

LOCAL PLAN SUB COMMITTEE - 16 JUNE 2020

PART I – NOT DELEGATED

7. LOCAL PLAN – TOPIC PAPER: FLOOD RISK & WATER RESOURCES (DCES)

1 Summary

- 1.1 This topic paper sets out the issues which the new Local Plan will need to address in relation to flood risk and water resources, and proposes policy wording to be contained within the new Local Plan.

2 Details

Flood Risk

- 2.1 The National Planning Policy Framework requires that strategic flood risk policies are informed by a Strategic Flood Risk Assessment (SFRA) and states that strategic flood risk policies should manage flood risk from all sources.
- 2.2 The Council has completed both a Level 1 and Level 2 SFRA.
- 2.3 The Level 1 SFRA is a strategic level study¹ which collates and analyses the latest available information and data for current and future (i.e. climate change) flood risk from all sources² and how these can be mitigated
- 2.4 The Level 2 SFRA provides an assessment of:
- all sources of flooding including fluvial flooding, surface water flooding, groundwater flooding, reservoir flooding, mapping of the functional floodplain and the potential increase in fluvial and surface water flood risk due to climate change.
 - any flood warning areas at sites, including whether there is safe access and egress during an extreme event, and
 - Advice and recommendations on the likely suitability of Sustainable Drainage Systems (SuDS) for managing surface water runoff.
- 2.5 The NPPF requires that plans apply a sequential, risk-based approach to the location of development, taking into account current and future levels of climate change, in order to protect people and property from flooding. Strategic policies should do this, and manage any residual risk, by:
- a) applying the sequential test and then, if necessary, the exception test;
 - b) safeguarding land from development that is required, or likely to be required, for current or future flood management;

¹ A joint study with Dacorum Borough Council, St. Albans City and District Council and Watford Borough Council.

² The SFRA has considered all sources of flooding including fluvial, surface water, ground water, sewers and reservoirs.

- c) using opportunities provided by new development to reduce the causes and impacts of flooding (where appropriate through the use of natural flood management techniques); and
- d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations³.

Flood Zones & Flood Risk Vulnerability

2.6 The Environment Agency has devised a set of Flood Zones which are categorised by the probability of flooding⁴ on land:

Flood Zone	Definition
Zone 1 – Low Probability	Land having a less than 1 in 1,000 annual probability of flooding from rivers or sea.
Zone 2 – Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of flooding from rivers or sea.
Zone 3a – High Probability	Land having a 1 in 100 or greater annual probability of flooding from rivers or sea.
Zone 3b – The Functional Floodplain	Land where water has to flow or be stored in times of flood.

2.7 National planning guidance sets out what types of development would be appropriate in each flood zone. This is referred to as the Flood Risk Vulnerability Classification; further detail is set out in Appendix 2.

The Sequential Risk-Based Approach

2.8 The NPPF supports a risk-based and sequential approach to development and flood risk, with the aim of steering new development to areas with the lowest risk of flooding⁵. The approach is designed to ensure that if there are better sites in terms of flood risk, or a proposed development cannot be made safe, it should not be permitted⁶. The sequential test is applied to specific development proposals in determining planning applications.

2.9 Applying the sequential approach means that where there are no reasonably available sites in Flood Zone 1, reasonably available sites in Flood Zone 2 should be considered. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the suitability of sites in Flood Zone 3 be considered. The vulnerability of different land uses to flood risk should be taken into account when considering development in Flood Zones 2 and 3.

³ NPPF, Paragraph 157.

⁴ Flood Zones only relate to flooding from rivers or sea.

⁵ NPPF, Paragraph 158

⁶ NPPG Flood risk and coastal change, Paragraph: 001

- 2.10 If there are found to be other reasonably available sites at a lower risk of flooding, then the development has failed the Sequential Test and planning permission should be refused. However, if there are no other reasonably available sites, then the development can be deemed as passing the Sequential Test. If a proposal passes the Sequential Test, the Exception Test may also have to be applied (see Paragraph 2.12 for details).

