

CONSULTANTS BRIEF

STRATEGIC FLOOD RISK ASSESSMENTS (SFRA)

What may flood, how, where, when and how often and to what extent?

1. Invitation to Tender

Bournemouth Borough Council, Christchurch Borough Council, East Dorset District Council, North Dorset District Council and Salisbury District Council invite submissions from suitably qualified Consultants with relevant experience, to undertake a Strategic Flood Risk Assessment (SFRA) for their Districts. Consultants are invited to tender for this work and are asked to provide a submission indicating how, if selected, they would fulfil the brief and at what cost.

2. Steering Group

2.1 The Consultants will report to a steering group comprising officers from the five Local Planning Authorities and Environment Agency.

3. What is an SFRA?

3.1 An SFRA looks at flood risk at a strategic level on a local planning authority scale.

It is the responsibility of those allocating land for development to demonstrate that the flood risk to and from development will be acceptably safe throughout the lifetime of the proposed development, taking account of climate change.

3.2 The Local Planning Authorities (LPAs) wish to prepare an SFRA in consultation with the Environment Agency and other stakeholders to determine flood risk across the area. This will allow the LPAs to:

- Undertake the sequential test (as set out in existing on Development and Flood Risk)
- Prepare policies for the management of flood risk within the Local Development Documents (LDD)
- Identify the level of detail required for individual Flood Risk Assessments (FRA)
- Assess the response required for emergency planning purposes

3.3 SFRAs do not look at individual sites.

3.4 The SFRA will either form part of the Sustainability Appraisal of the LDD, or be used to inform it. It will also be used to inform the sequential approach to flood risk in the development allocation and development control process.

3.5 The SFRA will provide information on

- (a) Whether flood risk is a significant issue in the area
- (b) The extent of areas at risk of flooding
- (c) How much of the area is defended
- (d) Where new development is likely to add risk
- (e) Where flood risk needs to be considered in more detail

4. Background and Policy

4.1 PPS25 recommends that LPAs adopt a strategic approach to flood risk and apply the principles of the sequential test as outlined within paragraphs 14 to 17 and Table D1. It provides general advice upon the use of flood risk assessments (Appendix E) and suggests that authorities consider available data on the nature of flood risk in the local area and its possible consequences for new site allocations. Although PPS25 does not require LPAs to undertake an

SFRA, nor gives any specific guidance on their preparation, in practice it is difficult for a LPA to take a risk-based sequential approach to development and flood risk unless it has undertaken an SFRA first (and thereby knows the relative degrees of risk associated with different areas).

- 4.2 The Regional Spatial Strategy (RSS) for the South West will form part of the statutory development plan and will include policy for Development and Flood Risk.
- 4.3 The SFRA will list the Local Plans and their adoption dates and will state which policy outlines the Council's policy in relation to Flood Risk Areas and/or guidance on flood protection. This information is provided in Appendix 1.

5. Study Area Information

- 5.1 The study area comprises a number of catchment areas, of which the main ones are the River Stour and the River Avon.

River Stour

Description of physical characteristics

- 5.2 The Stour catchment covers a total area of about 1,300 square kilometres rising from springs in the Upper Greensand at Stourton flowing 100 kilometres south east through North and East Dorset Districts before passing in to Christchurch Harbour. The majority of the catchment is within the study area.
- 5.3 The river is fed by many tributaries, including the rivers Crane, Allen, Tarrant, Winterbourne, Lydden, Cale, Shreen and Lodden, Caundle Brook and Moors River.
- 5.4 The topography and geology vary significantly throughout the catchment, influencing the causes of flood risk. To the north east the river crosses the impermeable clays of the Blackmore Vale, characterised by shallow floodplains, before crossing over the permeable chinks of Cranborne Chase where there are steeper valleys and narrow floodplains. The river then passes over the semi-permeable sands, clays and gravels of the Dorset Heaths where there is once more a wide floodplain and shallow valley.
- 5.5 The river passes through a number of towns, including Gillingham, Blandford Forum, Wimborne Minster, Ferndown, Bournemouth and Christchurch, each of which has been affected by flooding. Additionally, there are a series of villages throughout the catchment that have also suffered varying degrees of flooding.
- 5.6 Within Christchurch there are significant flooding issues relating to coastal inundation. As a natural barrier to water movement, the tidal sandspit at Mudeford plays a significant role in reducing the effect of wave action in Christchurch Harbour and in preventing tidal upsurge along the rivers which empty into it. The tidal influence of the Stour reaches to Iford.

