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for Environment
Food & Rural Affairs

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Surveying for Flood Resilience in Individual Properties: Competency and training route map

FD2681

July 2015



Llywodraeth Cymru
Welsh Government



Joint Flood and Coastal Erosion Risk Management
Research and Development Programme

Surveying for Flood Resilience in Individual Properties

Competency and Training Route Map FD2681

Produced: 29th July 2015

Funded by the joint Flood and Coastal Erosion Risk Management Research and Development Programme (FCERM R&D). The joint FCERM R&D programme comprises Defra, Environment Agency, Natural Resources Wales and Welsh Government. The programme conducts, manages and promotes flood and coastal erosion risk management research and development.

This is a report of research carried out by a research consortium comprising JBA Consulting, Manchester Metropolitan University, University of Manchester, National Flood Forum and Turnstone Learning Ltd, on behalf of the Department for Environment, Farming and Rural Affairs



Research contractor: JBA Consulting, Manchester Metropolitan University, University of Manchester, National Flood Forum and Turnstone Learning Ltd.

Authors: Peter May, Phil Emonson, Paul O’Hare, Paul Cobbing, Dr Angela Connelly, Nigel Lawson and Hugh Burchard.

Publishing organisation

Department for Environment, Food and Rural Affairs
Flood Risk Management Division,
Nobel House,
17 Smith Square
London SW1P 3JR

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Training and developing competency

Introduction

This document explores the issues that were investigated when considering how a development programme for an iFRA, referred to in the tender documentation as a competency/training route map, might be established. The purpose of developing a route map is to encourage the establishment of a corpus of competent professionals able to survey, project manage and sign-off property level protection flood resilience schemes.

Objectives

This document describes the steps that we took to identify the knowledge and skills likely to be needed to become an iFRA, addresses the issues of accreditation and considers which existing occupations might be suitable stepping-stones to becoming an iFRA. We describe the development options that should be considered in order for a professional to become an iFRA. We also identify barriers to the development of professionals.

Stages of work.

1. Investigating the knowledge and skill subject areas needed by an iFRA
2. Consulting with stakeholders
3. Considering endorsement, accreditation and certification
4. Reporting on progress and consulting the Project Board
5. Occupations that might be developed to become iFRAS
6. Options for delivering a iFRA development programme
7. Potential barriers to success
8. Post-research activity.
9. Existing development resources
10. iFRA development programme flow chart

Stage 1: Investigating the knowledge and skill subject areas needed by an iFRA

At the outset, the consortium members considered what an iFRA would need to know (knowledge) and what they would need to be able to do (skills). As a starting point, we used a list of the subject areas associated with a PLP service, based on the service that JBA Consulting provide to the Environment Agency, Local Authorities, communities and property owners.

We examined case studies and examples of a range of PLP projects to ascertain whether there were reasons for excluding any of the subject areas. Our view is that without the full range of subject areas, there is a risk that an incomplete service would ensue, potentially resulting in an erosion of confidence in the iFRA role and any flood resilience measures that had been implemented.

At this stage, we focused on identifying areas of knowledge and skill that will be needed rather than describing and mapping the detailed level of knowledge and competency required. We decided that defining exactly what will be needed will be influenced by other factors i.e. stakeholder views and the views of training, accreditation and certification bodies. We decided that the time to define detail would occur later in the design of the development process.

Part of Stage 1 involved considering whether we needed to specify at the outset that the responsibilities of an iFRA should be discharged by an individual, by a group of individuals or by an organisation. We consider that this cannot be determined until a greater degree of detail of the knowledge and skills needed has been specified. This should form part of the work when the project moves into its next phase i.e. a detailed mapping of the requirements of the role.

At the end of stage 1, we conclude that:

- *The iFRA development pathway will need to include knowledge and skills elements in all the subject areas used to deliver current PLP schemes*
- *The detail of knowledge and skills required will need further consideration*

Further thought and investigation will be needed before deciding whether the iFRA service could be delivered by individuals or by organisations.

