

Malvern Hills District Council
Forward Planning
The Council House
Avenue Road
Malvern
WR14 3AF

Our ref: SV/2010/104077/OT-
06/IS1-L01
Your ref:
Date: 21 December 2016

F.A.O: David Clarke

Dear Sir

Regulation 16 Consultation on the Clifton upon Teme Neighbourhood Plan

Thank you for referring the above consultation on the Clifton upon Teme Neighbourhood Plan.

We sent a copy of our Neighbourhood Plan pro-forma guidance to your Council on 25 November 2015, for distribution to Parish Councils (as enclosed). The purpose of the guidance is to assist the preparation of Neighbourhood Development Plans, including an appropriate evidence base. This includes consideration of some of the relevant environmental issues that should be considered, including flood risk (from rivers and sea), water quality, water resources and includes latest Climate Change recommendations for flood risk. Since we produced this guidance we have updated our climate change allowances for planners. See [Flood risk assessments: climate change allowances](#) for more information. I have also enclosed a copy of area climate change guide to further assist.

For each proposed site allocation, we recommend completing the pro-forma to check the environmental constraints. This will help collect evidence, identify challenges, inform policy and assist delivery of sustainable solutions.

We note there do not appear to be any additional site allocations proposed within the Plan. We would only make substantive further comments on the plan if it were seeking to allocate sites in Flood Zones 2 or 3 (the latter being used as the 100 year climate change extent). Furthermore, we do not offer detailed bespoke advice on policy but advise you ensure conformity with your Local Plan and refer to our guidance. This might assist with your consideration of a local environmental enhancements or improvement policies that may be necessary.

I trust that the above is of use to you at this time.

Yours faithfully

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Cont/d..

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Flood Risk and Coastal Change

Climate Change allowances for planning (SHWG area)

March 2016

The National Planning Practice Guidance refers to Environment Agency guidance on considering climate change in planning decisions which is available online: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

This has been updated and replaces the September 2013 guidance.

It should be used to help planners, developers and advisors implement the National Planning Policy Framework (NPPF)'s policies and practice guidance on flood risk. It will help inform Flood Risk Assessments (FRA's) for planning applications, local plans, neighbourhood plans and other projects.

Fluvial flooding – peak river flows

Table 1 of the guidance advises that an allowance should be added to 'peak river flows' to account for 'climate change' which should be specific to a river basin district catchment.

In Shropshire, Herefordshire, Worcestershire and Gloucestershire area, we would refer you to the relevant extract from Table 1 below. This outlines the '**peak river flows**' within the 'Severn River Basin District', and specifies the range of percentage allowances to reflect individual development's lifetime and vulnerability. For example, residential would be 100 years (so 2070-2115).

Table 1 Extract

Severn Peak River Flows: Total potential change anticipated	2015-39	2040-2069 (less vulnerable)	2070-2115 (more vulnerable)
Upper end	25%	40%	70%
Higher central	15%	25%	35%
Central	10%	20%	25%

Sea Level rise allowances

Table 3 of the guidance (extract below) indicates that net sea level risk remains unchanged from the 2013 version.

Area of England	1990 - 2025	2026 - 2050	2051 - 2080	2081 - 2115	Cumulative (1990 - 2115)
South West	3.5mm p/a	8mm p/a	11.5mm p/a	14.5mm p/a	1.18m

Flood Risk Assessment considerations:

The design flood (1% flood level fluvial, or 0.5% tidal, plus climate change allowance) should be used to inform the sequential test, including appropriate location of built development; consideration of flood risk impacts, mitigation/enhancement and ensure 'safe' development.

Vulnerability classification

- Development classed as 'Essential Infrastructure' (as defined within Table 2 - Flood Risk Vulnerability Classification, Paragraph: 066 Reference ID: 7-066-20140306 of the NPPG) should be designed to the 'upper end' climate change allowance (70%).
- For highly vulnerable or more vulnerable development e.g. housing, the FRA should use the 'higher central' climate change allowance (35%), as a minimum, to inform built in resilience; but aim to incorporate managed adaptive approaches/measures for the 'upper end' allowance (70%) where feasible.
- For water compatible or less vulnerable development e.g. commercial, the FRA should use the 'central' climate change allowance (20%), as a minimum, to inform built in resilience; but aim to incorporate managed adaptive approaches/measures for the 'higher central' allowance (25%) where feasible.

