calendar year.
<b>Recertification</b>	<p>Water &amp; Flood Incident Managers must maintain both management and water safety elements.</p> <p><b>Management</b></p> <p>Recertification is required every three years.</p> <p>Responders with the Water &amp; Flood Incident Manager qualification are required to complete a minimum of ten hours over a minimum of two days with learning outcomes, instructor and instructor ratio as detailed above.</p>

## **Water Safety**

Option 1:

Water & Flood Incident Manager to maintain Module 2 or Module 3 qualification.

Option 2:

Annual Module 1 Water & Flood Awareness as well as Water & Flood Incident Manager to receive four hours of in-water CPD in every three-year period (recommended every two years) in Class 2 water under the supervision of a Module 2 or 3 instructor.

**In-water CPD to include:**

### **Identification and use of appropriate PPE**

- Types of PPE; donning and doffing; care maintenance and inspection; record keeping. This can include life jacket or use of Personal Flotation Device (PFD)

### **Demonstration of self-rescue from water**

### **Understand relevant rescue techniques in the role as casualty**

- Talk, receive reach pole & throw line.

### **Demonstrate techniques for movement in shallow water**

- Supported crossing (poles), 1-2-3 person teams; wedge and line astern

### **Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility, and application of suitable control measures**

- Equipment issues; lighting; audible and hand signals

## Defra Training Module 6

### Flood Rescue Tactical Adviser (FRTA) training module

<b>Target group</b>	Water & flood rescue experts who have an in-depth knowledge of both operational and tactical water and flood incident management and wider considerations.
<b>Scope</b>	This module is for personnel who may be required to provide tactical or strategic advice at a major or wide area flood or water rescue incident.
<b>Aim</b>	To develop advisers for national deployment to advise and support at TCGs and/or SCGs on behalf of Defra for wide-area flooding incidents. To develop FRTAs to attend multi-agency strategic holding areas to assist with credentialing of flood rescue assets.
<b>Minimum delivery hours</b>	Thirty-five hours contact time over a minimum of five days. Two hours per night of learning journal and personal study.
<b>Lead Instructor</b>	All training courses will be run by Defra and instructors will be selected as appropriate.
<b>Recruitment</b>	This training module is only to be delivered by Defra. Defra will advertise for FRTAs via the Defra Flood Rescue Stakeholder Group and by email to all organisations declared on the National Asset Register when recruitment is taking place. The suitability of each applicant will be reviewed. Defra do not hold contact details from expressions of interest.
<b>Pre-requisites</b>	<ul style="list-style-type: none"> <li>• Successful application to Defra.</li> <li>• Successful completion of pre-course assessment.</li> <li>• Hold an in-date Module 5 (meeting the current Module 5 standard).</li> <li>• Hold an in-date qualification at Module 2 or Module 3.</li> <li>• Have previously completed Module 3.</li> <li>• Have previously completed Module 4.</li> <li>• JESIP trained to tactical level.</li> <li>• Experienced tactical commander.</li> <li>• Support of a flood rescue organisation e.g. Cave Rescue, Fire &amp; Rescue etc.</li> <li>• Experience of LRFs or other multi-agency groups.</li> <li>• Knowledge and awareness of government, non-government, Category 1 &amp; 2 and voluntary sector involvement in flood rescue.</li> <li>• Recognised Health &amp; Safety qualification - minimum: IOSH or assessed equivalent such as PolSA Safety Management course.</li> <li>• Experience of working at tactical and operational levels at water and flood incidents.</li> <li>• Meet all other requirements as required.</li> </ul>

<b>Pre-Course Requirements</b>	<p>Delegates are required to request:</p> <ul style="list-style-type: none"> <li>• Hazard Manager Account</li> <li>• Permission to receive flood guidance statements and national severe weather warning service updates</li> <li>• Login details for ResilienceDirect (RD)</li> </ul>
<b>Training Venue</b>	Appropriate for learning outcomes.
<b>Learning Outcomes</b>	Learning outcomes held by Defra.
<b>Assessment</b>	<p>Some weeks prior to the Defra FRTA course, shortlisted applicants will be required to attend an assessment and complete:</p> <ul style="list-style-type: none"> <li>• Technical Underpinning Knowledge Exam – 80% pass mark</li> <li>• Learning journal – 80% pass mark</li> <li>• Final written assessment – 80% pass mark</li> <li>• Tactical planning – 80% pass mark</li> </ul>
<b>Continual Professional Development</b>	<p>FRTAs must maintain both management and water safety elements.</p> <p><b>Management</b></p> <p><b>Individual</b> - A minimum of twelve hours per calendar year completing the CPD learning tools for FRTA on ResilienceDirect.</p> <p><b>Defra-Led</b> - Defra provide a fourteen-hour CPD event every two years.</p> <p><b>Water Safety</b></p> <p>Option 1 FRTA to maintain Module 2 or Module 3 qualification.</p> <p>Option 2 Every two-year period, FRTA to receive four hours of in-water CPD in Class 2 water under the supervision of a Module 2 or 3 instructor.</p> <p><b>In-water CPD to include:</b></p> <p><b>Identification and use of appropriate PPE</b></p> <ul style="list-style-type: none"> <li>• Types of PPE; donning and doffing; care maintenance and inspection; record keeping. This can include life jacket or use of Personal Flotation Device (PFD)</li> </ul> <p><b>Demonstration of self-rescue from water</b></p> <p><b>Understand relevant rescue techniques in the role as casualty</b></p> <ul style="list-style-type: none"> <li>• Talk, receive reach pole &amp; throw line</li> </ul> <p><b>Demonstrate techniques for movement in shallow water</b></p> <ul style="list-style-type: none"> <li>• Supported crossing (poles), 1-2-3 person teams; wedge and line astern</li> </ul> <p><b>Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility, and application of suitable control measures</b></p> <ul style="list-style-type: none"> <li>• Equipment issues; lighting; audible and hand signals</li> </ul>