Demographics and land use

- 5.7 There are about 400,000 people living in the total catchment area, of which the majority are within the Bournemouth and Christchurch conurbation.
- 5.8 The total catchment has the following land uses:
- 8% urban
 - 52% arable
 - 34% managed grassland
 - 6% other
- 5.9 A significant part of the 'other' land use comprises areas with high environmental designations. These include one Special Protection Area, three Special Areas of Conservation, two National Nature Reserves, one Ramsar and thirteen Sites of Special Scientific Interest.

Response to rainfall

- 5.10 Response to rainfall is generally rapid from the upper clay catchments of the Shreenwater and Lodden. The Lydden and Cale can also have significant effects on the hydrograph shape at Hammoon, sometimes resulting in a secondary peak.

- 5.11 The River Allen at Wimborne can be significant after prolonged periods of rain due to its predominantly chalk catchment.

River Avon

Description of physical characteristics

- 5.12 The total Avon catchment covers an area of about 1,750 square kilometres, of which a large proportion is within the study area, the remainder being within Kennet, Test Valley and the New Forest. The river rises in the Vale of Pewsey, to the north of Salisbury, fed by chalk aquifers and runs 77 kilometres south to the coast at Christchurch. At Salisbury the Avon is joined by its main tributaries the rivers Bourne, Nadder and Wylde. To the south of Salisbury the Avon is joined by the River Ebble. The lower Avon, south of Salisbury, is characterised by a complex network of artificially controlled channels, and is fed by a number of small tributaries. At Christchurch the Avon joins the Stour before flowing into Christchurch Harbour.
- 5.13 The upper Avon catchment is typified by the undulating, chalk downlands of Salisbury Plain, which is cut by steep combs and river valleys. The lower catchment is characterised by rolling farmland, woodland, scrub and open heathland. North of Fordingbridge the Avon flows over narrow outcrops of semi-permeable sands, gravels and clays. To the south the underlying geology is formed by the semi-permeable Barton, Bracklesham and Bagshot Beds, which are acidic clays, sands, silts and gravels.
- 5.14 The river passes through a number of towns, most significantly of which are Salisbury, Downton, Fordingbridge, Ringwood and Christchurch. A number of villages also lie within the floodplain.
- 5.15 Within Christchurch the tidal influence of the Avon reaches to just north of the A35 road bridge.
- 5.16 The River is significantly affected by groundwater conditions within chalk aquifers. When groundwater is high it can cause prolonged periods of flooding.

Demographics and land use

- 5.17 There are about 230,000 people living in the total catchment area, of which 18% live within Salisbury. The large majority of the catchment is rural.
- 5.18 The total catchment has the following land uses:
- 3% urban
 - 47% arable
 - 46% managed grassland
 - 3% woodland
 - 1% other
- 5.19 A significant part of the catchment area is protected by high environmental designations. Within the total catchment area, including parts of New Forest and West Wiltshire, there are five Special Protection Areas, nine Special Areas of Conservation, six National Nature Reserves, three Ramsars and seventy one Sites of Special Scientific Interest.

Response to rainfall

- 5.20 In the upper catchment the response of the river is typical of chalk catchments with relatively slow response time and flat hydrograph shape. Short isolated storms generally have little impact on river levels. Prolonged periods of rain or series of rainfall events over week or more will result in gradually increasing base flow from chalk with river levels remaining high for a considerable period of time after event.
- 5.21 In the coastal area the river has the following characteristics:
1. Rapid Response to heavy rain.
 2. The River Avon also influences Bypass Stream & Barlins Ditch as well as the Lower Subreaches of the Barton Brook.
 3. There may also be tidal impacts during extreme events.

