PROJECT SPECIFICATION

Title: Assessing the decommissioning and localisation of Flood Management Assets

Introduction

Constraints on Exchequer funding for flood and coastal erosion risk management (FCERM) in the face of increasing demand have led to the need to consider options for systems which do not provide sufficient benefit in terms of affordability or economic case. The Long Term Investment Strategy recognises that climate change, the deterioration of assets and continuing pressure to build in areas at risk of flooding, will contribute to increased flood and coastal erosion risk. Options to decommission assets have had increasing attention in recent years, alongside those to transfer Environment Agency assets to other operators with a greater local stake in management outcomes ("localisation"). Some 45% of the total number of flood risk management assets are already in the hands of local players such as farmers, Internal Drainage Boards or others in local communities with EA responsible for managing the remaining 55% of assets.

Options to decommission or localise can be very challengingand where traditional economic (or funding) appraisal identifies "walking away" as the optimum approach, or national-level funding considerations highlight a role for localisation, it is nevertheless silent on how this can be rationally achieved.

There are a number of issues that need to be explored in relation to decommissioning and localising or transferring assets. The focus of this project is on identifying and understanding these issues, highlighting barriers to, and the benefits of, transfer, and developing an approach which will allow assets to be decommissioned or localised/transferred effectively. The overall aim of the project is to provide research evidence to facilitate appropriate decommissioning and local transfer of systems to ensure the Environment Agency can focus on the more strategic systems and allow other operators to manage systems where that is efficient and beneficial.

To address these questions and facilitate the ongoing development of an effective approach to decommissioning and local transfer, a joint research initiative between Defra and the Environment Agency has been developed through the Joint Flood and Coastal Erosion Risk Management Research and Development Programme. The research will comprise of two linked work packages that will address the key issues associated with the decommissioning and transfer/localisation of flood management assets outlined in brief the following table and detailed research specification.

Table 1. Outline of work Packages

Work Package	Objective
Work Package 1: Making the case for decommissioning and localisation/transfer of assets (to be led by Defra)	To identify and assess the extent of potential decommissioning and transfer of FCERM systems[1] in England and Wales and the factors that determine when these approaches are appropriate. To understand how barriers to

[1] A "system" is defined as consisting of those flood defence assets that relate to main river or sea flooding, upon which we may chose to exercise our operational or direct enforcement powers and which contributes to managing flood risk to a discrete location.

	decommissioning and transfer can be overcome, and ways in which Defra could facilitate this process.
Work Package 2: Providing practical advice to support localisation or withdrawal of maintenance from FCERM assets (to be led by the Environment Agency)	To improve our understanding of what is likely to happen (any physical deterioration, impacts and benefits such as environmental improvements) when we localise or discontinue maintenance of FCRM assets and use this knowledge to develop a consistent evidence based approach to withdrawal of maintenance from assets. Provide practical advice and a consistent risk-based framework to mitigate key risks and support localisation or withdrawal of maintenance.

Delivering the two work packages will require strong co-ordination between the two elements of the project. It is envisioned that work package 1 will take place first, to be followed on completion by work package 2. The findings of work package 1 will inform the second work package, particularly in terms of candidate systems to be used to develop the guidance. In order to ensure the project is co-ordinated and meets the overall aims and objectives, a single project board will be established to over-see the project, and will be chaired by Defra for work package one, and by the Environment Agency for work package two.

Overall Objective

To assess the extent of potential decommissioning and transfer of FCERM systems in England and Wales and the factors that determine when these approaches are appropriate. To understand how barriers to decommissioning and transfer can be overcome, and describe practical approaches and best practice for doing this.

Work Package 1: Making the case for decommissioning and localisation/transfer of assets

Aim

The aim of work package 1 is to understand the circumstances in which decommissioning and localisation/transfer of assets should be pursued. This is intended to provide the rationale and answer the 'why' question in relation to decommissioning and localisation/transfer.

Research Questions

1. Scale of the issue: what is the likely number of FCERM systems and assets within them, in which ongoing EA maintenance or investment is likely to prove either **uneconomic**[2] or **unaffordable**[3], over the Long Term Investment Strategy period (25 years)?