## Defra Training Module 7

### Flood Rescue Strategic Adviser (FRSA) training module

<b>Target group</b>	Existing flood rescue tactical advisers who have an in-depth knowledge of operational, tactical and strategic water and flood incident management and the complexities of wide-area flood rescue.
<b>Scope</b>	This module is designed to develop FRTAs to provide strategic flood rescue advice at Strategic Coordinating Groups and to Defra during wide- and multi-area flooding.
<b>Aim</b>	<p>To develop strategic advisers to enable national deployment to advise and support Strategic Coordinating Groups (SCGs) on behalf of Defra for wide area flooding incidents.</p> <p>To develop advisers to provide flood rescue advice to support and inform Defra during flood incidents, including at the National Flood Response Centre in London.</p>
<b>Minimum development</b>	Demonstrate knowledge and skills relevant to support lead government department coordination and response.
<b>Lead Instructor</b>	All training course will be run by Defra and instructors selected as appropriate.
<b>Recruitment</b>	Defra will select and appoint FRSA from the FRTA group.
<b>Role specification</b>	A detailed role specification, including the pre-requisites, for the FRSA is held by Defra.
<b>Continual Professional Development</b>	<p>FRSAs must maintain both management and water safety elements of the FRTA CPD.</p> <p><b>Individual</b> A minimum of six hours per calendar year completing the CPD learning tools for FRTA on Resilience Direct and FRSA annual training meetings.</p> <p><b>Defra-led</b> Defra provide a four-hour CPD event every two years. It is anticipated this will be delivered over one day and precede the two yearly three-day FRTA CPD event.</p>

# Annex H – Water and flood non-rescue support operations training module

This non-compulsory training module is aimed at workers and volunteers who are not from rescue organisations who work in support of flood response, such as Environment Agency staff, and covers general water safety awareness training and basic self-rescue techniques.

Water & flood non-rescue support operations training module	
<b>Target group</b>	This module is aimed at workers and volunteers who support the wider response to water and flood incidents in a non-rescue role and have appropriate PPE.
<b>Scope</b>	The module is designed to prepare workers and volunteers who support the wider response to water and flood incidents for accidental immersion.
<b>Aim</b>	To train support operatives to identify their limitations and safely and effectively work near or in moving water.
<b>Minimum delivery hours</b>	Minimum of six hours over a minimum of one day when delivered as a standalone course. Minimum of four hours over a minimum of one day if Module 1 completed in previous two months.
<b>Lead Instructor</b>	Module 2 or 3 Instructor
<b>Instructor ratio</b>	Minimum of one Module 2 instructor and one assistant instructor to twelve delegates For every additional suitably qualified instructor the ratio can be increased by a maximum of four delegates assessed against the suitability of the training facilities available to ensure appropriate water and instructor contact time.
<b>Pre-requisites</b>	This module can be delivered as a standalone course.
<b>Training venue</b>	The water selected for this module shall be appropriate to the limits of wading rescue with suitable and appropriate hydrology features, up to Class 2 water, for all aspects of training to be carried out safely and effectively.
<b>Learning Outcomes</b>	<p><b>Demonstrate water rescue scene management and dynamic assessment of risk</b></p> <ul style="list-style-type: none"> <li>Understand the limitations of the water rescue wading responder capability; rescue team organisation; communication systems: hand, audible and radio; hazard recognition and preplanning; risk and incident zones; incident management structure; team roles and responsibilities</li> </ul> <p><b>Identify and apply the role of the water &amp; flood non-rescue support operations training module within the Incident Management Structure</b></p> <ul style="list-style-type: none"> <li>Incident management structure; team health, safety and welfare</li> </ul> <p><b>Apply a working knowledge of hydrology and associated hazards</b></p> <ul style="list-style-type: none"> <li>Recognition of water features and their impact</li> </ul>

