

Chapter 4 - A Green Biodiverse City that is Resilient to Climate Change

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Glossary

Biodiversity - A collective term for the variety of wildlife and flora that are present in a particular area. More species and greater variety is generally reflective of higher biodiversity, this can be important for ensuring greater resilience to pressures such as climate change and pollution.

Biodiversity net gain - Biodiversity net gain is a strategy to develop land and contribute to the recovery of nature. It is a way of making sure the habitat for wildlife is in a better state than it was before development.

Climate Change Adaptation - A process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities.

DEFRA biodiversity metric - The biodiversity metric is a habitat based approach used to assess an area’s value to wildlife. The metric uses habitat features to calculate a biodiversity value. Use of the metric is required to demonstrate net gain requirements in line with the Environment Act legislation.

Ecological network - this is one component of the overall green infrastructure network and where the term is used in the Local Plan, this specifically relates to the collection of spaces in the city which play a particularly vital role in supporting ecology and have been designated for this primary purpose.

Ecosystem services - The direct and indirect goods and services that nature contributes to our health and wellbeing, including benefits like food production, water quality, regulation of floods, resilience to soil erosion, as well as more intangible benefits like stress reduction and contributing to our sense of place and character of the city.

Green Infrastructure - A network of spaces and features including parks, playing fields, woodland, allotments, private gardens, green roofs and walls, street trees. The term also incorporates 'blue infrastructure' such as streams, ponds, canals, and the rivers.

Multi-functional - In the context of green infrastructure, the term multi-functional means the multiple benefits that features and spaces can provide simultaneously, often contributing to better health and wellbeing for people and the natural environment (e.g. supporting mental/physical health; providing space for biodiversity; climate resilience etc). Some types of GI may provide more benefits than others.

Native planting - A native plant is one that has evolved naturally in its location without direct human intervention, as opposed to species that have not existed historically in an area but are introduced by human activities.

Residual risk - Residual risk is the risk that remains after efforts to identify and eliminate some or all types of risk have been made.

Resilience - Our ability to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner. When talking about climate resilience such events could include flash flooding or intense heatwave events.

Site of Special Scientific Interest - Areas identified by Natural England as being of special interest for their ecological or geological features. Natural England is the government's advisor on the natural environment.

Site specific flood risk assessments (FRAs) - A study that determines how a proposed development will manage flood risk from all possible water sources to the site in question.

Special Area of Conservation (SAC) - Special Areas of Conservation are areas that have been designated at a European level as important for nature conservation.

Sustainable Urban Drainage Systems (SuDs) - Sustainable Urban Drainage Systems are a sequence of water management practices and facilities designed to drain surface water and protect against flooding. These include porous roads, high-level road drainage, swales, soakaways, filter trenches, wet and dry attenuation ponds and ditches. SuDS helps mimic natural drainage processes and can provide benefits in terms of sustainability, water quality and amenity.

4.1 The policies set out in this chapter address the important need for protecting and enhancing a network of green and blue spaces across our city for the multitude of benefits they provide for our health and wellbeing and the wider natural environment. This includes conserving those spaces that are particularly valuable for our wildlife and flora but also making new space for nature at a variety of scales supporting nature recovery—from smaller features in new development to wider habitat creation in line with the objectives of the Environment Act 2021.

4.2 Together, these policies also form a key part of the Local Plan's strategy for maintaining and strengthening the city's resilience to climate change, by which we mean ensuring that Oxford and its inhabitants are adapted to withstand the risks arising from the changing climate, and better able to recover when hazards like flooding or heatwaves occur. There is intrinsic

overlap between the policies in this chapter, however they are divided into three subsections addressing the topics of green and blue infrastructure; biodiversity and the ecological network; as well as flood risk and climate resilient design.

Green and Blue Infrastructure

4.3 A key feature that contributes to the special character of Oxford is its close relationship with the natural environment that encircles and permeates the city. The city benefits from a wide range of green spaces such as parks, natural and semi-natural spaces, historic sites, floodplains and sites of importance to biodiversity and nature conservation. There is also an extensive network of more than 248,000 trees of varying age, species and quality that cumulatively comprise the 'Urban Forest' and which provide a myriad of social, environmental and economic benefits. Equally, blue infrastructure is interwoven and interlinked with these areas, enhancing the experience and function of it. The key waterways are the River Thames, River Cherwell and the Oxford Canal, but there are also many brooks and streams, such as Bayswater Brook and Northfield Brook, which form part of wildlife and movement corridors.

4.4 Green and blue infrastructure performs a vital role in supporting the health and wellbeing of our residents and is particularly important for its 'multi-functional' role, providing a range of services and benefits at the same time for the local area. These benefits include space for recreation and social interaction; food production; habitat for biodiversity; mitigating flood risk; a place of respite in heatwaves; and ameliorating poor air quality. This wide range of outputs and benefits is sometimes referred to as 'ecosystem services'. But our green and blue infrastructure faces a variety of pressures, from those arising from the need to accommodate new development in a constrained city; to the recreational impacts that occur as people use these spaces, as well as from climate change and pollution.

