



SID 5 Research Project Final Report

● **Note**

In line with the Freedom of Information Act 2000, Defra aims to place the results of its completed research projects in the public domain wherever possible. The SID 5 (Research Project Final Report) is designed to capture the information on the results and outputs of Defra-funded research in a format that is easily publishable through the Defra website. A SID 5 must be completed for all projects.

● This form is in Word format and the boxes may be expanded or reduced, as appropriate.

● **ACCESS TO INFORMATION**

The information collected on this form will be stored electronically and may be sent to any part of Defra, or to individual researchers or organisations outside Defra for the purposes of reviewing the project. Defra may also disclose the information to any outside organisation acting as an agent authorised by Defra to process final research reports on its behalf. Defra intends to publish this form on its website, unless there are strong reasons not to, which fully comply with exemptions under the Environmental Information Regulations or the Freedom of Information Act 2000.

Defra may be required to release information, including personal data and commercial information, on request under the Environmental Information Regulations or the Freedom of Information Act 2000. However, Defra will not permit any unwarranted breach of confidentiality or act in contravention of its obligations under the Data Protection Act 1998. Defra or its appointed agents may use the name, address or other details on your form to contact you in connection with occasional customer research aimed at improving the processes through which Defra works with its contractors.

Project identification

1. Defra Project code	<input type="text" value="FD2320"/>
2. Project title	<input type="text" value="Flood Risk Assessment Guidance for New Development"/>
3. Contractor organisation(s)	<input type="text" value="HR Wallingford (lead contractor)"/> <input type="text" value="CEH Wallingford (subcontractor)"/> <input type="text" value="CIRIA (subcontractor)"/>
4. Total Defra project costs (agreed fixed price)	<input type="text" value="£ 193271"/>
5. Project: start date	<input type="text" value="1 December 2003"/>
end date	<input type="text" value="31 October 2005"/>

6. It is Defra's intention to publish this form.
Please confirm your agreement to do so..... YES NO

(a) When preparing SID 5s contractors should bear in mind that Defra intends that they be made public. They should be written in a clear and concise manner and represent a full account of the research project which someone not closely associated with the project can follow.

Defra recognises that in a small minority of cases there may be information, such as intellectual property or commercially confidential data, used in or generated by the research project, which should not be disclosed. In these cases, such information should be detailed in a separate annex (not to be published) so that the SID 5 can be placed in the public domain. Where it is impossible to complete the Final Report without including references to any sensitive or confidential data, the information should be included and section (b) completed. NB: only in exceptional circumstances will Defra expect contractors to give a "No" answer.

In all cases, reasons for withholding information must be fully in line with exemptions under the Environmental Information Regulations or the Freedom of Information Act 2000.

(b) If you have answered NO, please explain why the Final report should not be released into public domain

Executive Summary

7. The executive summary must not exceed 2 sides in total of A4 and should be understandable to the intelligent non-scientist. It should cover the main objectives, methods and findings of the research, together with any other significant events and options for new work.

Background to R&D project

Approximately 7 million houses were constructed between 1971 and 2001 in the UK. The Office of the Deputy Prime Minister (ODPM) has forecasted continued property development, but unwise planning or regulation can increase flood risks, resulting in developments falling short of the Government's objectives for sustainability. Therefore, understanding and reducing flood risks associated with new developments is a high priority for Government and the Environment Agency (EA).

In order to achieve this, Planning Policy Guidance 25 (PPG25) for England recognises the need for flood risk to be considered at all stages of the planning and development process. It provides guidelines for using a Sequential Test to assist local planning authorities (LPAs) to take account of flood risk in the spatial planning process. It also gives guidance on requirements for undertaking assessments of flood risk at specific sites to accompany planning applications or over development areas to assist with spatial planning and development control. The aim of Technical Advice Note 15 (TAN15), which was published in 2004 for application in Wales, is the same as PPG25. It is slightly different in its approach and sometimes uses different terminology. However, the requirement to undertake appropriate assessments of flood risk for new developments is the same.

PPG25 is now under review and a lot of experience has been gained over the last 4 years. However, at the start of this project some significant questions remained, including the following:

- How can the Government, the EA and LPAs interpret and effectively apply these guidelines (both at the local and site-specific scales) with proportionate effort in relation to the scale of the development and the scale of the flood risk?
- How can the Government, EA and LPAs consider on a wider spatial planning scale (i.e. at national, regional or sub-regional scales) the flood risk issues raised by proposed development?
- How can studies carried out by the Government, the EA and LPAs usefully influence and contribute to the flood risk assessments (FRAs) and flood risk management that developers carry out for individual development sites?