	<p><b>Identify and use appropriate PPE</b></p> <ul style="list-style-type: none"> <li>Types of PPE; donning and doffing; care maintenance and inspection; record keeping. This can include life jacket or use of personal flotation device (PFD)</li> </ul> <p><b>Demonstrate self-rescue from water</b></p> <p><b>Understand relevant rescue techniques in the role as casualty</b></p> <ul style="list-style-type: none"> <li>Talk, receive reach pole, and throw line</li> </ul> <p><b>Demonstrate techniques for movement in shallow water</b></p> <ul style="list-style-type: none"> <li>Supported crossing (poles), 1-2-3 person teams; wedge and line astern</li> </ul> <p><b>Identify and explain the additional hazards and difficulties associated with working in darkness and reduced visibility, and application of suitable control measures</b></p> <ul style="list-style-type: none"> <li>Equipment issues; lighting; additional marking requirements; audible signals</li> </ul> <p><b>Flood</b></p> <ul style="list-style-type: none"> <li>Awareness of flooding and associated hazards; pollution; location and incident specific hazards; topography</li> </ul>
<b>Continual Professional Development</b>	<p>A minimum of two hours per calendar year covering the learning outcomes of Module 1.</p> <p>Recorded annual activity-based training should cover the following subjects as a minimum: donning, doffing, and care of water rescue PPE.</p>
<b>Recertification</b>	<p>Recertification is required every three years.</p> <p>Responders with the water &amp; flood non-rescue support operations training module qualification who have maintain competency using internal or peer-led CPD should complete a minimum of six hours over a minimum of one day with learning outcomes, instructor and instructor ratio and venue as detailed above.</p>

# Annex I – Water and flood rescue instructor standards

<b>Defra Module 2 Instructor</b>	
<b>Module 2 - Water &amp; Flood First Responder Instructor</b>	
<b>Target group</b>	This module is aimed at selected search and rescue personnel who wish to undertake development to fulfil the role as a Module 2 instructor. The module builds on Module 3 skills and develops the skills required to effectively safely teach responders to meet the requirements of the Module 2 standard.
<b>Pre-requisite</b>	Module 3 – recognised in-date certificate Advanced first aid Working knowledge of the Defra Flood Rescue Concept of Operations
<b>Minimum training delivery hours</b>	28 hours across a minimum of 4 days
<b>Instructor ratio</b>	One instructor trainer and one instructor for eight delegates.
<b>Assessment</b>	Appropriate assessment to confirm knowledge and competency of all necessary skills. This should include a written assessment & practical assessment that is separate to the training course.
<b>Learning Outcomes</b>	<p>Demonstrate as required skills to a high level within the Module 3 standard. Water rescue scene management and dynamic assessment of risk. Understand the limitations of the role, rescue team, and organisation</p> <ul style="list-style-type: none"> <li>• Working knowledge of all the Defra water &amp; flood modules</li> </ul> <p>Training design and delivery:</p> <ul style="list-style-type: none"> <li>• Lesson Planning</li> <li>• Scenario implementation</li> <li>• Introducing subjects, principles and procedures</li> <li>• Subjects in logical sequence</li> <li>• Coaching complex skills</li> <li>• Training venue assessment</li> <li>• Group maintenance/management</li> <li>• Goal setting for varying levels of ability</li> </ul> <p>Reviews/Assessment:</p> <ul style="list-style-type: none"> <li>• Run task reviews/question and answer sessions</li> <li>• Assess practical/team/command skills</li> <li>• Deliver feedback (group/individual)</li> <li>• Use of multiple methods of assessment</li> <li>• Maximise learning from scenarios and training sessions</li> </ul> <p>Safety Considerations:</p>

	<ul style="list-style-type: none"> <li>• Establishing and monitoring safe systems</li> <li>• Dynamic risk assessment of activities and venues</li> <li>• Written generic risk assessment activities and venues</li> <li>• Rescue students in difficulty</li> </ul> <p>Evaluate Complex Scenarios:</p> <ul style="list-style-type: none"> <li>• Convey logical progressions of response</li> <li>• Convey command and control/multi-agency issues</li> <li>• Convey permutations of rescue systems/resources/environments</li> </ul>
<b>Continual Professional Development</b>	<p>Instructors are required to:</p> <ul style="list-style-type: none"> <li>• Deliver fifty-six hours of Module 2 training in a three-year period. Hours assisting in the instruction of Module 3 courses alongside a Module 3 Instructor count towards this number.</li> <li>• Maintain Module 3 status and CPD as detailed in the Module 3 standard</li> <li>• Maintain CPD log of activities</li> <li>• Maintain a minimum of advanced first aid</li> </ul>
<b>Recertification</b>	<p>Recertification is required every three years.</p> <p>Module 2 Instructors are required to complete a minimum of twelve hours over a minimum of two days recertification, meeting the instructor and instructor ratio and learning outcomes as detailed above.</p>

