

Local Plan 2040 Preferred Options

Flooding and drainage background paper

1. Introduction

The Council published its initial issues consultation for the new Local Plan in the summer of 2021 and as part of the consultation we prepared a background paper which addressed the issue of flood risk in the city. The paper set out the relevant national, regional and local policy context for this topic; then went on to set out the key issues of relevance to the city; before highlighting some potential approaches that could be pursued in developing new policies. This paper should be considered as a continuation of that issues paper, as such for brevity, other than the summary below, it does not repeat content here.

This paper sets out a summary of the feedback we received from the 2021 consultation, before touching upon further analysis we have been conducting on the performance of the existing flood risk policies in the adopted plan – including monitoring analysis from our Authority monitoring report, feedback from development management colleagues and other specialists. Following that we go into detail on a few of the key areas that have led us to formulating the options for policy and our preferred options that we have set out in the main consultation document.

2. Context including summary of Issues consultation

2.1 Summary of 2021 Issues consultation

The Council published its initial issues consultation for the new Local Plan in the summer of 2021 and as part of the consultation we included a background paper which addressed the issue of managing flood risk. The paper set out the relevant national, regional and local policy context for this topic; then went on to set out the key issues of relevance to the city; before highlighting some potential approaches that could be pursued in developing new policies. This paper should be considered as a continuation of that issues paper, as such for brevity, other than the summary below, it does not repeat content here.

The 2021 background paper acknowledged that Oxford has a history of flood events and identified that there are a variety of sources of flooding in Oxford. The ongoing impact of climate change included projected wetter winters and increased incidences of intense rainfall events is likely to exacerbate these risks in the future, with a variety of negative consequences for property, economy and ecosystems as well as human health.

There are major technical obstacles in Oxford which mean any solutions to flooding will be expensive, provide different levels of protection and not benefit everyone in the affected communities. One example of such scheme is the Oxford Flood Alleviation Scheme (OFAS). This is a long-term measure that once completed, will reduce the risk of flooding for properties and infrastructure from the River Thames, as well as to the railway, Botley and Abingdon Roads. A revised planning application for the scheme was submitted to Oxfordshire County Council in March 2022 and is due to be determined by the end of this year. Although other proposals can be brought forward that will reduce the risk to many people, major flood defences are not a realistic option in the foreseeable future. The most sustainable way of reducing flood risk in Oxford will be through a Flood Risk Management Strategy. However, even with flood defences in place, an element of residual risk will remain in areas that are prone to flooding. Residual risk can arise from the failure of flood management infrastructure such as a breach of a raised flood defence or blockage of a surface water conveyance system.

Nationally, there has been growing recognition of the need for adapting development to build resilience to flooding, and the new Local Plan will need to continue to take a strong approach to managing flood risk in the city, whilst continuing to balance the need to deliver new development in a safe and resilient way that does not exacerbate flood risk elsewhere. Policies and assessments for the Oxford Local Plan 2040 will need to reflect the current modelling of flood risk for the area now and into the future, and incorporate the Environment Agency's most up-to-date allowances for climate change.

The paper set out several options that we might want to consider as we develop options for new policies including:

- Addressing present day and future flood risk in and around the city.
- Incorporating flood resistance and resilience measures as part of the design of new development.
- Addressing residual flood risks.
- Evacuation plans and alert systems agreed with emergency services.
- Requirements for Sustainable Drainage Systems (SuDS) and other green infrastructure features to reduce surface run off and act as natural flood storage measures.
- Ensuring that new development does not increase water inputs into sewer system and overland run-off
- Assessment of allocation sites considering the various flood risks now and in future via a Strategic Flood Risk Assessment.