The subject areas of knowledge and skill are listed in Table 2 below.

Stage 2: Stakeholder consultation

Having formed the list of subject areas, we asked stakeholders to give us their views on how important the subject areas are for the role of an iFRA. In our consultation exercise, we asked stakeholders to suggest which subject areas might be considered as 'essential' and which 'desirable'.

Participants were asked to rank each potential knowledge area in terms of whether they regarded it as essential or desirable and to provide explanatory text to justify their choice. There were 62 responses in total. Table 2 shows the number of times that each knowledge area was regarded to be essential.

Many consultation respondents indicated, for example, why they considered certain skills to be a 'desirable' knowledge area. Items such as 'structural survey', 'hydrology', and 'hydrogeology' were felt to be important but not required in all cases, which is why they

achieve lower scores. Consequently, an iFRA needs to recognise where these knowledge areas may be required in specific properties, and call in specialist skills where identified.

Table 2: Ranking of knowledge areas in terms of consideration as an ‘essential’ area

Knowledge Area	Number of times considered ‘essential’
Flood risk assessment	58
Client liaison	50
Flood risk management	49
Building design and construction	47
PLP products	47
Report writing	46
Community liaison	40
Data acquisition and management	37
Flood Warning	36
Emergency Planning	30
Hydrology	30
Insurance	27
Structural Survey	23
Hydrogeology	23
Geographical Information System (GIS)	20

At the top of the scale, knowledge of flood risk management was thought to be very important because of the number of different agencies involved and the presence of other schemes. This is an important point; the USA international case study shows that PLP can often be used as a stop-gap measure whilst communities await larger structural defences. In the UK context, an iFRA should be aware of impending schemes and communicate this to the property owner.

Consultancies and the insurance industry highlighted that technical competence is the highest priority (and accordingly considered technical knowledge areas as essential) whilst community and client liaison were regarded as secondary (desirable) elements.

After this consultation, it became clear that topics such as 'GIS' and 'Structural Survey' were in fact skills associated with existing knowledge areas and were subsumed into those.

We conclude from our Stage 2 work that not all the skills to deliver a flood assessment service for property owners need to be held by an iFRA. Our stakeholder consultation led us to conclude that a basic knowledge of each subject area should be regarded as essential but that the skills needed to deliver some tasks could be undertaken, under the guidance of the iFRA, by a colleague (if the iFRA was operating as part of an organisation) or by a third party expert (if the iFRA was acting as an independent consultant).

Stage 3: Considering endorsement, accreditation and certification

An additional part of our consultation with stakeholders asked them whether they thought that the role of an iFRA should be endorsed or accredited by a relevant organisation. The overwhelming response was in favour of accreditation, reflecting the importance of the role and the need for a formal and robust development process.

Accreditation is the process of assessing the technical competence of organisations offering certification services.

Certification involves ensuring that a service (in the case of an iFRA) meets the standards required to deliver a specified quality of service to customers.

Endorsement is the support, backing or approval of a service.

It was clear from the consultation survey that accreditation was the favoured option: 35 out of 43 respondents to the question chose accreditation outright. The insurance industry considered accreditation to be a viable and necessary option: '*Accreditation which would assist in recognition of flood resilient repairs by insurance companies*' (Insurance industry). Stakeholders also identified potential barriers to accreditation which included the length of time to implement an accreditation scheme which may raise costs. Since there was no guarantee of a substantial amount of PLP work in the future, there may be a low uptake of any proposed scheme.

Feedback from our research was that a role that is accredited and certificated was very strongly preferred above endorsement in order to assure the quality of service. One identified route included using existing accreditation for professional organisations (such as chartered surveying, chartered engineering, and so on) with an additional iFRA qualification endorsed by the government or, at least, government-backed.