## Defra Module 3 Instructor

### Module 3 - Water & Flood Rescue Technician Instructor

<b>Target group</b>	This module is aimed at selected search and rescue personnel who wish to undertake development to fulfil the role as a Module 3 instructor. The module builds on Module 3 skills and develops the skills required to effectively safely teach responders to meet the requirements of the Module 3 standard.
<b>Pre-requisites</b>	Module 3 – recognised in-date certificate Advanced First Aid Working knowledge of the Defra Flood Rescue Concept of Operations
<b>Minimum training delivery hours</b>	Fifty-six hours across a minimum of eight days
<b>Instructor ratio</b>	One instructor trainer and one instructor for eight delegates
<b>Assessment</b>	Appropriate assessment to confirm knowledge and competency of all necessary skills. This should include a written assessment & practical assessment that is separate to the training course.
<b>Learning Outcomes</b>	<p>Demonstrate as required skills to a high level within the Module 3 standard. Water rescue scene management and dynamic assessment of risk. Understand the limitations of the role, rescue team &amp; organisation</p> <ul style="list-style-type: none"> <li>• Working knowledge of all the Defra water &amp; flood modules</li> </ul> <p>Training design and delivery:</p> <ul style="list-style-type: none"> <li>• Lesson Planning</li> <li>• Scenario implementation</li> <li>• Introducing subjects, principles and procedures</li> <li>• Subjects in logical sequence</li> <li>• Coaching complex skills</li> <li>• Training venue assessment</li> <li>• Group maintenance/management</li> <li>• Goal setting for varying levels of ability</li> </ul> <p>Reviews/Assessment:</p> <ul style="list-style-type: none"> <li>• Run task reviews/question and answer sessions</li> <li>• Assess practical/team/command skills</li> <li>• Deliver feedback (group/individual)</li> <li>• Use of multiple methods of assessment</li> <li>• Maximise learning from scenarios and training sessions</li> </ul> <p>Safety considerations:</p> <ul style="list-style-type: none"> <li>• Establishing and monitoring safe systems</li> <li>• Dynamic risk assessment of activities and venues</li> <li>• Written generic risk assessment activities and venues</li> </ul>

	<ul style="list-style-type: none"> <li>• Rescue students in difficulty</li> </ul> <p>Evaluate complex scenarios:</p> <ul style="list-style-type: none"> <li>• Convey logical progressions of response</li> <li>• Convey command and control/multi-agency issues</li> <li>• Convey permutations of rescue systems/resources/environments</li> </ul>
<b>Continual Professional Development</b>	<p>Instructors are required to:</p> <ul style="list-style-type: none"> <li>• Maintain CPD to the standard as detailed in Module 3.</li> <li>• Deliver sixty-four hours of training in a three-year period.</li> <li>• Maintain CPD log of activities.</li> <li>• Maintain a minimum of advanced first aid.</li> </ul>
<b>Recertification</b>	<p>Recertification is required every three years.</p> <p>Module 3 Instructors are required to complete a minimum of twelve hours over a minimum of two days recertification meeting the instructor and instructor ratio and learning outcomes as detailed above.</p>

## Defra Module 4 Instructor

### Module 4 – Water & Flood Rescue Boat Operator Instructor

<b>Target group</b>	This module is aimed at selected search and rescue personnel who wish to undertake development to fulfil the role as a Module 4 instructor. The module builds on Module 4 skills and develops the skills required to effectively and safely teach responders to meet the requirements of the Module 4 standard.
<b>Pre-requisites</b>	<ul style="list-style-type: none"> <li>• Module 3 – recognised in-date certificate</li> <li>• Module 4 – recognised in-date certificate</li> <li>• Advanced first aid</li> <li>• Working knowledge of the Defra Flood Rescue Concept of Operations</li> <li>• RYA Level 2 Powerboat Handling Instructor</li> <li>• RYA Advanced Powerboat Handling</li> </ul>
<b>Minimum training delivery hours</b>	Fifty-six hours across a minimum of eight days
<b>Instructor ratio</b>	One instructor trainer and one instructor for six delegates
<b>Assessment</b>	Appropriate assessment to confirm knowledge and competency of all necessary skills. This should include a written assessment and practical assessment that is separate to the training course.
<b>Learning Outcomes</b>	<p>Demonstrate as required skills to a high level within the Module 4 standard. Water rescue scene management and dynamic assessment of risk. Understand the limitations of the role, rescue team &amp; organisation</p> <ul style="list-style-type: none"> <li>• Working knowledge of all the Defra water &amp; flood modules</li> </ul> <p>Training design and delivery:</p> <ul style="list-style-type: none"> <li>• Lesson Planning</li> <li>• Scenario implementation</li> <li>• Introducing subjects, principles and procedures</li> <li>• Subjects in logical sequence</li> <li>• Coaching complex skills</li> <li>• Training venue assessment</li> <li>• Group maintenance/management</li> <li>• Goal setting for varying levels of ability</li> </ul> <p>Reviews/assessment:</p> <ul style="list-style-type: none"> <li>• Run task reviews/question and answer sessions</li> <li>• Assess practical/team/command skills</li> <li>• Deliver feedback (group/individual)</li> <li>• Use of multiple methods of assessment</li> <li>• Maximise learning from scenarios and training sessions</li> </ul> <p>Safety considerations:</p>