River Mude

Description of physical characteristics

- 5.22 The Mude arises in Bransgore in Hampshire, flows south through Somerford and Mudeford and drains directly into Christchurch Harbour at the base of the catchment. It is a small scale water course that drains the eastern side of the Borough along with the Walkford Brook. It has a relatively limited local catchment area and much of the main river flood plain area lies below 5m AOD. Flooding in these areas can be exacerbated by tidal conditions within Christchurch Harbour. Low-lying parts of the town are therefore protected by flood defences.
- 5.23 The River Mude and directly adjacent land has a geology typical of lowland river valleys and mainly comprises alluvial deposits forming soil of a loam or clayey loam nature. The remainder of the catchment has a surface geology of river terrace deposits (mainly gravels) and this is typical of the area and results in the well-drained coarse loamy and sandy soils favoured by agriculture. As the Mude arises in Bransgore, inputs of chalk from the north as seen in the Avon and Moors River are thus absent. Deep peaty soil is in evidence at the south end of the catchment.
- 5.24 A number of ponds have been created in recent years. One is seasonal in nature and remains dry from mid-June until late autumn. The fishing pond was dredged in late 1997 to increase depth and improve conditions for the fish. The site is designated a Site of Nature Conservation Interest (SNCI).

Land use

- 5.25 The land use of the catchment area is urban, being primarily residential.

Bure Brook

Physical Characteristics

- 5.26 The Bure Brook rises in the north east of Christchurch and drains into Christchurch Harbour to the south. Along its 3.5km the Brook flows under and through the urban residential areas of Walkford and Highcliffe, feeding the lake at Nea Meadows and a pond at Cornford Way. It rarely reaches a width of greater than 4m and flows at between 1 to 5m below street level.

Land Use

- 5.27 The land use of the catchment is urban residential.

Walkford Brook

Physical Characteristics

- 5.28 The Walkford Brook forms the easternmost boundary of Christchurch Borough, entering under the railway line at Walkford and flowing south along the edge of the urban area before draining into the sea at Chewton Bunny.

Land Use

- 5.29 Until it meets the top of east Highcliffe the brook flows through open fields approximately 200m from the urban area. It then flows past low density residential areas at a distance of about 30m.

Clockhouse Stream

Physical Characteristics

- 5.30 The stream enters Christchurch Borough to the north of the village of Burton, flowing south east through the heart of the village and out into the Avon Valley to the west. It then flows south to meet the Avon just north of Christchurch town centre.

Land Use

- 5.31 For 1km the stream passes through Burton, it lies close to densely populated urban residential areas. The remainder of its length passes through open pasture land and into the Avon.

Bypass Stream / Mill Stream

Physical Characteristics

- 5.32 North of Christchurch town centre the River Avon divides in two, forming the main river and the Mill Stream. The stream flows south along the eastern edge of the town centre, forking south east through the Priory and Christchurch Quay area. Through the town it flows at a width of about 3m, just below street level.

Land Use

- 5.33 The stream flows along the urban edge alongside open wetland and the open Priory churchyard, bowling green gardens and Christchurch Quay. For 100m or so it flows directly alongside the main River Avon.

Chewton Common Stream

Physical Characteristics

- 5.34 A very narrow stream flows through Chewton Common and Highcliffe residential area from the east of Christchurch Borough, westwards for 1.5km where it drains into Nea Meadows lake. Flowing very close to houses in Highcliffe, it runs underground for much of its length.

Land Use

- 5.35 The catchment of the stream is primarily urban residential, with sections passing through the woodland of Chewton Common.

River Test

Description of physical characteristics

- 5.36 There is a small section of the River Test catchment in Salisbury District. This river rises from chalk aquifers and flows south into Southampton Water. Under normal conditions, flows emerge from the ground at the river source between about 70m and 100m above Ordnance Datum (AOD). The initial stretches of the River and its small stream tributaries are ephemeral, becoming dry through the summer season.

Demographics and land use

- 5.37 The River runs through a rural part of the District, with a small population. The land use is primarily agricultural.

Bere Stream/ Milborne and Devils Brook

Description of physical characteristics

- 5.38 These two streams rise in the south west of the project area in the District of North Dorset. They discharge into the Fome, Piddle and Purbeck catchment management area.

- 5.39 The Bere/Milborne feeds the artificial lake at Milton Abbey within the historic park and then flows in a southerly direction through the village of Milborne St Andrew and joins the R. Piddle at a point just south east of Bere Regis. Devils Brook forms part of the project area boundary and discharges to the R. Piddle at Athelhampton - both outside of the project area.