Stage 4: Consulting the Project Board

At the Project Board meeting held on 12 Feb 2015, the consortium presented an overview and update of our work. The Project Board were asked whether they believed that the consortium had identified all the knowledge and skills needed for an iFRA service. The response was that we had and that our list of subject areas was comprehensive. It was

also stated that we would be very unlikely to find a single person who had the full range of knowledge and skills. The Project Board also thought that the role would probably need practitioners with a high level of qualifications.

At the Project Board, it was highlighted that emergency planning professions and those with a background in dealing with flooding issues might also be suitable to carry out the role of an iFRA

Stage 5: Considering occupations that might be developed to become iFRAS

The brief refers to the term 'surveyor' and the broad concept of the role of the iFRA has a great deal of surveying in its description. The consortium looked at typical job descriptions and professional qualifications for professionals including Estate Agents and Loss Adjustors sourced from Graduate Prospects (www.prospects.ac.uk). Given the identification in stages one to four of knowledge and skills likely to be needed, the job description for a Surveyor contained more of the subject areas relevant to the proposed role of an iFRA than the Estate Agents and Loss Adjustors.

During the course of Project Board and Steering Group meetings, the question of whether the consortium could see a way in which professionals from backgrounds other than surveying, could be seen as potential iFRA's has been raised. Our research suggests that it is possible that a range of professionals could become iFRA's but depends on:

- The range and depth of knowledge and skills that an iFRA needs to have or to 'contract in'
- Whether it is deemed necessary or desirable to specify 'entry' qualifications e.g. Chartered status of a professional organisation
- The size of the knowledge and skills gap between the competence level of the entrant and the standards set for the iFRA award of professional competence. If the gap between the iFRA role specification and the 'natural profession' e.g. Estate Agent is too great, it may not be realistic to expect or to be able to develop people to bridge the gap.

Our conclusion from this section of work is that the gap between the role of a Surveyor and the iFRA is smaller than between an Estate Agent and an iFRA. The consortium do not rule out the ability of an Estate Agent or other professional from a similar background to undertake an iFRA role (indeed, some Estate Agents are Chartered Surveyors). Some professional backgrounds will find it easier to develop the competencies to become an iFRA than others; for example, those working in water engineering or emergency planning. However, the issues of time, cost and return on investment will need to be considered.

In order to provide the opportunity to develop the iFRA role with a minimum of delay, the option in the first instance of encouraging development towards iFRA from a background in property, flooding or emergency planning might be adopted.

Stage 6: Options for delivering a iFRA development programme

We highlight that ‘training’ is probably not the most suitable term to describe the development of capability for someone seeking to become an iFRA; ‘development’ is a more suitable term.

In simple terms, training may be regarded as the practice of acquiring and refining practical skills; development covers a wider range of knowledge, skills and experienced based activities

Different types of skills and knowledge-sharing techniques might be used including teaching, on-the-job training and self-directed learning. The decision on the techniques used will depend on the nature for the development required, cost, time and the availability of subject experts and prospective iFRA’s.

Knowing and understanding the basics of a wide range of subjects could be delivered via on-line learning. This would be appropriate for the level of learning required and easy for prospective iFRA’s to access.

We note that the RICS professional development resources includes the ‘Certificate in Building Surveying’ <https://academy.rics.org/distancebs> and a programme delivered with some of these characteristics might be appropriate.

We conclude that a blend of techniques is likely to be the most suitable and realistic in delivering an iFRA development pathway. The critical point is that a profile of knowledge and skills needed to become an iFRA needs to be specified so that suitable existing or a role-specific development programme can be formed.

Stage 7: Potential barriers to success

The consortium have considered what barriers might exist in relation to describing a development programme

A decision will have to be made regarding the appointment of organisations responsible for agreeing what elements of knowledge and skill should be included in the register.

Three organisations with whom there has been long-standing dialogue regarding PLP are RICS (building surveying), CIWEM (flood management) and EPS (emergency planning). It is stressed that the identification of these organisations does not suggest any form of preference, simply that these three organisations might represent a relevant starting point for further discussions. For building construction and surveying expertise, additional bodies might include the Institute of Civil Engineering (ICE), the Institution of Structural Engineers, the Chartered Institute of Building (CIOB) and the Building Research Establishment (BRE); for flood management, the Institute of Water, the British Hydrological Society (BHS) and the Geological Society might all be considered as being able to offer knowledge and expertise; emergency planning might include members of the fire and rescue community.