	<ul style="list-style-type: none"> <li>• Establishing and monitoring safe systems</li> <li>• Dynamic risk assessment of activities and venues</li> <li>• Written generic risk assessment activities and venues</li> <li>• Rescue students in difficulty</li> </ul> <p>Evaluate complex scenarios:</p> <ul style="list-style-type: none"> <li>• Convey logical progressions of response</li> <li>• Convey command and control/multi-agency issues</li> <li>• Convey permutations of rescue systems/resources/environments</li> </ul>
<p><b>Continual Professional Development (CPD)</b></p>	<p>Instructors are required to:</p> <ul style="list-style-type: none"> <li>• Deliver seventy hours of training in a three-year period.</li> <li>• Maintain CPD log of activities.</li> <li>• Maintain a minimum of advanced first aid.</li> </ul>
<p><b>Recertification</b></p>	<p>Recertification is required every three years.</p> <ul style="list-style-type: none"> <li>• Module 4 Instructors are required to complete a minimum of twelve hours over a minimum of two days recertification meeting the instructor and instructor ratio and learning outcomes as detailed above.</li> </ul>

## Defra Module 5 Instructor

### Module 5 - Water & Flood Incident Manager Instructor

<b>Target group</b>	This module is aimed at selected personnel who wish to undertake development to fulfil the role as a Module 5 instructor. The module builds on Module 5 competences and develops the skills required to effectively teach responders to meet the requirements of the Module 5 standard.
<b>Pre-requisites</b>	<ul style="list-style-type: none"> <li>• Have completed two Water &amp; Flood Incident Manager Courses</li> <li>• Hold an in-date Water &amp; Flood Incident Manager Module 5</li> <li>• Have operational experience in the role of a Water &amp; Flood Incident Manager</li> <li>• Maintain CPD in all areas</li> <li>• Have previously completed a Module 2 Water &amp; Flood First Responder course</li> <li>• Have observed (or completed) a Module 3 Water &amp; Flood Rescue Technician Course</li> <li>• Have observed (or completed) a Module 4 Water &amp; Flood Rescue Boat Operator Course</li> </ul>
<b>Minimum training delivery hours</b>	Thirty-five hours across a minimum of five days.
<b>Lead Instructor</b>	Module 5 Instructor
<b>Instructor ratio</b>	Minimum of two Module 5 instructors to ten delegates. For every additional suitably qualified instructor the ratio can be increased by a maximum of two delegates, assessed against the suitability of the training facilities available to ensure appropriate instructor contact time.
<b>Training venue</b>	Appropriate for learning outcomes.
<b>Assessment</b>	Appropriate assessment to confirm knowledge and competency of all necessary skills. This should include a written assessment & practical assessment that is separate to the training course.
<b>Learning Outcomes</b>	<p>Demonstrate as required skills to a high level within the Module 5 standard and teaching in all areas. Water rescue scene management and dynamic assessment of risk and all areas of water and flood incident management.</p> <ul style="list-style-type: none"> <li>• Working knowledge of all the Defra Water &amp; Flood modules</li> </ul> <p>Training design and delivery:</p> <ul style="list-style-type: none"> <li>• Lesson planning</li> <li>• Scenario implementation</li> <li>• Introducing subjects, principles and procedures</li> <li>• Subjects in logical sequence</li> <li>• Coaching complex skills</li> </ul>

	<ul style="list-style-type: none"> <li>• Training venue assessment</li> <li>• Group maintenance/management</li> <li>• Goal setting for varying levels of ability</li> </ul> <p>Reviews/assessment</p> <ul style="list-style-type: none"> <li>• Run task reviews/question and answer sessions</li> <li>• Assess practical/team/command skills</li> <li>• Deliver feedback (group/individual)</li> <li>• Use of multiple methods of assessment</li> <li>• Maximise learning from scenarios and training sessions</li> </ul>
<p><b>Continual Professional Development</b></p>	<p>Instructors are required to:</p> <ul style="list-style-type: none"> <li>• Deliver sixty-four hours of Water &amp; Flood Management training in a three-year period</li> <li>• Maintain CPD log of activities</li> </ul>

## Annex J – Team typing matrix

The following pages provide a summary outlining the minimum requirements for team typing. These tables can be used as a reference when teams are considering applying to join the Defra Flood Rescue National Asset Register and they will form the basis of assurance visits made on behalf of Defra.