- 5.40 This part of the Frome, Piddle, Purbeck catchment area covers approximately 40 square kilometres of chalkland.

- 5.41 Milborne St Andrew has been affected by flooding.

Demographics and land use

- 5.42 There are approximately 2,400 people living in the area. Apart from the village settlements of Milton Abbas and Milborne St Andrew the land use is predominantly grassland. There are a number of local wildlife designations and sites of archaeological interest and Milton Abbey is on the national register of gardens of historic interest.

Bourne Stream

Physical Characteristics

- 5.43 The Bourne Stream rises via two main tributaries in the Borough of Poole. However the lower reaches of the Stream flows through the Upper, Central, and Lower Gardens in the south western part of Bournemouth Borough passing through the town centre, before meeting the sea at Bournemouth Pier. The Stream has an overall catchment of approximately 14 square kilometres.
- 5.44 The lower reaches of the stream are subject to flash flooding even after short periods of heavy rain. This causes disruption to the use of the gardens and can result in pollutants being washed downstream into the public bathing areas on the beach.

Land Use

- 5.45 Within Bournemouth Borough the Stream runs through areas of great amenity value with public access to the listed gardens (Grade II*) and the beach.

6. Requirements and Outputs of an SFRA

- 6.1 The requirements include
- An assessment of all potential causes of flooding (Annexe C of PPS 25)
 - An assessment of existing flood risk management infrastructure
 - An assessment of the potential use of Sustainable Drainage Systems (SuDS)
 - An assessment of the extreme flood event (0.1% probability)
 - An indication of the location and extent of the functional floodplain
- 6.2 Outputs of an SFRA
- Maps showing (Annexe C of PPS 25)
 - The extent of areas at risk from all sources of flooding
 - Existing defences (natural and manmade)
 - Land use
 - Historic records of flooding
 - Factors affecting the likelihood of flooding
 - The extent of areas at risk in the event of failure of natural and manmade flood defences
 - Existing flood warning and emergency planning procedures
 - An assessment of the ongoing effectiveness of existing flooding policies within current Local Plan policies of the commissioning local authorities
 - Guidance and advice on policy stances to flooding and flood risk based on the most up to date guidance and best practice to inform new policy making within the LDFs of the commissioning local authorities.
- 6.3 The SFRA report will provide the following study area information:
- Description of the main rivers
 - Recent significant flooding events, if relevant, and locally significant flooding issues
 - Description of flood defences and other flood risk management infrastructure

7. Detailed Contents of the SFRA

- 7.1 The SFRA will provide an assessment of:
- All potential and historic causes of flooding (inc. an assessment of features that would convey flood flows to other areas not considered to be directly at risk from the source – e.g. canals).
 - Existing flood risk management infrastructure
 - Standard of existing flood defences, including information on the likely return period

- Areas within the SFRA area that are at risk of flooding for all flood zones identified in PPS25, including the sub-divisions within flood zone 3 (high probability). This should consider the boundaries between the flood zones and be based on: river catchment characteristics, flooding history, local topography and climate change
- Variations in the actual flood risk in a given area, including the effect of defences or topography.
- (c) The potential use of Sustainable Drainage Systems (SuDS) taking into account ground conditions and other matters.
- (d) The spatial extent and characteristics of extreme flood events (0.1% probability).
- (e) An indication of the location and extent of the functional floodplain.
- (f) Potential increases in flood risk having regard to climate change, assuming flood defences are maintained to current standard.
 - Potential increase in flood risk to existing development due to increased run-off from any future developments. This should consider the effect of future development in all flood zones and include the use of SuDS.
 - Potential effect of flood defence failure.
 - Extent and cost of works required to raise the flood defence standard to 1% and 0.5%, if development pressures dictate.
 - Sustainability of land uses in medium and high probability flood zones.

7.2 And provide:

- (a) A mapping of flood risk within each District to be used for consistent decision-making through the District's development control function. This should outline the appropriate planning response for land in high, medium and low risk areas.
- (b) Details of the measures that could be used to make development within higher flood probability zones permissible.
- (c) Recommendations on future land management practices within the SFRA area. This should outline the potential to influence and alleviate flooding elsewhere within the river catchment. CFMP's should be the primary tool.
- (d) Advice on the use of SuDS and the potential increase to flood risk resulting from new development.