[2] An "uneconomic" system is defined as one where the social benefits of ongoing activity are outweighed by the social costs.

2. What are the barriers to transferring FCRM assets to other parties and can characteristics of assets be identified which would make them easier or more difficult to transfer?

3. In what ways could these barriers be overcome? What type of support might Defra, EA and others be able to provide to enable or facilitate asset transfer?

4. What are the factors that determine whether decommissioning or transfer are viable options?

5. What examples can be found of instances where asset decommissioning or transfer has successfully taken place, and what were the key factors that enabled this to happen? What were the effects of the transfer, including environmental effects?

6. What is the likely level of Environment Agency and other public resources which will be required to withdraw or effect transfer of these systems, in terms of staff time in community engagement and other costs?

Specific Objectives

These are as follows:

i. Using data from EA System Asset Management Plans and other relevant sources, provide an estimate of the number of FCERM systems and the assets within them, which may be suitable for decommissioning or transfer to other operators, based on economic, affordability or other strategic considerations, over the Long Term Investment Strategy period (25 years);

ii. Develop a typology of system and asset types according to the ease of potential decommissioning and transfer and set out opportunities and barriers for different types;

iii. Identify the skills, resources, capacities, funding and any other factors that determine whether asset transfer could take place, including any support that could be provided by Defra, the EA and others;

iv. Provide case studies of successful decommissioning and/or localisation/transfer, identifying key factors that enabled this to happen, lessons learned and the actual effects of the decommissioning.

v. Through consultation with EA and the results under Objectives i) and ii), provide an aggregate assessment of the likely costs of potential decommissioning and transfer over the 25-year period;

Methodology / Programme of work

[3] An "unaffordable" system is defined as one where maintenance activity is not justified by sufficient benefit compared with other systems, or (for capital investment) where the Partnership Funding score is such that a total funding package is unlikely to be achievable.

This is primarily a desk-based research project but contractors will need to work closely with EA, LLFAs and IDBs to assess evidence from the System Asset Management Plans and potentially other sources such as the National Flood Risk Assessment. This may require some visits to and/or working from EA, LLFA and IDB offices. Consideration of case studies will also require structured engagement with project staff in EA and potentially other partners (such as Local Authorities) and IDBs to assemble qualitative evidence and lessons learned. Tenderers should consider that interviews with other stakeholders may also be necessary as part of the project.
The aim is to commence the project in July 2014 and complete by January 2015.

Deliverables

Defra requires the following deliverables:

1. Inception report detailing agreements made between Defra and contractors at the inception meeting.
2. Interim report 1 – covering Objectives i and ii (Extent of systems and typology)
3. Interim report 2 – covering Objectives iii and iv (Supporting decommissioning and transfer)
4. Draft Provisional Work Package report – including updated material from interim reports 1 and 2 and the remaining objectives.
5. Agreed Provisional Work package report (pending any lessons from Work Package 2) following review by the Steering Group
6. Dissemination event for EA and Defra staff

Work Package 2 - Providing practical advice to support localisation or withdrawal of maintenance from FCERM assets

Aim
The aim of Work Package 2 is to understand the physical impacts and associated risks of localising or discontinuing maintenance of assets. This will provide practical advice on approaches to localisation and decommissioning of assets. A coherent risk-based approach will be developed to support systematic understanding of key risks and enable identification of appropriate mitigation measures. This will include best practice examples and practical advice on overcoming some of the common barriers identified in work package 1. This work package will seek to support practitioners tasked with asset localisation or discontinuing maintenance in answering the 'how' question.

Research Questions

1. How will assets physically deteriorate when no (or substantially reduced) maintenance is undertaken and what are the impacts of this?
2. What are the key risks associated with physical deterioration of assets under a reduced or discontinued maintenance regime?
3. What existing practical approaches are used to manage these key risks?
4. Are there any ongoing or one off interventions needed to mitigate risks when maintenance is discontinued, if so what level of intervention will be required and how can these be justified?