Substantial R&D has been commissioned since 2001 (some of which has been completed and some of which is ongoing) looking at different scales and aspects of assessing and managing flood risk. However, there is a risk that soon there will be too many sources of information and guidance available for practitioners to navigate and use effectively.

Results of R&D project

The project has developed a science and risk-based framework for a nationally consistent approach to assessing and managing flood risk for new development across England and Wales. This has been achieved by integrating and simplifying existing guidance documents and the latest findings from an extensive range of research projects.

The framework is the means by which the links between aspects of assessing and managing flood risk for new developments are identified and explained. These aspects include:

- Different decision scales (i.e. national, regional, sub-regional, local or site-specific),
- Different assessment types (such as Catchment Flood Management Plans, Shoreline Management Plans and strategic or site-specific Flood Risk Assessments),
- Ongoing or recently completed research and development,
- Guidance (including links to existing guidance as well as provided by this project), and
- Tools (with references to existing tools as well as those provided by this project).

The framework also identifies the gaps in the guidance and tools, which will be filled, where possible, by ongoing R&D projects. In many cases, the guidance produced by this project should be considered as interim, based on the best available science at this time, but by applying the precautionary principle effective decision-making can still be undertaken.

At the core of the framework is a generic approach that can be applied in all contexts (not only in undertaking assessments, but also for reviewing assessments). This has been based on the DETR report *Guidelines for Environmental Risk Assessment and Management* (also known as Green Leaves 2), which is generally recognised within the UK as the best practice approach to assessing and managing environmental risk.

R&D Outputs and their Use

The project has produced a number of different outputs that are designed to be used together to form an overall framework, as described above. Although the project outputs have been designed with end users in mind (including the EA, LPAs, Regional Assemblies and Developers), these should only be considered as R&D outputs; they do not represent the policies of Defra, the ODPM or the EA. Some of the guidance and tools will be useful to support practitioners in the short-term and this is being encouraged, but application of these will not prevent assessments from being challenged by regulators and their advisors.

The project outputs need to be tested and developed into appropriate policies and practices by the stakeholder groups, in particular the Environment Agency. This is outside of the scope of the project. However, the Project Record includes a communication and implementation plan and a monitoring and review plan, which provide recommendations regarding how the project outputs should be taken forward and how the EA might choose to supervise this over the short and medium to long terms.

Project Report to Defra

8. As a guide this report should be no longer than 20 sides of A4. This report is to provide Defra with details of the outputs of the research project for internal purposes; to meet the terms of the contract; and to allow Defra to publish details of the outputs to meet Environmental Information Regulation or Freedom of Information obligations. This short report to Defra does not preclude contractors from also seeking to publish a full, formal scientific report/paper in an appropriate scientific or other journal/publication. Indeed, Defra actively encourages such publications as part of the contract terms. The report to Defra should include:
- the scientific objectives as set out in the contract;
 - the extent to which the objectives set out in the contract have been met;
 - details of methods used and the results obtained, including statistical analysis (if appropriate);
 - a discussion of the results and their reliability;
 - the main implications of the findings;
 - possible future work; and
 - any action resulting from the research (e.g. IP, Knowledge Transfer).

The aim of this project was to provide guidance on the assessment of flood risk (and the mitigation of that risk) to assist with the regulation and planning of new developments in England and Wales.

The immediate objectives of this project were the following:

1. To define what is an appropriate assessment of flood risk for use at all scales of development planning (from national scale planning down to individual planning applications for development sites) and all types of development;
2. To provide guidance on how to carry out 'strategic' flood risk assessments (SFRAs) and site-specific flood risk assessments (FRAs), including selection and use of data and tools;
3. To provide guidance on how to audit FRAs and how to interpret the results from a FRA to assist with planning decisions;
4. To provide simple tools (if required) based on robust science to support the development of SFRAs and FRAs;
5. To provide guidance regarding analysis of flood risk management methods within SFRAs and FRAs;
6. To provide a plan for communicating guidance and tools effectively to users; and
7. To provide a plan for monitoring and reviewing the successful uptake of the guidance and the impact that it has on reducing inappropriate development.