7.3 The Consultant will liaise closely with the South West Regional Assembly, the Environment Agency, water companies, highways authorities and appropriate staff within the local authorities (e.g. land use planners, emergency planners, drainage engineers). A significant amount of data is held by the Environment Agency and will be made available to the successful Consultant. This data is listed in Appendix 2.

7.4 The assessment will also need to take account of the extent of emerging Catchment Flood Management Plans (CFMP) and Regional Flood Risk Assessment. It is important that the SFRA complements but does not repeat the work that has already been undertaken for emerging CFMPs.

7.5 Given the complex nature of flood risk, it is possible that previously unforeseen issues, which have not been detailed in this brief, will arise through the study. It is important that the SFRA will cover these other matters as appropriate.

8. Deliverables

8.1 The content of a SFRA is presented in a series of A1 maps, the report and a group of GIS data files.

Maps showing:

- (a) Flood risk areas from all sources of flooding
- (b) Existing defences
- (c) Land use
- (d) Historic records of flooding

- (e) The effect of failure of flood defences
- (f) Existing flood warnings
- (g) Areas where SUDs would be appropriate in general

Text explaining:

- (a) Emergency planning procedures
- (b) Factors affecting the likelihood of flooding

- 8.2 The maps highlight areas where flooding is an issue, or could be an issue in the future, and therefore where development should be avoided.
- 8.3 The report provides background information on the details shown in the maps and highlights areas particularly at risk from flooding. It also provides technical information regarding the production of the SFRA and recommendations and guidance for managing future flood risk.
- 8.4 The GIS datafiles of the maps can be updated when new information becomes available.

9 Report and Final Presentation

- 9.1 The Consultant shall attend meetings to provide progress reports to the partner organisations on an agreed frequency. Between times it will be the responsibility of the Consultants to keep the client group informed about progress and any issues arising.
- 9.2 Before the final report is produced, 12 copies of the draft report shall be submitted to the steering group for approval, including an electronic copy. The Consultant will provide quotes of the cost per unit of printed copies of the final report in addition to providing an electronic and internet-ready copy. 12 printed non-technical executive summaries of the final report will also be required. The Local Planning Authorities will retain ownership of the final report and any data collection and analysis that is undertaken as part of this study.
- 9.3 The appointed Consultant may be required to attend future Planning Inquiries in order to defend and substantiate the findings and recommendations of the report, in particular at the examination of LDDs. Costs of any such representation shall be subject to separate negotiations as and when the need arises over the next five years following the completion of the contract, however the Consultant should provide an indication of typical daily rates.

10 Timetable

- 10.1 It is anticipated that a contract for this study will be let to the successful Consultant during the week beginning **11th June 2007**, with work to commence immediately.
- 10.2 The first project meeting, involving the successful Consultant, will take place in the week commencing the **18th June 2007**. It is anticipated that a monthly project progress meeting will need to take place, which will need to include a briefing on the results of work to date. All meetings will be held at East Dorset District Council, subject to room availability.
- 10.3 All data collection and analysis will be the responsibility of the successful Consultant, an electronic copy of which will need to be submitted with the final report. Consultants are required to deliver the final report by no later than the **1st November 2007**. A timetable will be agreed for key milestones, such as the delivery and approval of the draft report (which we anticipate should be available by **3rd October 2007**).

11. Tender Submissions

- 11.1 Consultants are invited to tender for this work and are asked to provide a submission providing the following information:
 - (a) details of the methodology to carry out the brief, taking into consideration the relevant aspects of the project;
 - (b) a detailed timetable for the work;
 - (c) details of the consultant project team to be involved, including relevant experience in producing similar studies and the proportion of time that they will spend on the study;