2.2 Feedback received from consultation

There were a wide variety of comments covering a broad range of issues and concerns and these are summarised below:

- Growing number of gardens being replaced by hardstanding resulting in increased run-off and localised flooding.
- Development of brownfield sites should be prioritised. Need to preserve the green spaces we do have and use nature-based solutions to assist with natural flood mitigation.
- Trees and hedges should be planted riverside to help contribute to reduce flooding
- Prevent building developments on floodplains.
- Economic and social costs of flooding to buildings are ignored and not taken into account when balancing the possible benefits of building on the flood plain or in flood prone areas.
- Policies need to be flexible and proportionate. The floodplain means that realistically a lot of large areas of open space cannot be built on, however an absolutist approach should be avoided, and it be recognised that there are trade-offs.
- Risk to transport infrastructure from flooding during periods of intense rainfall. Also has consequences for walkers and cyclists due to insufficient drainage systems resulting in overflows.
- Need to promote upstream solutions rather than big infrastructure schemes such as OFAS which will only move the problem downstream.
- Emphasis on the need to build flood resilient buildings (similar to Scottish Building Standards which are more stringent).
- Underestimated the degree of flooding we might expect with climate projections in the future.
- Better protection for current properties needs to be provided and there should be no further building on land near rivers that show even low signs of flooding today.

- Avoiding flood risk and building in resilience can be delivered through land use allocations that are appropriate to flood risk levels in each particular location.

2.3 Updates to national/local policy context since 2021 issues consultation

The 2021 Flood Risk background paper set out the key national policy context for this topic and is still of relevance for the purposes of this background paper. However, since that paper was written, the final version of the NPPF (2021) has been published. The main differences are that paragraph 161 part c, specifically references that improvements to green infrastructure and other forms of infrastructure can provide opportunities to reduce the causes and impacts of flooding. Paragraph 167 part b, now states that as well as development being resistant and resilient to flooding, in the event of a flood, buildings should be able to be quickly brought back into use without significant refurbishment. Thirdly, a separate Annex 3 has been provided which classifies flood risk vulnerability.

2.4 How are current Local Plan 2036 policies performing?

Analysis from 2020/21 Authority Monitoring Report (AMR)

At the end of 2021, the Council published its first AMR reporting upon performance of policies within the Local Plan 2036 since its adoption in 2020. Whilst there was limited monitoring data, as the policies had not been in force for a full year upon writing, the AMR was able to present some analysis in relation to the key policies that addresses flood risk and drainage – policies RE3 (Flood risk management) and RE4 (Sustainable Drainage, Surface and Groundwater).

Analysis in the AMR highlighted that all applications that were applicable in Flood Zone 2 and Flood Zone 3 submitted the necessary site-specific Flood Risk Assessment (FRA) as required per Policy RE3. Of the applications that were permitted which would result in an increase in impermeable surfacing within Flood Zone 3, 88% of these were some form of extension to an existing development and 8% was for the demolition and replacement of existing structures. Two applications were refused, in part because they did not conform with Policy RE3. One was refused because the development comprised of more vulnerable development within an area designated as falling within Flood Zone 3b (functional flood plain) and the other application was refused because it was situated in a high flood risk area and was again for a more vulnerable use. In addition, the latter application was deficient in its failure to provide a comprehensive flood warning and evacuation plan. According to the Environment Agency's (EA) monitoring data for this period, no applications were permitted which went against outstanding objections from the EA.

In terms of Policy RE4, six applications were refused, partly on the basis of their non-compliance with this policy. Some of the reasons included applications not being accompanied by the necessary information on how the site would be drained using SuDS or that insufficient drainage or surface water management details had been provided. One proposal would also place future occupiers at an unacceptable risk of flooding and would result in a reduction in flood storage, which would increase the existing risk of flooding.

Summary of any key feedback from Development Management and Specialists discussions

Discussions with members of the development management team, who have experience of applying the existing policies, as well as specialists within the Council have highlighted several wider issues for the new Local Plan to address including:

- More clarification around what key points/data, (e.g. flood levels) are required for site specific FRAs – some provide a full one, whilst others provide very little detail
- More guidance for minor development should be incorporated into the policy as there are situations where objections are received but the application is approved because it's permitted or minor development.
- Definition of 'built footprint' requires more clarity together with the true intention of allowing development in Flood Zone 3b, i.e. idea was mainly to facilitate reuse of buildings, rather than more extensive redevelopment e.g. allowing buildings to be reorganised etc.
- Policy needs to be clearer on the requirement of what a safe access/egress is
- Clarify SuDS/ risk of flooding connection – i.e. separate forms of flood risk
- SuDS guidance needs to be made a little more robust – should try to give a better steer towards incorporating SuDS that are multi-functional, as opposed to relying on hard solutions like tanks under the ground wherever possible.
- More guidance for drainage should be included with expectations perhaps set out in the appendix