Team Type B – Water & Flood Rescue Boat Team				
Capability	Logistics (Minimum requirements)	Team Structure (7 persons)	Competencies of responder personnel (Minimum no. required)	Incident Command System
Technical water rescue  Search operations within the water environment.  Powerboat rescue operations  In-water operations  Flood response	<ul style="list-style-type: none"> <li>Be available 24 hours a day.</li> <li>Facility for financing supplies and consumables when mobile or on scene.</li> <li>Team to be sustainable with rations for initial 8 hours (from arrival).</li> <li>24 litres of drinking water.</li> <li>Team to be available for up to 72 hours deployed from arrival at MASHA.</li> </ul>	One team manager Two team commanders Four team members  <b>NB:</b> Team manager is for support and welfare considerations and can support up to five teams/assets operating from one MASHA	Four Module 4 Two Module 3 To include: <ul style="list-style-type: none"> <li>Four basic first aid qualified</li> <li>Two advanced first aid qualified</li> </ul> All team responders: <ul style="list-style-type: none"> <li>Minimum 18 years old</li> <li>Trained in manual handling</li> <li>Basic health and safety training</li> <li>Physically fit to complete the role</li> </ul>	All team members to be trained in JESIP awareness and the Flood Rescue Concept of Operations for flood incident management.
Team Type B - Equipment				
Transport	Communications	First aid equipment	Decontamination	Navigation
Vehicle(s) suitable to carry personnel, equipment & welfare needs	<ul style="list-style-type: none"> <li>Handheld communications for all team members, spare batteries and charger (all waterproofed).</li> <li>Mobile phone (waterproofed) with team commander and team manager</li> </ul>	<ul style="list-style-type: none"> <li>1x basic first aid kit</li> <li>1x advanced first aid kit</li> <li>1x basket stretcher (or suitable equivalent)</li> </ul>	<ul style="list-style-type: none"> <li>Anti-bacterial hand gel</li> <li>Anti-bacterial face wipes</li> <li>Anti-bacterial equipment spray</li> </ul>	Handheld GPS system with street mapping facility
Boat	PPE	Technical Equipment	Testing	Data logging
Minimum capacity to drive upstream against 10 mph flow whilst carrying six persons prop guarded.  Ancillary equipment: <ul style="list-style-type: none"> <li>Means to light the vessel for navigation purposes to comply with IRPCS</li> <li>Anchor</li> <li>Fuel containers</li> <li>Lifelines</li> <li>Attachment points for tethers</li> <li>Four paddles</li> <li>Towing equipment suitable for boat</li> </ul>	<ul style="list-style-type: none"> <li>Full PPE for all team members + 1x redundancy kit</li> <li>Drysuit</li> <li>Buoyancy Aid, BS EN 393 or ISO 12402 pt 5 (with 70N Minimum)</li> <li>Correctly coloured helmets PAS 028;2002</li> <li>Footwear</li> <li>Gloves</li> <li>Knife</li> <li>Whistle</li> <li>Thermal layers</li> <li>Personal lighting:</li> <li>Forward white light (i.e. head torch)</li> <li>Solid red light on helmet (enough for three x 12 hours of night operations, with spares)</li> </ul>	<ul style="list-style-type: none"> <li>1x 50m canyon line</li> <li>1x set of technical rescue equipment to achieve efficient 3:1 mechanical advantage and 4-point tethering of boat</li> <li>80x solid blue lights/light sticks</li> <li>30x solid green lights/light sticks</li> <li>80x resealable waterproof bags</li> <li>4x throw line bags x 20m minimum</li> <li>4x throw line bags x 15m minimum</li> <li>Scene lighting</li> <li>Search lighting</li> <li>Hand tool kit to enable basic fault finding and maintenance whilst deployed</li> <li>6x wading poles</li> <li>4x adult casualty flotation devices</li> </ul>	All equipment should be suitably maintained, inspected, tested and certified in accordance with manufacturers' guidelines and current legislation.	Suitable means of logging incident briefings and deployment information.