- (d) two contacts for references relevant to the study;
 - (e) confirmation that the carrying out of this work would not give rise to conflicts with other clients' interests.
- 11.2 The tender should not exceed 3,000 words in length. No tender will be considered unless it covers all of the points listed in paragraph 11.1.
- 11.3 Six copies of the Tender submission must be returned to:
Procurement, Salisbury District Council, 47 Endless St, Salisbury SP1 3UH
- 11.4 Tenders must be submitted in the envelope marked "Tender". The envelope should be returned by 12 o'clock midday on **6th June 2007**. No tender that is received after this time and date shall be considered, unless there is clear evidence that it was posted by first class post at least the day before tenders were due to be received. **The envelope, including the franking mark and courier labels, should not identify the name of the tendering company. No tender will be considered unless it is submitted in accordance with these instructions.**
- 11.5 Short-listed Consultants will be invited to attend an interview in the week commencing the **11th June 2007**. At the interview, the Consultants will be required to give a presentation lasting approximately 25 minutes, with a further 20 minutes for questions. The presentation should include:
- The proposed methodology and components of the study.
 - An outline of the experience in this type of work of those within the Consultants who would be involved and their proposed input into the study.
 - Proposals for the presentation of the final report.
- 11.6 The successful Consultant will be notified during the week beginning **11th June 2007** and work is expected to start immediately.

12. Project Budget

- 12.1 Prices and details should be provided for the carrying out of the tasks specified in this Brief. Consultants should provide a fixed price quotation for the study, including all expenses, and exclusive of VAT. An invoicing schedule will be subject to approval, with a final payment made following the submission of the final report.
- 12.2 Tender submissions should provide a detailed break down of costs under the following headings:
- Consultants' fees (no. of work days and day rates) broken down on the basis of the project outline, split on a per District basis
 - Cost per unit of the final product
 - Travel and subsistence
 - Overheads and any other costs
- 12.3 Details and costs of any sub-contractual arrangements should also be included within the tender.
- 12.4 The partner authorities will choose the bid that is most economically advantageous to the organisation. **We are not duty bound to accept the lowest or any bid.**

Appendix 1

Bournemouth Borough Council

Bournemouth Local Plan Adopted 2002

Para. 3.28

Development will not be permitted in, or in the vicinity of, areas liable to flood, watercourses or flood defence works where it would impede floodwater flows, reduce the capacity of washlands or increase flooding risks elsewhere, lead to danger to life, damage to property or where it could interfere with drainage authorities ability to carry out maintenance work, and neither should development lead to wasteful expenditure on remedial works.

Christchurch Borough Council Plans

Christchurch Borough Local Plan Adopted March 2001

Flood Plain Development, Flood Protection and Sea Defences

Para 3.18

In times of flood, rivers breach the riverbanks and flow over their flood plain. Historically flood plains are comprised of rich agricultural land due to the rejuvenating silt left by the floods, although, in Christchurch, the Stour and Avon Valleys have differing characteristics due to the geology of their catchments. The Local Plan proposals map identifies the fluvial floodplain as restrained by existing flood defence works. These defences are designed to a 1 in 100 year return period. However the floodplain can be defined as the land adjacent to a watercourse over which water flows in the time of flood or would flow but for the presence of flood defences where they exist. The limits of a flood plain are defined by the peak water level of an appropriate return period event on the watercourse or at the coast. The following policy will apply to the floodplain as identified on the proposals map. The Council will, however, consult the Environment Agency on planning applications beyond the flood defences in the natural fluvial and tidal flood plains to seek advice on the risk of flooding and mitigation measures appropriate. Development taking place in flood plains can cause loss of life and risk to property and the reduction in the capacity of the flood plain, impeding the flow of water and increasing the risk of flooding elsewhere. The following policy will therefore apply:

POLICY ENV 7

WITHIN THE FLOOD PLAINS IDENTIFIED ON THE PROPOSALS MAP PLANNING PERMISSION WILL NOT BE GRANTED FOR NEW DEVELOPMENT INCLUDING THE RAISING OF LAND LEVELS WHERE SUCH PROPOSALS ARE LIKELY TO IMPEDE THE FLOW OF WATER OR INCREASE THE RISK OF FLOODING ELSEWHERE.

POLICY ENV 8

DEVELOPMENT WILL NOT BE PERMITTED IF IT WOULD RESULT IN ANY INCREASE IN FLOOD RISKS IN AREAS DOWNSTREAM AND UPSTREAM, DUE TO ADDITIONAL SURFACE WATER RUN aOFF, UNLESS MEASURES ARE UNDERTAKEN TO OVERCOME SUCH RISKS.