The longer-term objectives and intended benefits of this work are:

- A contribution to the Government's policy of flood risk reduction
- A consistent risk assessment approach used by the Environment Agency (EA) and planning authorities for setting planning policies and development control;
- An ability to quantify the change in risk due to new development, including climate change, and to quantify risk of both existing and proposed development (people and properties);
- A clear risk based understanding for Defra and the EA regarding what is considered to be "appropriate and inappropriate" development in flood risk areas;
- An appreciation of the tiered approach to the assessment of flood risk and implications of development plans at various scales (although to a certain extent this can only be considered as general guidance due to individual circumstances);
- An understanding of integrated flood risk management requirements such as drainage planning by the development industry and regulators;
- The development of appropriate integrated approaches for flood risk limitation; and
- Input into ongoing R&D initiatives, such as Risk Assessment for flood and coastal defence for Strategic Planning (RASP), Performance based Asset Management System (PAMS), Catchment Flood Management Plans (CFMPs) and Shoreline Management Plans (SMPs).

The project was split into two Phases:

- Phase 1 was a scoping study and consisted of a review of current policies, processes and science; consultation with practitioners and other stakeholders (via two workshops held in March 2004); and production of a detailed scope for Phase 2. The first phase was completed in July 2004.
- Phase 2 consisted of providing the framework, guidance and tools, based on the assessed needs in Phase 1. This was completed by the end of March 2005.

Following on from this, there was a project extension to undertake dissemination activities within the Environment Agency. This was completed by the end of December 2005.

The final deliverables for Phase 2 were the following:

- Technical Report 1 (TR1) – Framework and guidance for assessing and managing flood risk for new development – An overview
- Technical Report 2 (TR2) – Framework and guidance for assessing and managing flood risk for new development – Full documentation and tools
- Project Record 1 (PR1)

As part of the project extension the following additional deliverables were also provided:

- A trial dissemination workshop, which was held at the Environment Agency offices in Exeter on 18 May 2005.
- A training presentation for Environment Agency Regional and Area staff involved in Development Control and Planning Liaison, based on feedback from the trial dissemination workshop.
- A website version of the framework, guidance and tools.

Further information regarding the project delivery can be found in the Project Record, including the following:

- An overview of related R&D projects and initiatives, which have either contributed to the project or might benefit from the project;
- Details of stakeholder consultation undertaken in both Phases 1 and 2 of this project;
- A summary of the approach adopted to carry out the project;
- A summary of the project deliverables;
- A communication and implementation plan, which provides recommendations regarding the future actions required to enable adoption of the project outputs;
- A monitoring and review plan, which provides recommendations regarding future actions required to determine how successfully the framework and guidance have improved practices both within the EA and beyond;
- Conclusions from Phase 2 of the project, including future R&D requirements;
- Details of the feedback received at the trial dissemination workshop.

The project has produced a number of different outputs that are designed to be used together to form an overall framework, as described above. Although the project outputs have been designed with end users in mind (including the EA, LPAs, Regional Assemblies and Developers), these should only be considered as R&D outputs; they do not represent the policies of Defra, the ODPM or the EA. Some of the guidance and tools will be useful to support practitioners in the short-term and this is being encouraged, but application of these will not prevent assessments from being challenged by regulators and their advisors.

The project outputs need to be tested and developed into appropriate policies and practices by the stakeholder groups, in particular the Environment Agency. This is outside of the scope of the project. However, the Project Record includes a communication and implementation plan and a monitoring and review plan, which provide recommendations regarding how the project outputs should be taken forward and how the EA might choose to supervise this over the short and medium to long terms.

Deliverables from this research are available [here](#) or via the [Defra/EA Science search tool](#). Further information about the joint Defra/EA research programme is available at

<http://www.defra.gov.uk/envirom/fcd/research/RandAboutProg.htm>

References to published material

9. This section should be used to record links (hypertext links where possible) or references to other published material generated by, or relating to this project.

This project produced the following R&D outputs:

- **R&D Interim Report FD2320/IR *Flood Risk Assessment Guidance for New Development - Phase 1 Interim Report***. July 2004.
- **R&D Technical Report 1 FD2320/TR1 *Flood Risk Assessment Guidance for New Development - Overview***. October 2005.
- **R&D Technical Report 2 FD2320/TR2 *Flood Risk Assessment Guidance for New Development - Framework, Guidance and Tools***. October 2005.
- **R&D Project Record FD2320/PR1 *Flood Risk Assessment Guidance for New Development – Project Record***. October 2005.
- **Project website** <http://www.hydres.co.uk/>

A short paper was also presented at the 40th Defra Flood and Coastal Management Conference, York 5-7 July 2005, entitled "Guidance on Assessing and Managing Flood Risk within the Development Planning Process".