		• 2x child casualty flotation devices		
Team Type C – Water & Flood Rescue Technician Team				
Capability	Logistics (Minimum requirements)	Team Structure (7 persons)	Competencies of responder personnel (Minimum no. required)	Incident Command System
<p>Technical water rescue</p> <p>Search operations within the water environment.</p> <p>In-water operations</p> <p>Non-powered boat operations</p> <p>Flood response</p>	<ul style="list-style-type: none"> <li>• Be available 24 hours a day.</li> <li>• Facility for financing supplies and consumables when mobile or on scene.</li> <li>• Team to be sustainable with rations for initial 8 hours (from arrival).</li> <li>• 24 litres of drinking water</li> <li>• Team to be available for up to 72 hours deployed from arrival at MASHA.</li> </ul>	<p>One team manager</p> <p>One team commander</p> <p>Five team members</p> <p><b>NB:</b> Team manager is for support and welfare considerations and can support up to 5 teams/assets operating from one MASHA</p>	<p>Six Module 3</p> <p>To include:</p> <ul style="list-style-type: none"> <li>• Five basic first aid qualified</li> <li>• One advanced first aid qualified</li> </ul> <p>All team responders:</p> <ul style="list-style-type: none"> <li>• Minimum 18 years old</li> <li>• Trained in manual handling</li> <li>• Basic health and safety training</li> <li>• Physically fit to complete the role</li> </ul>	<p>All team members to be trained in JESIP awareness and the Flood Rescue Concept of Operations for flood incident management.</p>
Team Type C – Equipment				
Transport	Communications	First aid equipment	Decontamination	Navigation
<p>Vehicle(s) suitable to carry personnel and equipment &amp; welfare needs</p>	<ul style="list-style-type: none"> <li>• Handheld communications for all team members, spare batteries and charger (all waterproofed).</li> <li>• Mobile phone (waterproofed) with team commander and team manager</li> </ul>	<ul style="list-style-type: none"> <li>• 1 x basic first aid kit</li> <li>• 1 x advanced first aid kit</li> <li>• 1 x basket stretcher (or suitable equivalent)</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-bacterial hand gel</li> <li>• Anti-bacterial face wipes</li> <li>• Anti-bacterial equipment spray</li> </ul>	<p>Handheld GPS system with street mapping facility</p>
Boat	PPE	Technical Equipment	Testing	Data Logging
<p>Raft/boat, minimum 6 persons capacity for tethering operations or basic paddle boat handling.</p> <p>Suitable for wading/paddling rescue of persons without unduly getting the casualties wet.</p> <p>Ancillary equipment:</p> <ul style="list-style-type: none"> <li>• Lifelines</li> <li>• Attachment points for tethers</li> <li>• 4 x paddles</li> </ul>	<ul style="list-style-type: none"> <li>• Full PPE for all team members + 1 x redundancy kit</li> <li>• Drysuit</li> <li>• Buoyancy Aid, BS EN 393 or ISO 12402 pt 5 (with 70N Minimum)</li> <li>• Correctly coloured helmets PAS 028;2002</li> <li>• Footwear</li> <li>• Gloves</li> <li>• Knife</li> <li>• Whistle</li> <li>• Thermal layers</li> <li>• Personal lighting: <ul style="list-style-type: none"> <li>○ Forward white light (i.e. head torch)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 1 x 50m canyon line</li> <li>• 1 x set of technical rescue equipment to achieve efficient 3:1 mechanical advantage and 4-point tethering of boat/raft.</li> <li>• 80 x solid blue lights/light sticks</li> <li>• 30 x solid green lights/light sticks</li> <li>• 80 x resealable waterproof bags</li> <li>• 4 x throw bags x 20m minimum</li> <li>• 4 x throw bags x 15m minimum</li> <li>• Scene lighting</li> <li>• Search lighting</li> <li>• 6 x wading poles</li> <li>• 4 x adult casualty flotation devices</li> <li>• 2 x child casualty flotation devices</li> </ul>	<p>All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines and current legislation.</p>	<p>Suitable means of logging incident briefings and deployment information.</p>

	<ul style="list-style-type: none"><li>○ Solid red light on helmet (enough for 3 x 12 hours night operations, with spares)</li></ul>			
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Team Type D – Water & Flood Rescue Technician Team				
Capability	Logistics (Minimum requirements)	Team Structure (7 persons)	Competencies of responder personnel (Minimum no. required)	Incident Command System
Support operations  Margin based and non-buoyant flood response  Non-buoyant wading activities	<ul style="list-style-type: none"> <li>Be available 24 hours a day.</li> <li>Facility for financing supplies and consumables when mobile or on scene.</li> <li>Team to be sustainable with rations for initial 8 hours (from arrival).</li> <li>16 litres of drinking water</li> <li>Team to be available for up to 3 days on scene.</li> </ul>	One team manager One team commander Three team members  <b>NB:</b> Team manager is for support and welfare considerations and can support up to 5 teams/assets operating from one MASHA	Four Module 2  To include: <ul style="list-style-type: none"> <li>Four basic first aid qualified</li> </ul> All team responders: <ul style="list-style-type: none"> <li>Minimum 18 years old</li> <li>Trained in manual handling</li> <li>Basic health and safety training</li> <li>Physically fit to complete the role</li> </ul>	All team members to be trained in JESIP awareness and the Flood Rescue Concept of Operations for flood incident management.
Team Type D – Equipment				
Transport	Communications	First aid equipment	Decontamination	Navigation
Vehicle(s) suitable to carry personnel and equipment & welfare needs	<ul style="list-style-type: none"> <li>Handheld communications for all team members, spare batteries and charger (all waterproofed).</li> <li>Mobile phone (waterproofed) with team commander and team manager</li> </ul>	<ul style="list-style-type: none"> <li>1x Basic first aid kit</li> </ul>	<ul style="list-style-type: none"> <li>Anti-bacterial hand gel</li> <li>Anti-bacterial face wipes</li> <li>Anti-bacterial equipment spray</li> </ul>	Mapping capability via electronic or physical maps
Boat	PPE	Technical Equipment	Testing	Data Logging
Raft or sled, Minimum 3 persons capacity for tethering operations or wading rescue of persons without unduly getting the casualties wet.  Ancillary equipment: <ul style="list-style-type: none"> <li>Lifelines</li> <li>Attachment points for tethers</li> </ul> NB: No paddles permitted – team type D is a non-buoyant rescue team.	<ul style="list-style-type: none"> <li>Full PPE for all team members + 1x redundancy kit</li> <li>Drysuit</li> <li>Buoyancy Aid, BS EN 393 or ISO 12402 pt 5 (with 70N Minimum)</li> <li>Correctly coloured Helmets PAS 028;2002</li> <li>Footwear</li> <li>Gloves</li> <li>Knife</li> <li>Whistle</li> <li>Thermal layers</li> <li>Personal lighting:               <ul style="list-style-type: none"> <li>Forward white light (i.e. head torch)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>1 x set of technical rescue equipment to achieve 4-point tethering of raft/sled.</li> <li>60 x solid blue lights/light sticks</li> <li>20 x solid green lights/light sticks</li> <li>80 x re-sealable waterproof bags</li> <li>4 x throw bags 15m minimum</li> <li>Scene lighting</li> <li>Search lighting</li> <li>4 x wading poles</li> <li>2 x adult casualty flotation devices</li> <li>1 x child casualty flotation devices</li> </ul>	All equipment should be suitably tested, maintained and certified in accordance with manufacturers' guidelines and current legislation.	Suitable means of logging incident briefings and deployment information.