East Dorset District Council Plans

A) *East Dorset Local Plan, adopted January 2002*

Policy WENV2

Within an undefended flood risk area a proposal in a developed area will only be permitted provided that criteria (a) and (b) below are fulfilled.

Within an undefended flood risk area a proposal in an undeveloped or sparsely developed area will only be permitted if it is essential transport and utilities infrastructure, or a recreation, sport, amenity or conservation use, and criteria (a) and (b) below are fulfilled.

A proposal whether in an undeveloped or developed area which is known to be sited where flood water frequently passes, or where defences are inadequate and there could be rapid inundation, will only be permitted if it is essential transport and utilities infrastructure, or a recreation, sport, amenity or conservation use and criteria (a) and (b) below are fulfilled:

- (a) A sequential test satisfactorily shows that there are no other suitable sites with a lower risk of flooding; and
- (b) A Flood Risk Assessment satisfactorily demonstrates that measures incorporated into the scheme would prevent either life being endangered or an unacceptable likelihood of damage to property.

Policy WENV3

Development within either a defended or undefended flood risk area will only be permitted provided that the proposal does not harm the integrity or maintenance of a watercourse for the purpose of minimising flood risk.

- B) *Supplementary Planning Guidance No.26: Flood Risk, Groundwater and Sustainable Drainage, September 2005*

North Dorset District Council Plans

North Dorset District-wide Local Plan, adopted January 2003

Policy 1.13 - Areas Liable to Flood

Development in a developed area within an Area Liable to Flood will only be permitted provided that criteria (i) and (ii) below are fulfilled.

Development in an undeveloped or sparsely developed area within an Area Liable to Flood will only be permitted if it is essential transport and utilities infrastructure, or a recreation, sport, amenity or conservation use, and that criteria (i) and (ii) below are fulfilled.

Development, whether in a developed or undeveloped area, within an Area Liable to Flood which is known to be sited where flood water frequently passes will only be permitted if it is essential transport and utilities infrastructure, or a recreation, sport, amenity or conservation use, and that criteria (i) and (ii) below are fulfilled.

(i) it can be demonstrated that there are no alternative sites for the development on other previously developed land with a lower probability of flooding;

(ii) and it can be demonstrated that after incorporating flood mitigation and, or, compensation, there would be an acceptable flood risk for the development and other land uses.

Development will not be permitted in the vicinity of any flood defence structure shown on the Proposals Map or in any subsequent Supplementary Planning Guidance on Flood Risk.

Salisbury District Council Plans

Salisbury District Local Plan, adopted June 2003

Policy G4

Development will not be permitted if:

(i) it would be at risk itself from flooding;

(ii) it would increase the risk of flooding:

a. by reducing the capacity of, or increasing flows within, a flood plain; or

b. through the discharge of additional surface water; or

c. by harming flood defences.

Appendix 2

Local Authority Flood Data

The list below outlines the data that will be made available to the Consultant, for the purposes of the SFRA, by the Local Planning Authorities:

In General

1. Ordnance Survey GIS base maps (subject to a signed OS Licence Agreement)
2. LPA boundary on GIS
3. Digital Aerial photos (where available)
4. Contour mapping (where available)

Bournemouth BC

1. Historical records of flood events reported by the public

Christchurch BC

1. Paper records of historic flood events back to mid 1980s

East Dorset DC

1. Land drainage GIS layer showing sand bagging events and flood events as advised by members of the public.
2. Paper files of sand bagging events back to 1990.

North Dorset DC

1. Paper records of sand bagging events .
2. Digital photographs of flooding at various locations
3. Digital video of flooding events at various locations
4. Details of NDDC constructed flood alleviation schemes
5. Consulting Engineers reports for various locations
6. NDDC technical officers available for discussion

Salisbury DC

1. Paper records of sand bagging events since 1990
2. Parish records which may indicate historic flooding events

Environment Agency Flood Data

The list below outlines the data that may be made available to the Consultant, for the purposes of the SFRA, by the Environment Agency.