Modelling approach

- Major Development:

For 'major' development (as defined within The Town and Country Planning Development Management Procedure (England) Order 2015)*, see definition note below, we would expect a detailed FRA to provide an appropriate assessment (hydraulic model) of the 1% with relevant climate change ranges.

There are two options:

Scenario 1 - Produce a model and incorporate relevant climate change allowances in Table 1.

Scenario 2 - Re-run an existing model and incorporate relevant climate change allowances in Table 1.

- Non Major Development:

For 'non major' development, we would advise that a model is produced or existing model is re-run, similar to the above approach (Scenario 1 and 2). This would give a greater degree of certainty on the design flood extent to inform a safe development.

However, for 'non major' development only, in the absence of modelled climate change information it may be reasonable to utilise an alternative approach. To assist applicants and Local Planning Authorities we have provided some 'nominal' climate change allowances within the 'Table of nominal allowances' below. These should be considered as appropriate within any FRA. There are three additional options:

Scenario 3 - Where previous modelled data (for a variety of return periods) is available, you could interpolate your own climate change figure (see note iv below).

Scenario 4 - Where the 1% level is available from an existing model add on the relevant 'nominal climate change allowance' provided in the 'Table of nominal allowances' below.

Scenario 5 - Establish the 1% level, for example using topographical levels (including LiDAR) and assessment of watercourse flow and nature and then add on the relevant 'nominal climate change allowances' provided in the 'Table of nominal allowances' below.

*Note: For definitions of 'major' development see 'Interpretation 2.—(1)', on page 5, at www.legislation.gov.uk/ukxi/2015/595/pdfs/ukxi_20150595_en.pdf

Table of Nominal Allowances

Watercourse	20% - 25%	35% - 40%	70%
Upper Severn	600mm	850mm	1500mm
River Wye			
River Teme			
River Avon			
Lower Severn	400mm	600mm	1000mm
Tributaries and 'ordinary watercourses'	200mm	300mm	500mm

Notes to above:-

(i) Watercourse definition:

The "Upper Severn"/"Lower Severn" boundary is taken as Lincomb Weir, Worcestershire (national grid reference SO8196869458).

An 'Ordinary Watercourse' is a watercourse that does not form part of a main river. Main Rivers are indicated on our Flood Map. You can also check the classification of the watercourse with the LLFA, some of which have produced Drainage and Flooding Interactive Maps.

(ii) Where a site is near the confluence of two, or more, watercourses, the FRA should use the larger river climate change allowances.

(iii) We may hold more precise information for some of the "tributaries". We would recommend that you seek this information from us via a 'pre-planning enquiry/data request', to the email address below.

(iv) We would also recommend that you contact us for our modelled '20%' allowances and associated flow data. This is available for some rivers. This data may help inform a more detailed climate change analysis (where necessary), including any interpolation of levels or flow to create a 'stage discharge rating' in order to estimate the required percentage; or be of assistance to inform 'less vulnerable' or 'water compatible' development proposals.

IMPORTANT NOTE

Please note the nominal climate change allowances are provided as a pragmatic approach, for consideration, in the absence of a modelled flood level and the applicant undertaking a detailed model of the watercourse. Use of nominal climate change allowances are not provided/ recommended as a preference to detailed modelling and historical data.

The Local Planning Authority may hold data within their Strategic Flood Risk Assessment (SFRA), or any future updates, which may help inform the above.

FREEBOARD NOTE

It is advised that Finished Floor Levels should be set no lower than '600mm' above the 1% river flood level plus climate change. Flood proofing techniques might be considered where floor levels cannot be raised (where appropriate). This 600mm freeboard takes into account any uncertainties in modelling/flood levels and wave action (or storm surge effects).

Surface Water

Table 2 of the guidance also indicates the relevant increases that surface water FRA should consider for an increase in peak rainfall intensity.

The following table is for 'peak rainfall intensity' allowance in small and urban catchments. Please note that **surface water (peak rainfall intensity) climate change allowances should be discussed with the Lead Local Flood Authority (LLFA).**

Peak Rainfall Intensity - Applies across all of England	Total potential change anticipated for 2010-2039	Total potential change anticipated for 2040-2059	Total potential change anticipated for 2060-2115
Upper end	10%	20%	40%
Central	5%	10%	20%

Note to above:-

For river catchments around or over 5 square kilometres, the peak river flow allowances are appropriate.