The Exception Test

- 2.11 The NPPF states that if it is not possible for development to be located in zones with a lower risk of flooding, the exception test may have to be applied⁷. The application of the Exception Test depends on the vulnerability of the land use type proposed in the development. The Flood Risk Vulnerability Classification shows the circumstances in which the Exception Test should be applied (details in Appendix 2).
- 2.12 Where necessary, the Exception Test is applied at the planning application stage. For the Exception Test to be passed, the NPPF states that it should be demonstrated that:
- a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; **and**
 - b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall⁸.
- 2.13 For the first part of the Exception Test, the wider sustainability benefits used in the assessment should have regard to the Local Plan Sustainability Appraisal and/or Local Plan policies.
- 2.14 The second part of the Exception Test should be demonstrated through a site-specific flood risk assessment (see Paragraph 2.17 for details).
- 2.15 The Sequential and Exception Tests are not required for applications for some minor development (householder development, non-residential extensions of less than 250sqm) and changes of use (unless the change of use would introduce a more vulnerable use to flood risk). However, if applicable, these applications should be supported by site-specific flood risk assessments.

Site-specific Flood Risk Assessments (FRA)

- 2.16 For certain planning applications⁹, the NPPF states that a site-specific flood risk assessment should be provided. Site-specific FRA should demonstrate how flood risk will be managed, taking into account climate change and having regard to the vulnerability of different land uses to flood risk.

⁷ NPPF, Paragraph 159.

⁸ NPPF, Paragraph 160.

⁹ A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

- 2.17 The NPPF states that a development should only be allowed in areas at risk of flooding where it can be demonstrated through a site-specific FRA that¹⁰:
- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;
 - b) the development is appropriately flood resistant and resilient;
 - c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;
 - d) any residual risk can be safely managed¹¹; and
 - e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.
- 2.18 The Level 1 SFRA recommended that for sites located in catchments identified as highly sensitive to the cumulative impact of development, site-specific FRAs should also require consideration of the cumulative effects of the proposed development and should demonstrate that flood risk downstream will not be made worse as a result of cumulative development.
- 2.19 The detail contained in FRAs should be proportionate to the degree of flood risk and appropriate to the scale, nature and location of development¹².

Sustainable Urban Drainage Systems (SuDS)

- 2.20 SuDS are designed to control surface water run off close to where it falls and mimic natural drainage as closely as possible. They provide opportunities to reduce the causes and impacts of flooding and combine water management with green space and amenity, recreation and wildlife benefits.
- 2.21 The NPPF states that all major developments should incorporate SuDS unless there is clear evidence that this would be inappropriate. The systems should:
- a) take account of advice from the lead local flood authority;
 - b) have appropriate proposed minimum operational standards;
 - c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and
 - d) where possible, provide multifunctional benefits.
- 2.22 The Level 1 SFRA recommended that planning policies should focus on supporting the Lead Local Flood Authority (Hertfordshire County Council) in ensuring that all developments, even minor ones, build SuDS into their design. As the effectiveness of SuDS within a site is dependent on the site characteristics such as topography, geology, soil permeability and existing flow paths across the site, the techniques used should be appropriate to local conditions.

¹⁰ NPPG (Paragraph 068) provides a 'checklist' of information to be included in a site-specific flood risk assessment.

¹¹ For example, through flood warning and evacuation plans being put in place.

¹² NPPG Flood risk and coastal change, Paragraph: 031.

Water Resources

- 2.23 The Three Rivers District is entirely underlain by a chalk aquifer, which is the main drinking water resource for the area and a regionally important source of groundwater. The Three Rivers area has a large number of surface water resources including the Rivers Colne, Gade and Chess, the Grand Union Canal, as well as several lakes and ponds, particularly within the floodplain of the River Colne.

Water Quality

- 2.24 The NPPF states that consideration should be made to the following objectives set out in the Government's 25 Year Environment Plan¹³:
- To reduce the damaging abstraction of water from rivers and groundwater;
 - To reach or exceed objectives for rivers, lakes, coastal and ground waters that are specially protected for biodiversity or drinking water, as set out in the River Basin Management Plan (RBMP)¹⁴.
- 2.25 The Thames River Basin Management Plan¹⁵ sets out the environmental objectives of achieving good ecological status for water bodies, protecting drinking water sources and preventing the deterioration of the status of surface waters and groundwater.
- 2.26 The NPPF goes on to state that planning policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of water pollution. Development should, wherever possible, help to improve local environmental conditions such as water quality, taking into account relevant information such as river basin management plans (paragraph 170).
- 2.27 It is essential for development to protect and, where possible, enhance water quality. This means controlling aquatic pollution, protecting and enhancing the quality and quantity of groundwater, protecting and enhancing surface water resources, such as through the use of SuDS to manage surface water. Changes to the design of developments and the implementation of mitigation measures should prevent potential harm to water bodies, however, where it is likely that a proposal would have a significant adverse impact on water quality, a more detailed assessment will be required.