5. How can the expected impacts of discontinuing maintenance, and the effectiveness of any mitigating measures to limit these, be assessed in a consistent way?
6. Are there existing examples, including innovative approaches and working with natural processes, which can provide good practice case studies of maintenance withdrawal or asset localisation and can be disseminated to others? What lessons do these examples provide?

Specific objectives

The **specific objectives** of work package 2 are to:

i. Develop understanding of the anticipated rate of physical deterioration of different types of linear flood and coastal erosion risk management assets, when no (or substantially reduced) maintenance is undertaken and the practical implications of this. This will draw on previous research work undertaken under the 'Assessment and Measurement of Asset Deterioration Including Lifetime Costs' project (SC060078). This provides baseline asset deterioration curves for different types of flood risk management assets.
ii. Understand the key risks associated with physical deterioration of assets where maintenance is reduced or discontinued, this will include health and safety implications (including under the CDM regulations, to ensure public safety or other appropriate requirements).
iii. Develop a risk-based framework for prioritisation of highest risk issues, providing a systematic approach to identify risks from physical deterioration and develop appropriate mitigating measures.
iv. Identify a scalable approach with outline options for successfully withdrawing maintenance or localising assets where different levels of resources are available for initial intervention (e.g. where assets can be physically decommissioned, removed or refurbished before transfer, and options in situations where resources are limited or unavailable for proactive removal or decommissioning).
v. Where possible identify case studies and examples of existing good practice in this area to be included in the guide. This will ideally include different levels of investment prior to withdrawal of maintenance (including situations where little or no intervention can be afforded), different types of flood risk management assets and appropriate examples of 'working with natural processes' to provide sustainable solutions.

Methodology / Programme of work

This element of the project should be more practically focussed than the first work package, utilising case studies and, where appropriate, workshops or interviews with practitioners to identify best practice. It will also be important to consider a broad spectrum of approaches in developing a flexible range of mitigation measures including options requiring upfront investment and lower cost alternatives. It is expected that this will primarily be a desk based exercise and that some quantitative analysis may be required to explore aspects of physical deterioration under reduced maintenance scenarios.

Stage1. Scoping for Work Package 2 –this will produce a summary of expected areas to be addressed in this work package. It is expected to draw heavily on the key factors and characteristic for success identified in Work Package 1. Outputs from this stage will require

project board review and approval before continuing with the remainder of the work package. The output from this stage will be a scoping report summarising the following:

a. Identification of current practice, including an outline list of case study examples of where withdrawal of maintenance has been successfully attempted and analysis of current Environment Agency processes described in the 'Protocol for the maintenance of flood and coastal risk management assets (England only)'.
b. Review of existing research and knowledge in asset deterioration rates under no maintenance scenarios.
c. Review of key risks to be addressed, this will be based on work completed in work package 1.
d. Review of current practice for discontinuing maintenance of other types of infrastructure amongst other providers.
e. Literature review to establish current state of published research in this field.
f. Consultation with Project Advisory Group to review scope and possible case study material.

Stage 2. Development of screening and decision support framework - Analysis of the impact of different key aspects and development of outline decision framework to identify the appropriate mitigation measures to be developed. This will identify the key impacts of different aspects and appropriate mitigation measures to help overcome potential challenges. It is expected these will be organised into a coherent risk-based framework to provide practitioners with a practical user friendly approach to support localisation or discontinuing maintenance for specific asset systems. Output from this stage will be a draft report to be amended in stage 4 following project board review.

Stage 3. Development of detailed best practice guide summarising findings from case studies – this may be incorporated in an overall guide or as a standalone product. This will be prepared based on earlier findings and will support the decision framework developed in stage 2.

Stage 4. Finalisation of project outputs- draft reports finalised for project board review, redrafting to address project board comments and ensure that outputs are of adequate quality. Review of the Provisional Work Package 1 report to see if changes are required following Work Package 2.

Finalisation of Work Package 1 report.

Stage 5. Output publication and dissemination of good practice guidance from Work Packages 1 and 2. This will include appropriate dissemination activities such as webinars and/or presentations at conferences to ensure that the outputs from the work package achieve appropriate impact with the target audience.