	<ul style="list-style-type: none"><li>○ Solid red light on helmet (enough for 3 x 12 hours night operations, with spares)</li></ul>			
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# Appendix 1 - Glossary of abbreviations

AoO: Area(s) of Operation  
ARCC: Aeronautical Rescue Coordination Centre  
BASICS: British Association for Immediate Care  
BEIS: Department for Business, Energy and Industrial Strategy  
CCS: Civil Contingencies Secretariat  
CO: Cabinet Office  
COBR: Cabinet Office Briefing Room  
COP: Common Operating Picture  
CPD: Continual Professional Development  
CTAC: Combined Tactical Air Cell  
Defra: Department for Environment, Food and Rural Affairs  
DfT: Department for Transport  
DSTL: Defence Science and Technology Laboratory  
DVI: Disaster Victim Identification  
EA: Environment Agency  
ELS: Enhanced Logistics Support  
EOC: Emergency Operations Centre  
EUCPM: European Union Civil Protection Mechanism  
FFC: Flood Forecasting Centre  
FGS: Flood Guidance Statement  
FRCO: Flood Rescue Concept of Operations  
FRSA: Flood Rescue Strategic Adviser  
FRTA: Flood Rescue Tactical Adviser  
GLO: Government Liaison Officer  
HART: Hazardous Area Response Team  
HEMS: Helicopter Emergency Medical Service  
HLS: Helicopter Landing Site  
HO: Home Office  
HNS: Host Nation Support  
HSE: Health and Safety Executive  
HVP: High Volume Pump  
IVC: Initial Visual Check  
JDM: Joint Decision Making  
JESIP: Joint Emergency Services Interoperability Principles  
JOL: Joint Organisational Learning  
LGD: Lead Government Department  
LKP: Last Known Point  
LRF: Local resilience forum  
MAFP: Multi-Agency Flood Plans  
MASHA: Multi-Agency Strategic Holding Area  
MCA: Maritime and Coastguard Agency  
MDU: Mass Decontamination Unit

MERIT: Medical Emergency Response Incident Team  
MHCLG: Ministry of Housing, Communities and Local Government  
MoD: Ministry of Defence  
MoU: Memorandum of Understanding  
MR: Mountain Rescue  
NAR: National Asset Register  
NCAF: National Coordination and Advisory Framework  
NFCC: National Fire Chiefs Council  
NFRC: National Flood Response Centre  
NGO: Non-governmental organisation  
NPAS: National Police Air Service  
NMOC: National Maritime Operations Centre  
NRFC: National Resilience Fire Control  
NSWWS: National Severe Weather Warning Service  
OGD: Other government department  
PLS: Place Last Seen  
POLKA: Police Online Knowledge Area  
PoISA: Police Search Adviser  
PPE: Personal Protective Equipment  
RAFLO: Royal Air Force Liaison Officer (RAFLO)  
RD: ResilienceDirect  
RVP: Rendezvous Point  
SCC: Strategic Coordination Centre  
SCG: Strategic Coordinating Group  
STAC: Scientific and Technical Advice Cell  
TCC: Tactical Coordination Centre  
TCG: Tactical Coordinating Group  
ToR: Terms of Reference  
USAR: Urban Search and Rescue  
WFIM: Water & Flood Incident Manager