The suggestions of organisations is not exhaustive and further investigation should be carried out once the nature of the iFRA role has been developed and agreed.

Given the need for organisations to collaborate on such a complex subject as PLP, the accreditation issue, if delivered by an organisation representing one of the strands (flood, property or emergency planning) is unlikely to be able to represent the whole picture in equal and accurate terms.

Stage 8: Post- research activity.

In addition to meeting the demands of the brief, we arranged for three leading organisations (Royal Institute of Chartered Surveyors (RICS), CIWEM and Emergency Planning Society (EPS)) to meet and consider the idea of collaborating on the design of a competency/training route map. This was undertaken as we wanted to gain expert opinion regarding the potential of devising a customised development programme that could promote the forming of an iFRA role.

Communications with these three organisations has continued in order to maintain the momentum that has been generated.

Stage 9: Existing development resources.

Having researched and consulted stakeholders about the knowledge and skills likely to be needed to become an iFRA, we do not think that a single course will provide the knowledge and skills likely to be required.

Many learning, training and other developmental activities exist that might contribute to the resources needed to develop iFRA's.

Once again, which of these existing resources are utilised (or new ones developed) will depend on the knowledge and skills profile that an iFRA role is given.

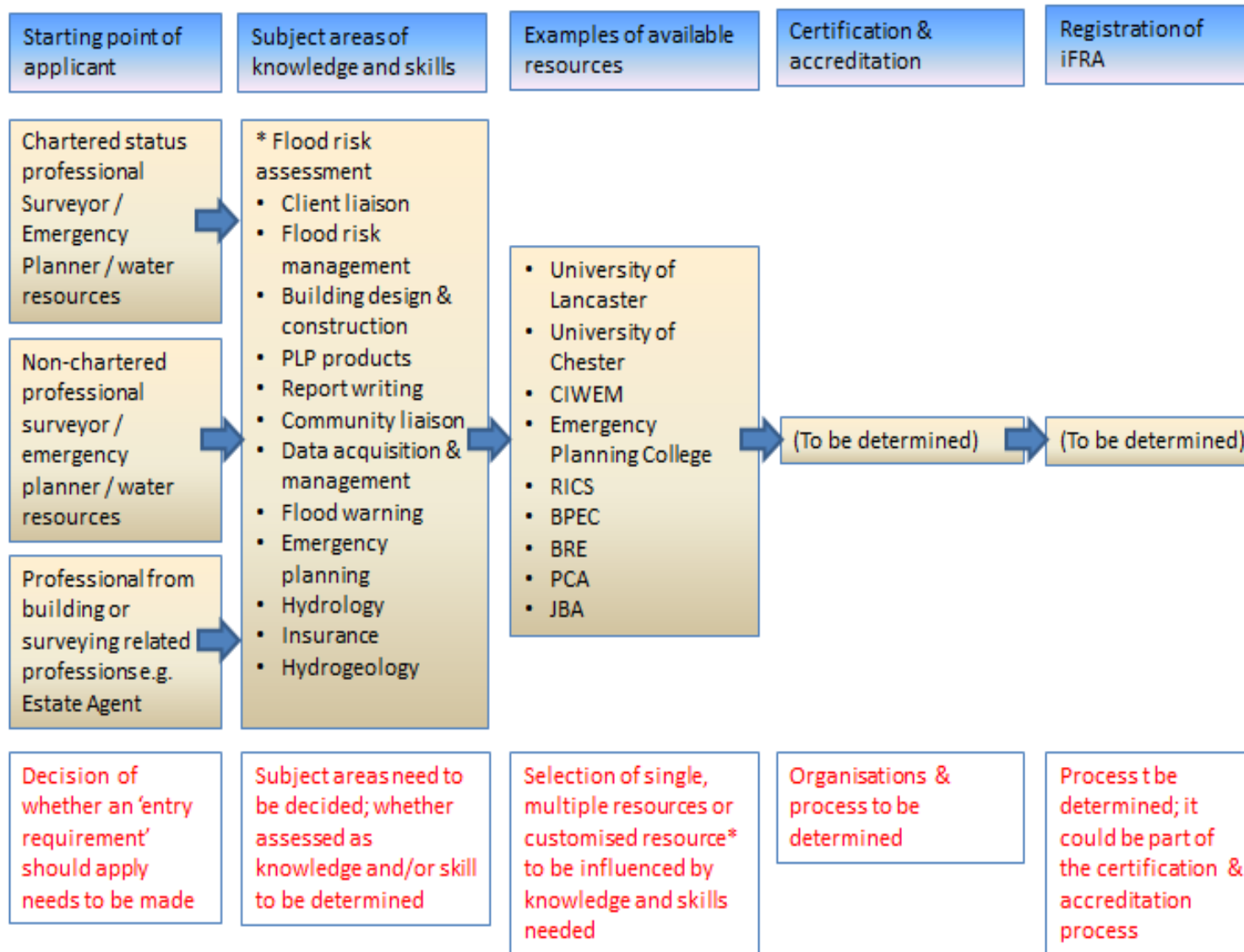
10. iFRA development programme flow charts