Produced by: shwgplanning@environment-agency.gov.uk

Shropshire, Herefordshire, Worcestershire and Gloucestershire Sustainable Places Team.

Neighbourhood Plan

Environment Agency consultation pro-forma/ guide

Version 2, November 2015

Together with Natural England, English Heritage and the Forestry Commission we have published joint advice on Neighbourhood Planning which sets out sources of environmental information and ideas on incorporating the environment into plans. This is available at:

http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/LIT_6524_7da381.pdf

We aim to reduce and protect against flood risk, whilst protecting and enhancing the water environment, land and biodiversity.

We have produced the following guidance to assist you in 'Shropshire, Herefordshire, Worcestershire and Gloucestershire (SHWG) area'. This takes you through some of the relevant environmental issues your community should consider when producing a Neighbourhood Plan. We recommend completing the pro-forma to check the environmental constraints. This will help collect evidence, identify challenges, inform policy and assist delivery of sustainable solutions. This approach will help ensure you have a robust Plan.

Flood Risk

Your Neighbourhood Plan should conform to national and local policies on flood risk.

National Planning Policy Framework (NPPF) – Paragraph 100 states that 'Inappropriate development in areas of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere'.

With reference to the emerging South Worcestershire Development Plan it is important that your Plan is in accordance with Policy SWDP 28 – Management of Flood Risk and the associated text.

<http://www.swdevelopmentplan.org/>

If your Neighbourhood Plan is proposing sites for development you should check whether any of the proposed allocations are at risk of river or tidal flooding based on our Flood Map (of modelled flood risk). For example are there any areas of Flood Zone 3 or 2 (High and Medium Risk). In line with National Planning Policy and, specifically, the Sequential Test, you should aim to locate built development within Flood Zone 1, the low risk Zone. Our **Flood Map** can be accessed via the following link:

<http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=floodmap#x=357683&y=355134&scale=2>

In addition to the above you should also check with the relevant Council's Neighbourhood Planning team with regards to other sources of flooding (such as surface water, groundwater, sewers and historic flooding) as detailed in their Strategic Flood Risk Assessment (SFRA). Worcestershire County, as the Lead Local Flood Authority (LLFA), now has responsibility for local flood risk management and may hold flooding information that is not identified on our Flood Map.

Specifically, some watercourses have not been modelled on our Flood Maps (Our Flood Maps primarily show flooding from Main Rivers, not ordinary watercourses, or un-modelled rivers, with a catchment of less than 3km²).

Your Sequential Test should include a consideration of climate change (see below). In the absence of up to date modelled flood risk information, or a site specific FRA, to confirm an appropriate allowance you may wish to utilise the current Flood Zone 2 extent (where available) to indicate the likely, nominal, Flood Zone 3 with climate change extent. Where no modelling or flood map outline is available you will need to consider an alternative approach. Where an un-modelled watercourse is present, or adjacent to a site, then

it may be prudent to incorporate a buffer zone, relative to topography, in consideration of flood risk not shown on the Flood Map.

Some assessment is necessary in your Plan, to confirm that the site is developable. This includes safe occupation and that there will be no impact on third parties. You might seek opportunities for enhancement.

All 'major development' sites with flood risk issues, especially those with ordinary watercourses or un-modelled rivers within/adjacent or near to sites, are likely to need detailed modelling at the planning application stage to verify the design flood extents, developable areas and that the development will be sustainable.

Climate Change

Your Local Authority's SFRA should indicate the extent of flood zones with likely climate change. We are expecting revised climate change allowances to be published by the end of 2015. These are presently in draft but would update the figures within Table 2 of the current 'Climate change allowances for planners' (September 2013) guide, as referenced in paragraph 7-068-20140306 of the National Planning Practice Guidance (NPPG) at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296964/LIT_8496_5306da.pdf

The table below is for 'peak river flows' within the Severn River Basin district, and for your information at this time to enable consideration of a range of allowances in the development of the SFRA to allow the inclusion of an appropriate climate change allowance to reflect individual development's lifetime and vulnerability. For example residential would be 100 years (so 2070-2115).