Early discussions have also taken place with the Environment Agency (EA) to ascertain whether they are still comfortable with our approach of allowing development on brownfield land in Flood Zone 3b. The EA agreed that if the evidence base supports this approach, then this is something that can still be considered. However, like the current policy in the Oxford Local Plan 2036, this will only be supported in specific circumstances and will not be a carte blanche for all development - national policy will still need to be followed but there is some flexibility if the approach can be justified.

We also acknowledged the need for a new SFRA to be produced to underpin the Local Plan, and that in advance of this work being produced we would initially be relying on the work produced for the Local Plan 2036 in the short term, with the intention of revisiting any analysis once an updated assessment was available. The EA were comfortable with this in the short term, however, the EA did reiterate that an up-to-date SFRA is needed as soon as possible.

2.5 What does all this mean?

Addressing current and future flood risk remains a key priority for the new Local Plan. The ongoing impact of climate change include projected wetter winters and increased incidences of intense rainfall events is likely to exacerbate this risk in the future, with a variety of negative consequences for property, economy and ecosystems as well as human health. Although there is a need to strike a balance to ensure that other objectives such as the correct amount of housing, infrastructure etc. are also achieved, it is imperative that any new development is directed to areas with the lowest risk of flooding first.

Our existing policy is performing fairly well according to feedback from specialists and the EA. Our approach to flooding also benefits from national policy providing a strong framework for addressing flooding, much of which can be applied directly to Oxford. There are however some areas where relying on national policy alone is not appropriate, as it does not take account of the local circumstances of Oxford's flood risk context, particularly in relation to extensions. As the Local Plan 2036 policy has been put into use, some weaknesses and

lack of clarity in how to apply the policy have also surfaced, which the Local Plan 2040 could address.

We have developed a set of options which we think can help in addressing flood risk and drainage.

3. Formulating policy options for consultation

The remainder of this paper discusses some of the key issues that we have been considering as part of developing the policy options sets which are laid out in the main preferred options consultation document.

Strategic Flood Risk Assessment

Our current Strategic Flood Risk Assessment (SFRA) was published in 2017. In order to ensure that the SFRA is still relevant to best practice and the latest available knowledge, there is a need to undertake a new assessment to ensure that it takes account of the latest climate change predictions and modelling published at the time of the study. Climate change predictions are constantly being updated and refined and new predictions can have a notable effect on the picture of risk which we need to be considered as we refine our policies (particularly our site allocations).

Work on a new SFRA was initially to be produced jointly with our neighbouring authorities through the Oxfordshire Plan 2050. However, as the Oxfordshire Plan is no longer being taken forward, we will have to commission our own SFRA in order to understand the impacts of the latest modelling including climate change predictions – this will need to take place over the coming months and in advance of the full draft Local Plan consultation in 2023.

In addition to using the latest available modelling data, the SFRA will assess the risk from all sources of flooding as well as cumulative impact that development or changing land use would have on flooding. It will also identify opportunities to reduce the causes and impacts of flooding and identify any land likely to be needed for flood risk management features and structures. The SFRA will provide an evidence base to allow us to carry out a sequential test for site allocations to locate these in the lowest areas of flood risk wherever possible. It will also be necessary for informing a more detailed assessment (SFRA level 2) of any allocations that need to be located in areas of higher flood risk to ensure development can happen in a safe way, historically this has been necessary in the city due to the lack of available sites that can meet our housing needs within areas of lowest flood risk.

Approach to flood zone 3b (functional flood plain)

The city is highly constrained by areas of flood risk, with a significant area comprising flood zone 3 – this highest risk of flooding. Flood zone 3 includes an area that is functional flood plain, referred to as flood zone 3b. We would not usually accept development within this area due to the high risk of flooding along with the loss of flood storage that this would incur, and our proposed approach is to continue to follow national policy and set out that development of greenfield sites within 3b would not be permitted.