The first chart shows the stages that need to be completed in order to produce an iFRA competency and accreditation process.

The stages to be determined are those that depend on appropriate organisations being identified as being able to certificate and accredit development schemes. These organisations can be commissioned once the scope and responsibilities of an iFRA have been agreed.

The second chart provides links to development resources that might be utilised in order to produce a development programme for iFRA's.

iFRA Competency and Accreditation Model Process Flow Chart



iFRA Competency and Accreditation Model Process Flow Chart A Selection of Available Resources

Academic resources

- Sustainable Drainage Systems <http://www.chester.ac.uk/professional-courses/cpd/suds>
- FRA for Developers, Planners & Lawyers <http://www.chester.ac.uk/professional-courses/cpd/fra-dpl>
- Building a Flood Resistant Society <http://www.chester.ac.uk/professional-courses/cpd/bfrs>
- Introduction to Flood modelling <http://www.chester.ac.uk/professional-courses/cpd/film>
- Postgraduate courses in Flood and Coastal Risk Management <http://www.lancaster.ac.uk/lec/postgraduate/cpd-short-courses/pg-cert-in-flood-and-coastal-risk-management/>

Professional Subject Expert Resources

- CIWEM accredit academic courses to meet the educational requirements for membership of the Institution at appropriate grades <http://www.ciwem.org/education-and-training/academic-accreditation.aspx>
- Emergency Planning College training courses <http://www.epresilience.com/services/educate/training-courses/>. There are a number of courses where the background knowledge may be useful as part of the awareness-level element of learning.
- Flooding Mitigation & Management <https://academy.rics.org/web-classes/residential-property/flooding-mitigation-Management>
- Flood Risk – Identifying and Dealing With It <https://academy.rics.org/e-learning/property/flood-risk-identifying-and-dealing-with-it>
- Certificate in building surveying <https://academy.rics.org/distancebs>

Commercial Resources

- BPEC - Survey and Installation of Flood Mitigation Systems
- BRE - <https://www.bre.co.uk/academy/>
- JBA - <http://www.jbaconsulting.com/environmental-courses/water-training>
- PCA - [structural waterproof training](#)

Conclusion

Our research, consultation and findings indicated that in order to develop a cohort of iFRA's

- Subject areas of flood management, emergency planning and building construction should be considered as a broad base for an iFRA development programme.
- A realistic view of how the iFRA service would be funded and delivered needs to be formed

The elements of knowledge and skills required to meet the requirements of the subject areas need to be defined.