1. Main River centreline (also reach and sub reach reference)
2. Asset type (i.e. raised/ man-made)
3. Description of asset, Location, Maintainer, Asset condition
4. Asset system (i.e. what assets work together to form the flood alleviation)
5. Photographs of assets
6. Flood Alleviation Schemes
7. LiDAR
8. Flood zone 2 & 3 extent
9. Flood risk mapping studies
10. Historic flood information (extents, level, aerial photos)
11. Flood warning areas
12. Flood reports

DATA SOURCES AND DATA QUALITY SUFFIX

Data Quality

All data that has been collected and produced for use in this study has been assigned a data quality suffix. This makes it easy to distinguish between qualities of data so that the need for future updates can be prioritised, and the reliability of the mapping can be judged easily. The Data Quality Suffix (DQS) system is described realistically in Table 1.

Table 1
Data Quality Suffix System

Data Quality Suffix	Description
A	Best of breed, no better available, unlikely to be improved upon in the near future.
B	Data with known deficiencies, to be replaced as soon as improved data is available
C	Gross assumptions, not made up but deduced from experience or related literature
D	Heroic assumptions, no reliable data sources available or found, data based on engineering judgement.

Datasets

Table 2
Information on available datasets

Dataset	Notes	Source	Data Quality
OS MasterMap Basemaps	MasterMap topographical layer. Scalable Vector Graphic mapping provided for GIS systems (MapInfo .tab format, exportable to mid/mif format).	LPAs	A
Aerial photos	Coverage, year and quality of aerial photography varies between local authorities. Generally 2001 to 2006 aircraft-flown.	LPAs	B
Contour Mapping / Height point mapping	Availability varies between local authorities. In some cases 5m contour mapping available based on Intermap and/or Panorama datasets.	LPAs	B
Environment Agency Flood Zone 2	Indicative of natural undefended floodplain (i.e. without defences) at the 1:1000 year event for fluvial and tidal data. Indicates whether flooding will be an issue in an area. Currently climate change not considered. Used to guide planning consultations and to raise awareness of flood risk. There is no attribution to distinguish between fluvial/tidal/fluvial and tidal.	EA	B
Environment Agency Flood Zone 3	Indicative of natural undefended floodplain (i.e. without defences) at the 1:100 year event for fluvial data and at the 1:200 year event for tidal data. Indicates whether flooding will be an issue in an area. Currently climate change not considered. Used to guide planning consultations and to raise awareness of flood risk. There is an attribution to distinguish between fluvial/tidal/fluvial and tidal.	EA	B
Environment Agency Historic	The maximum extent of all recorded flood outlines combined together taking into account the presence of	EA	B

Dataset	Notes	Source	Data Quality
Flood Map	defences. Derived from flood event outlines. This data is updated based on reconnaissance work after flood events.		
Flooding Incidents recorded by Environment Agency	Different sources of flooding for geo-referenced features affected by flood incidents. Derived from the EA Flood Reconnaissance Information System (FRIS) maintained by Dorset Area office	EA	B
Flooding Incidents recorded by the Local Planning Authorities	Coverage and availability varies between local authorities. Paper-based mapping at various scales.	LPAs	B to C
FRIS Properties	Geo-referenced dataset highlighting properties known to have flooded internally. Derived from the EA Flood Reconnaissance Information System (FRIS) maintained by Dorset Area office.	EA	C
NFCDD Defences	A defence is a natural or constructed entity which retains, stores or channels water. It is a component of a flood defence system that protects an area from flooding from a river, estuary and/or the sea e.g. weirs, groynes and provides a locality with its standard of flood defence. This data has been sourced from the EA National Flood and Coastal Defence Database (NFCDD) as maintained by the Dorset Area office. Whilst confidence in the quality of the fluvial defence data is high work is currently being planned for the improvement of coastal defence data.	EA	B
Local Planning Authority Boundaries	The Local Planning Authority boundaries supplied in GIS format, based on Ordnance Survey boundary data.	LPAs	A
Local Planning Authorities Defences	Proposed and existing defences as identified by the Local Planning Authorities. Availability and quality varies between local authorities.	LPAs	D
Tidal Flood Extent for 2052	Projected levels of tidal floodplain for 2052 for South coast. Produced under Level B 2002-4 South Coast tidal mapping study by Royal Haskoning. Considers certain raised defences and associated overtopping and breaching for areas over 1 square km.	EA	B