

## Flood and Coastal Erosion Risk Management Research Programme

### Asset Performance Tools

#### Project Summary SC140005/S

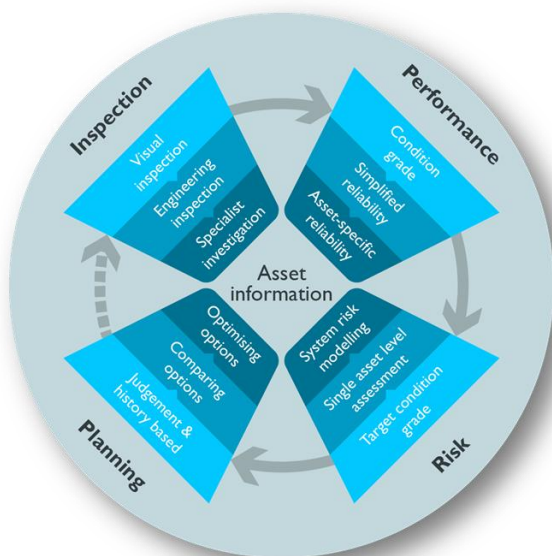
This research project has developed methods, tools and guidance to improve asset management decision-making by identifying where, when and how to intervene to reduce flood risk for least cost and greatest benefit.

Asset managers and their teams are the target users for many of the tools and guidance documents. The products will also inform future research and address aspects of the Environment Agency's Asset Management Strategy 2017 to 2022, including supporting accreditation to ISO 55000, the international standard for asset management.

The focus has been on developing products that are practical and useable by those who manage assets.

#### Framework

The project developed an overarching framework which groups 4 component activities: inspection, performance, risk and planning.



This framework facilitates appropriate asset condition and performance assessment, risk analysis and optimisation, supporting the move from reactive to proactive asset management. It promotes whole life analysis and a risk-based approach, applicable for both fluvial and coastal environments. The framework has 3

levels of complexity, from simple and quick approaches through to detailed analysis. Methods can thus be selected that are proportionate to the scale of risk and decision complexity.

#### Tools and guidance

The framework is supported by the tools and guidance documents to improve asset management decision-making. These products are:

##### Inspection

- Asset inspection guidance (developed previously)

##### Performance

- Channel conveyance assessment guidance
- Vegetation and roughness tool
- Custom fragility curve adjustment tool

##### Risk

- Pre-calculated risk dataset guidance

##### Planning

- Raised defence target condition whole life cost appraisal tool
- Beach performance assessment guidance
- Risk-based appraisal tool prototype

#### Benefits

Benefits of the tools and guidance products include:

- evidence supporting the undertaking or withdrawal of channel and flood defence maintenance
- help in identifying the best asset maintenance regime
- improving mobile working for asset inspectors, providing greater consistency and efficiency
- help to specify appropriate levels of inspection, investigation or analysis
- easy to use tools requiring minimal data
- enabling structured use of local asset-specific knowledge and quantified evidence for improved decision making and to support stakeholder discussions
- a better description of the relationship between investment and performance and risk.
- evidence for ISO 55000 compliance
- dissemination of best practice

This summary relates to information from project SC140005, reported in detail in the following output(s):

**Report:** SC140005/R1

**Title:** Asset Performance Tools: Phase 3 final report

**Report:** SC140005/R2

**Title:** Asset Performance Tools: Channel conveyance assessment guidance

**Report:** SC140005/R3

**Title:** Asset Performance Tools: Improving defence performance curves using local knowledge – methodology

**Report:** SC140005/R4

**Title:** Asset Performance Tools: Pre-calculated risk datasets guidance

**Report:** SC140005/R5

**Title:** Asset Performance Tools: Guidance for beach triggers

### **October 2018**

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**Theme manager:** Owen Tarrant, Sustainable Asset Management

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This project was commissioned by the Environment Agency's FCRM Directorate, as part of the joint Flood and Coastal Erosion Risk Management Research and Development Programme.

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