Severn Peak River Flows: Total potential change anticipated	2015-39	2040-2069	2070-2115
Upper end	25%	40%	70%
Higher central	15%	25%	35%
Central	10%	20%	25%

The following table is for 'peak rainfall intensity' allowance in small and urban catchments. **Surface water (peak rainfall intensity) climate change allowances should be discussed with the LLFA.**

Peak Rainfall Intensity - Applies across all of England	Total potential change anticipated for 2010-2039	Total potential change anticipated for 2040-2059	Total potential change anticipated for 2060-2115
Upper end	10%	20%	40%
Central	5%	10%	20%

Note to above: This table shows anticipated changes in extreme rainfall intensity in small and urban catchments. The peak rainfall intensity ranges are appropriate for small catchments and urban or local drainage sites. For river catchments around or over 5 square kilometres, the peak river flow allowances are appropriate.

Flood Defences - Areas of your Parish, or proposed sites, may be afforded protection by a flood defence/alleviation scheme. Where this is the case your Plan should acknowledge this and identify the level of protection provided (including any climate change allowance). It should be noted that flood defences are intended to protect existing properties and are not to facilitate new development in areas that would otherwise be impacted by flooding. Any assessment of development behind flood defences should consider the impacts of a breach or overtopping. Where it is determined that new development should be behind a flood defence financial contributions may be sought to maintain or improve the structure.

Waste Water Infrastructure

The Environment Agency has offered advice to the South Worcestershire Councils, as part of their Local Plan, to help ensure that their strategic housing growth can be accommodated in consideration of waste water infrastructure. Information on local treatment works and their ability to accommodate housing and employment growth can be found in their Water Cycle Study (WCS). In addition you should contact the Water Company for further advice.

Where growth areas are proposed at the local level waste water infrastructure is also of importance in your Neighbourhood Plan. You should use the pro-forma to identify the receiving sewage treatment works and whether the housing and/or any other proposals can be accommodated without impacting upon the receiving treatment works. You should look at physical capacity issues (e.g. network pipes) in consultation with the Water Company; and environmental capacity (quality of treated effluent) issues.

Where there is an identified constraint (amber or red) you should demonstrate that there is a solution (it may be already programmed, or could be a possible future infrastructure upgrade) to help improve the capacity issue and enable the development to go ahead. This will require consultation with the Water Company and we have developed some general questions to assist this process. The outcome of this may inform a 'phasing' policy within your plan where appropriate. It may also be necessary to produce an 'Infrastructure Delivery Plan' to set out any key milestones for waste water infrastructure upgrades and improvements. The evidence you produce should give a reasonable degree of certainty to all parties, helping demonstrate development is deliverable, and importantly ensure that your plan is 'sound'.

Note: Government Guidance states that sufficient detail should be provided to give clarity to all parties on when infrastructure upgrades will be provided, looking at the needs and costs (what and how much). The NPPG refers to "ensuring viability and deliverability – pursuing sustainable development requires careful attention to viability and costs in plan making and decision making". Plans should be "deliverable".

The WCS should help you to identify whether your Parish has capacity problems at its receiving treatment works. We would recommend a conversation with the Water Company to ascertain how you can progress site proposals within your Plan without impact on the works. The below may assist:

- What solutions are programmed within Asset Management Plans (AMP)? When will these solutions be delivered? Are there any options for accelerating these schemes via developer contributions?
- In the absence of an improvement schemes what could alternative solutions be (type and location of) for short/medium/long term growth. Are these solutions cost prohibitive?
- Are there any short term options to facilitate growth? Some options to consider could be SUDS retrofitting or removing surface water from sewer systems.
- Utility companies could be asked about what WFD work they already have programmed in to their AMP Schemes for Phosphate stripping or other sanitarities (e.g. ammonia/Biological Oxygen Demand).
- With reference to Phosphate or Ammonia specific issues, are there any stringent measures factored in to ensure no environmental deterioration? What improvement scheme is, or could be, in place to bring forward development?

Water Management and Groundwater Protection

Local level actions and decision making can help secure improvements to the water environment. This is widely known as the catchment-based approach and has been adopted to deliver requirements under the Water Framework Directive (WFD). It seeks to:

- deliver positive and sustained outcomes for the water environment by promoting a better understanding of the environment at a local level; and
- encourage local collaboration and more transparent decision-making when both planning and delivering activities to improve the water environment.