In addition to specialist knowledge in asset management and flood risk management it is anticipated that the successful supplier would need representatives with expertise in health and safety (including CDM regulations and public safety aspects), awareness of environmental aspects (including relevant regulatory requirements under WFD, Habitats Regulations, Eel Regulations,

etc) and ideally experience of withdrawal of maintenance in FCERM asset management projects. Relevant experience inother infrastructure management fields would also be advantageous.

Deliverables

It is expected that this work package will produce 3 main outputs for publication:

- **Good practice guide for managing the withdrawal of maintenance from FCERM assets.** This practical guide will provide detailed support for practitioners faced with the challenges of safely withdrawing maintenance from FCERM assets. This is expected to include practical examples of how to screen individual asset systems to identify key risks and provide a hierarchy of options to mitigate these. This may be achieved through process flowcharts, providing a walk through to identifying the key aspects for a specific location or another systematic approach. This should include a spectrum of options ranging from high intervention, such as full decommissioning of assets, to smaller scale interventions that may be appropriate where funding or other restrictions limit options. This guide will provide a full summary of the findings of the study with a strong practical perspective.

- **Case study examples (where possible) to demonstrate existing good practice for maintenance withdrawal.** These materials will give examples of where the process of maintenance withdrawal has been completed in practice providing examples of best practice and approaches that can be taken to mitigate risks and overcome challenges. These may be produced as standalone support materials or included in the main guidance document depending upon the scale of examples that can be identified.

- **Science Report.** This will be produced on the standard joint Defra/EA R&D programme template. It will provide a detailed breakdown of the analysis and technical development that was completed to develop the good practice user guide. This will be suitable for publication and will also provide a repository for technical detail which may support future development or any additional later projects.

- **Science summary** (max 2 pages) providing a summary of the key findings from the project to aid in dissemination and suitable for publication on the joint Defra/EA R&D programme internet portal.

Overall Project Governance

A project board will be established to oversee the overall project (work packages 1 and 2). The project board will hold meetings at key decision checkpoints and will be responsible for decision making during the project. The project board will be expected to approve key decisions at agreed milestone points and to review, comment on and approve final product outputs to ensure these are of acceptable quality.

The project board will be chaired by Defra for work package 1, and by the Environment Agency for work package 2. The Project Executive for Work Package 2 will be an Environment Agency FCERM Operations Manager, ensuring that the intended practical focus of this work package is strongly

maintained. In addition the successful bidder will be expected to provide representative(s) to perform the role of the senior supplier on the project board. Other project board members will be appointed as agreed with the Project Executive, but are likely to include representatives from other operating authorities.

The Defra Project Manager will be responsible for managing work package 1 on a day to day basis and liaising with the supplier. For work package 2, the Environment Agency Project Manager (Daniel Hine) will be responsible for these tasks.

In addition to the project board it is also expected that a Project Advisor Group will be needed for this project. This will provide a panel, to include representation from wider stakeholders to advise the project board on technical aspects of the project. They will advise on the technical content of the project scope and provide feedback to the project board on key outputs. This group will include representation from the EA, other operating authorities and possibly wider industry expertise.

Audience

The main audience for this work is Defra, local authorities, IDBs and the Environment Agency. It is also anticipated that some of the key findings will be published.

The practical guide produced in Work Package 2 will be of particular interest to practitioners within the Environment Agency, but will also be useful to Local Authorities and other Risk Management Authorities.

Outline Timescales & key milestones

The below shows our initial timing estimates which are indicative only and will need to be further confirmed following more detailed scope development.

Task	Estimated Delivery date
Work Package 1	
Work package 1 (WP 1) Stage 1- Inception meeting report	August 2014
WP 1 Stage 2 – Interim report	October 2014
WP 1 Stage 3 – Interim report	December 2014
WP 1 Stage 4 – Final report	January 2015
Work Package 2	
WP 2 Stage 1 – Scoping of work package	February 2015
WP 2 Stage 2 – Development of screening and decision support framework	June 2015
WP 2 Stage 3 – development of good practice examples	September 2015
WP 2 Stage 4 – Finalise project outputs	November 2015
Output publication	-
WP2 Stage5 – Project Dissemination of good practice guide	March 2016
Project Closure	-