However, historic development has happened within the flood plain and has led to a number of areas of brownfield land existing within 3b. Current policy in the Local Plan 2036 was formulated recognising that these brownfield sites can provide more sustainable locations for development than greenfield sites and that refusing further development could allow these

areas to deteriorate whilst ignoring the opportunities for thoughtful redevelopment that can actually reduce flood risk in future. Our proposed options for the new Local Plan would broadly continue in this mindset but do include two slightly different approaches to these previously developed areas within flood zone 3b.

One option, option e proposes that limited development could be allowed, but only where the built footprint of the site is not increased and where the flood risk is demonstrably decreased through careful design. The alternative option (option f) includes no restriction on the built footprint, if it can still be demonstrated that the flood risk is decreased through careful design. This option would therefore potentially allow for a greater densification of the site compared to option e. In both options, proposals would be refused if they would conflict with safe access and egress requirements.

As set out above, the preferred approach for greenfield sites in Flood Zone 3b would follow national policy setting out that new development would not be permitted there. An alternative option (g) goes further and indicates that development of greenfield sites in Flood Zone 3a could be prevented but with specific exemptions (e.g. for allocated sites). However, it is considered that this policy approach would not be the right response for Oxford, as it could overly restrict opportunities for utilising land for other uses (such as housing) which could otherwise come forward in a way that is designed to be safe from flooding whilst not exacerbating flood risk elsewhere.

Sustainable Drainage Systems (SuDS)

National Policy is fairly silent on SuDS with the exception of requiring it on large developments. We feel that more detail can be added in the new Local Plan, especially in regard to the design of SuDS and have developed a set of options to address this (Policy Option Set G8). In Oxford, a significant amount of development comes from minor planning applications, and we recognise that there is an opportunity to further help mitigate for flood risk by requiring SuDS on all new developments, including minor schemes as per option a. This could have a significant positive impact, especially if considering the potential cumulative effect that a lot of small developments could have on increasing overall flood risk in Oxford.

In addition to having SuDS on all new developments, we are also more explicit about encouraging green SuDS, that incorporate natural features, rather than grey (e.g. tanks underground). SuDS that incorporate natural green features have the benefit of bringing a wider range of additional benefits to place-making, such as making spaces for biodiversity and making spaces that are more pleasant for people. We therefore suggest that a hierarchical style approach to SuDS design should be incorporated, prioritising green SuDS and maximising multi-functionality. More details on this can be found in the background paper for Green Infrastructure which illustrates the benefits of multi-functionality, which although a priority, are far wider than just reducing flood risk.

Other specific issues to provide further clarity on

Policy Option Set G7 (Flood risk) also suggests some more specific policy approaches that address specific issues to Oxford and which require more detail in local policy than is presented in national policy alone. These include:

- Extensions
- Basement flats
- Culverting watercourses

Applications for extensions are a regular occurrence in the city, at present there can be a lack of clarity over what is expected on these types of applications to ensure that flood risk on a site is addressed satisfactorily. Option b sets out that for extensions proposed in Flood Zone 3b, we will set out some key principles/ requirements within policy that will need to be met to address flood risk before these will be permitted. This should mean greater certainty as to what is expected.

Basement flats are addressed in option c. Our stance is that this type of self-contained accommodation comes with unacceptable levels of risk to occupants where they are proposed in an area of flood risk. As such, the option reinforces the requirements of national policy and makes more explicit that self-contained basement flats will not be acceptable in areas at risk from fluvial flooding.

Option d addresses culverting of open watercourses and sets out that this will not be accepted. Culverted watercourses can introduce additional flood risk in the local area due to the potential for throttling water flows during heavy rainfall events, as well as introducing additional risk of blockages during storm events that can exacerbate flooding. This approach would also help to preserve the natural features of our watercourses, which are important habitat and corridors for wildlife and people, thus ties in with the approaches set out under the green infrastructure policies (protecting green and blue features across the city for the multi-functional benefits they bring).