Water Supply

- 2.28 Paragraph 149 of the NPPF states that plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for water supply.

¹³ DEFRA (2019) 25 Year Environment Plan <https://www.gov.uk/government/publications/25-year-environment-plan>

¹⁴ Three Rivers is in the Colne river catchment, which is included in the Environment Agency's Thames River Basin Management Plan.

¹⁵ DEFRA and the Environment Agency (2015) Thames River Basin District Management Plan <https://www.gov.uk/government/publications/thames-river-basin-district-river-basin-management-plan>

- 2.29 Three Rivers is located in an area of serious water stress¹⁶. Until recently, the District's water supply region had one of the highest water usage rates yet is located in one of the driest regions, with Hertfordshire's average rainfall returning only two thirds the national average¹⁷. Climate change is predicted to bring warmer wetter winters and hotter drier summers, reducing the overall available supply of water and increasing the demand for water. Prolonged periods of hotter weather is anticipated to lead to more evaporation from reservoirs and rivers and potential drought events whilst intense rainfall would result in surface flooding and more pollutants running off into rivers and streams.
- 2.30 Affinity Water's Draft Final Water Resource Management Plan (2019)¹⁸ estimates a regional shortfall in water supply of 43 million litres per day by 2025, rising to 108 million litres per day in 2045. Available water supplies are estimated to continue to reduce during this period due to the impacts of climate change and demand increases due to population growth.
- 2.31 This highlights the importance of protecting the quality of water resources as well as encouraging the use of water efficiency measures and a reduction in water consumption, in order to protect future water supply. In individual developments, the design of dwellings and buildings can incorporate water efficient features such as rainwater storage tanks, water butts and green roofs (as appropriate). The efficient use of water resources, including water re-use and recycling, should also be sought through sustainable construction methods (such as rainwater harvesting) that conserve and make prudent use of water and other natural resources. Water efficient appliances (for showers, taps, washing machines, toilets, etc.) and water efficient landscaping and irrigating measures in new developments will also help to support sustainable supplies of water for the future.
- 2.32 Part G of the Building Regulations sets a mandatory requirement that all new homes must achieve a water efficiency standard of 125 litres of water per person per day (l/p/d). In 2015, the Building Regulations Part G were updated and an 'optional' requirement of 110 l/p/d for new residential development was introduced¹⁹. Where there is a clear need, Local Plan policies can require that new dwellings meet optional requirement of 110 l/p/d²⁰.
- 2.33 Given the estimated future regional shortfall in water supply, the recommendation from the Environment Agency in the Thames River Basin Management Plan and in consultation with Affinity Water, it is considered that there is an evidenced need to require the optional standard of 110 l/p/d in new developments in order to ensure water efficiency. Three Rivers' classification in an area of serious water stress further evidences a need for the optional 110 l/p/d requirement.

¹⁶ The Environment Agency (2013) Water stressed areas – final classification https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressed-classification-2013.pdf. 'Serious' water stress is identified as an area where the current or future demand for household water is, or is likely to be, a high proportion of the effective rainfall which is available to meet that demand.

¹⁷ Building Futures Water Facts <https://www.hertfordshire.gov.uk/microsites/building-futures/a-sustainable-design-toolkit/technical-modules/water/water-facts.aspx>

¹⁸ Affinity Water (2019) *Draft* Final Water Resources Management Plan <https://www.affinitywater.co.uk/corporate/plans/water-resources-plan>

¹⁹ It should be noted that in July-October 2019, the Government consulted on lowering the mandatory standard of 125 l/p/d and optional requirement of 110 l/p/d as a measure to reduce personal water use (<https://consult.defra.gov.uk/water/measures-to-reduce-personal-water-use/>).