Neighbourhood Plans provide an opportunity to deliver multi-functional benefits through linking development with enhancements to the water environment. Local WFD catchment data can be obtained from: <http://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/9>

South Worcestershire falls within the Severn River Basin Management Plan (SRBMP) area and the document highlights key issues and actions for the Severn catchment that should be of use in developing your Neighbourhood Plan. A revision to the current 2009 SRBMP (available at <https://www.gov.uk/government/collections/river-basin-management-plans>) is due to be approved by Government by the end of December 2015 - further details are at: <https://www.gov.uk/government/collections/river-basin-management-plan-update>

Aquifers and Source Protection Zones (SPZ): Some of your local area, and specific potential site allocations, may be located upon or within aquifers and Source Protection Zones (link below). SPZ 1 is especially sensitive. You might consider these within your plan and when allocating sites. The relevance of the designation and the potential implication upon development proposals should be seen with reference to our Groundwater Protection: principles and practice (GP3): <http://maps.environment-agency.gov.uk/wiyby/wiybyController?lang=e&topic=groundwater&layer=default&ep=map&layerGroups=default&scale=2&x=357683&y=355134>

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297347/LIT_7660_9a3742.pdf

Development and surface water drainage will need to be carefully located and designed to avoid pollution risks to waters and address potential environmental impact associated with low flows. For example SuDS may need to provide multiple levels of treatment. To address any quantitative issues with the waterbodies, SuDS should be designed so to maximise recharge to the aquifer and can support water levels in receiving rivers.

Water efficiency at Neighbourhood Plan level: Government do not see Neighbourhood Plans as tools to deliver water efficiency targets. These may be secured in a higher level local plan policy. This is based on the draft Technical Standards – Housing Standards Review (Paragraph 14) which provides advice on more stringent ('optional') water efficiency targets/measures, which go beyond the minimum building regulations standard. Paragraph 14 states that..."Neighbourhood Planning Bodies (and Neighbourhood Development Orders) will only be able to apply the space standard and not optional requirements".

Neighbourhood Plan Environment Agency Pro-Forma

Site Allocation Description e.g. name, type and number of units.	Flood Zone (3/2/1)*	Unmodelled river or ordinary watercourse in or adjacent to site	Other sources of flooding (e.g. SW, GW, SF)	Flood Defence	Aquifer/Source Protection Zone 1 (Description)	Nutrient Management Plan (for Herefordshire Wye and Lugg; and Shropshire Clun only).	Environmental Capacity at Treatment Works (Red – potential showstopper, Amber – possible problem; or Green – likely to be no issues)
Example	2	Y	SW	N	N	Y	Amber
		Y/N		Y/N	Y/N	Y/N/NA	
		Y/N		Y/N	Y/N	Y/N/NA	
		Y/N		Y/N	Y/N	Y/N/NA	

customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
0845 988 1188

www.environment-agency.gov.uk

		Y/N		Y/N	Y/N	Y/N/NA	
		Y/N		Y/N	Y/N	Y/N/NA	
		Y/N		Y/N	Y/N	Y/N/NA	
		Y/N		Y/N	Y/N	Y/N/NA	
		Y/N		Y/N	Y/N	Y/N/NA	

*Note to above: Flood Zone 3 is the high risk zone and is defined for mapping purposes by the Environment Agency's Flood Zone Map. Flood Zone 3 refers to land where the indicative annual probability of flooding is 1 in 100 years or less from river sources (i.e. it has a 1% or greater chance of flooding in any given year). Flood Zone 2 is land where the indicative annual probability of flooding is between 1 in 100 and 1 in 1000 years. Flood Zone 1 is the low risk Zone with a flood risk in excess of 1 in 1000 years.

When considering 'other sources of flooding' you should refer to the SFRA and contact the relevant Council's Neighbourhood Planning team to ascertain whether the Parish, or specific allocated site, is impacted by surface water, groundwater, or sewer flooding etc. The team and/or the LLFA may also have historic flooding information to help inform your plan. More information on sewer flooding, or plans to remedy such, may be available from the Water Company.

Template Produced by: SHWGplanning@environment-agency.gov.uk

Shropshire, Herefordshire, Worcestershire and Gloucestershire Sustainable Places Team.