²⁰ NPPG, Housing: optional technical standards, Paragraph: 014

- 2.34 The 110 l/p/d standard sought in the draft policy will be subject to a Whole Plan Viability Assessment which the NPPF requires to test the policies within the Draft Local Plan to consider whether those policies maintain the viability of development. The assessment will include modelling of all policy requirements likely to impact on viability, such as affordable housing, carbon reduction requirements, environmental standards, space standards, open space requirements, Community Infrastructure Levy etc. It should be noted that where it is likely that a policy will impose greater financial burdens on developers, regard should be had to its potential adverse consequence on the delivery of other important policy objectives e.g. carbon reduction requirements.
- 2.35 The Whole Plan Viability Assessment has not yet been completed. Should the Viability Assessment result in changes to the draft policy provided in Appendix 1, the Draft Flood Risk and Water Resources Policy will be amended and brought back to this sub-committee for further consideration.

Waste Water & Sewage

- 2.36 Thames Water Utilities Ltd (TWU) is the statutory undertaker responsible for wastewater services in Three Rivers. All of the District's sewage drains to Maple Lodge Wastewater Treatment Works (WwTW).
- 2.37 Necessary infrastructure reinforcement should be delivered before the occupation of development. Thames Water have advised that where necessary infrastructure upgrades are not made before occupation, there is a risk of adverse amenity impacts for existing and/or future users; for example, internal and external sewer flooding and pollution of land and watercourses. Therefore, developments that result in the need for off-site upgrades will be subject to conditions to ensure the occupation does not outpace the delivery of necessary infrastructure upgrades. Early communication between Thames Water and developers regarding the intended delivery programme is encouraged and may prevent the need to implement planning conditions.
- 2.38 It is noted that many existing water mains and sewerage systems are increasingly becoming overloaded by successive development. It is therefore crucial to ensure that adequate infrastructure is in place prior to development, in order to avoid impacts such as sewage flooding of existing residential dwellings and commercial premises. The Water Cycle Study Scoping Report for South West Hertfordshire highlighted the restrictions in the capacity of Maple Lodge and Blackbirds Wastewater Treatment Works in accommodating growth. Upgrading of the sewerage infrastructure across South West Hertfordshire was identified as a requirement. These conclusions were reinforced in the Draft Hertfordshire Water Study (2017) which concluded that in the longer term (2031-2051), strategic investment will be required to increase the capacity of major sewage treatment works in Hertfordshire, including Maple Lodge STW.
- 2.39 Thames Water Utilities Ltd (TWU) is the statutory undertaker responsible for wastewater services and under the Water Industry Act, has a duty to ensure that adequate sewer and treatment capacity is in place to accommodate development. They are aware that an increase in capacity will be required in the future. Thames Water's plans to upgrade the Maple Lodge STW will be set out in the Infrastructure Delivery Plan (IDP) for the new Local Plan.
- 2.40 The Environment Agency were consulted on the draft policy and their comments have been incorporated, where applicable, into the proposed Draft Flood Risk and Water Resources Policy.

2.41 The proposed Draft Flood Risk and Water Resources Policy is set out in Appendix 1.

3 Policy/Budget Reference and Implications

3.1 The recommendations in this report are within the Council's agreed policy and budgets.

4 Financial, Legal, Equal Opportunities, Staffing, Environmental, Community Safety, Public Health, Customer Services Centre, Communications & Website, Risk Management and Health & Safety Implications

4.1 None specific.

5 Recommendation

5.1 That the Local Plan Sub Committee note the contents of this report and recommend to the Policy and Resources Committee that the Draft Flood Risk and Water Resources Policy as set out in Appendix 1 is included in the new Local Plan.

Report prepared by: Lauren McCullagh, Planning Officer

Background Papers

National Planning Policy Framework (2019)

National Planning Guidance (2019)

South West Hertfordshire Level 1 Strategic Flood Risk Assessment (2019)

Three Rivers District Council Level 2 Strategic Flood Risk Assessment (2019)

Water Cycle Study Scoping Study (2010)

Draft Hertfordshire Water Study (2017)

Affinity Water *Draft* Final Water Resources Management Plan (2019)

DEFRA and the Environment Agency (2015) Thames River Basin District Management Plan

APPENDICES

Appendix 1 Draft Flood Risk and Water Resources Policy

Appendix 2 Flood Risk Vulnerability Classification