4.5 The approach for the Local Plan recognises the multi-functional benefits of our GI network and seeks to ensure that we protect a range of spaces and features for the benefit of the city now and into the future, where possible enhancing these and providing new features to strengthen that network. There are three policies that relate directly to the provision of green and blue infrastructure in the city. Policy G1 sets out the protections on the various features and spaces that make up the green and blue infrastructure network in the city, including green spaces and individual features such as trees and hedgerows, which applicants will need to consider when bringing forward development in the city. Policy G2 sets out how enhancement of existing green infrastructure and provision of new green infrastructure should be delivered within development, which will also be of relevance where applications need to re-provide features or spaces to address any losses as required under policy G1. This policy also sets out expectations for aftercare in terms of ongoing management and maintenance to ensure successful establishment. Meanwhile, Policy G3 includes more specific requirements around providing green, natural surface cover on specific types of development through use of the Council's Urban Greening Factor policy tool.

Protection of Green Infrastructure

Green and Blue Infrastructure Network

Green Spaces in the city will have a varied range of functions. Of great importance is the way these spaces function together as a network. Connections between these features means green spaces can act as movement corridors for both people and nature. The spaces to be most strongly protected are those that provide a multitude of functions, that are most important to the local area and also those that need to be protected in situ to avoid fragmenting linkages. Blue infrastructure is particularly important in this linking role, such as the rivers Cherwell and Thames and their embankments and surrounding green spaces, as well as smaller streams and watercourses found throughout the city. These dynamic assets serve as important blue corridors that not only play a role in linking up natural spaces within Oxford, but also more widely throughout the county, as well as contributing to flood resilience and general wellbeing.

The Local Plan seeks to protect all public and private green infrastructure in the city from inappropriate development and ensure that, where it comes forward, development mitigates any potential impacts. However, the protection in this policy recognises that particular spaces and their existing location are especially fundamental to the functioning of a strong GI network. The hierarchy of GI spaces is as follows:

1. **Core Green and Blue spaces** – designated at highest level in hierarchy due to their fundamental role in supporting the city-wide network through wildlife habitat and corridor functions, flood storage, intensity of use and strength of heritage or other local value, which means they are not easily moved elsewhere. It is considered that these spaces cannot be removed/reprovided sufficiently without compromising the overall character and function. Some spaces are subject to separate policy protection to reflect the additional considerations that apply here (namely ecological designated sites). *Designated G1A on policies map.*
2. **Supporting Green and Blue spaces** – These spaces play an important role in enhancing the network and its overall function, and their loss will be resisted; however there is more opportunity for re-provision. As such change of use which is accompanied by re-provision to another part of the network, ideally onsite, to the same standard or higher will be accepted. Spaces have only been identified as supporting green and blue spaces if they are clearly carrying out green infrastructure functions; therefore, it is considered to be unlikely that any of these spaces could be found to be surplus, although it is accepted that there could be changes over time. Additional considerations for proposals affecting these types of spaces are highlighted below. *Designated G1B on policies map.*
3. **All other Green and Blue spaces** – these spaces also support the overall network, as well as often helping to enhance the more urban areas of the city by breaking up the built environment with pockets of natural amenity, but are typically smaller and more fragmented, playing a reduced multi-functional role as a result. Change of use will be accepted where it is accompanied by sufficient re-provision, ideally onsite, and to the same standard or higher, or if it can be demonstrated in the application that current provision is surplus to requirements. *Other green and blue spaces are not identified on the policies map.*

Additional protections apply to land designated as Green Belt (also identified on the policies map) which is primarily focussed on preventing the spread of development and the coalescence of urban areas helping to protect the historic setting of the city. Where applications are proposed within green belt, these will be determined in accordance with

national policy.

Additional considerations for proposals affecting particular types of spaces

It is important to recognise that there may be other specific contextual considerations relating to the type of open space which need to be taken into account in proposals affecting open spaces, aside from level of designation within the network. These are expanded upon in the Green Infrastructure and Biodiversity TAN. These considerations will relate to the particular primary function a space is providing and will be of relevance when determining whether a site is 'surplus to requirements', but also in identifying the qualities and sensitivities that enable these spaces to function as they do, which any design would need to take into account. As well as making reference to an up-to-date GI or open space study, proposals should consider the following when demonstrating compliance with Policy G1, regardless of where the site sits in the hierarchy:

- **Spaces for outdoor sport including pitches** - where relevant, particularly when demonstrating a proposal to reprovide facilities, applicants will have to demonstrate that alternative sites are equally available locally, review any relevant information within the Council's latest Playing Pitch Study, and liaise with Sports England and the City Council's Active Communities team where necessary. Consideration should be given to the types of sports that the space provides for currently, whether this can be accommodated elsewhere, or whether alternative sports might better suit the local community.
 - **Allotments and other spaces for food growing (e.g. community orchards)** – where relevant, particularly where a proposal could reduce provision, applicants will have to demonstrate consideration of the current provision of allotments and other food growing opportunities in the local area, including review of up-to-date waiting lists, quality/quantity of plot provision and supporting facilities. Disposal of allotments requires application to the Secretary of State and is only consented in exceptional circumstances.
 - **Churchyards and cemeteries** – where relevant, will have to demonstrate consideration of the historical context of many of these areas and their role as a setting for irreplaceable heritage assets and broader cultural/social significance.
- Parks and gardens, accessible greenspace and amenity greenspaces** – these spaces often play a role in supporting people to socialize, take part in informal recreation (particularly where facilities like children/youth play and outdoor gym equipment are present), and generally provide an escape from the urban environment. Where relevant, applicants will have to demonstrate consideration of how any loss can be mitigated, especially if this is located in an area which already suffers from a deficit of such spaces according to an up-to-date green infrastructure/open space study.

Another important element of the GI network is that of private gardens, which make up a considerable amount of land use within the city. Private gardens offer valuable opportunities for private amenity and socialising and can host a range of green and blue features which support the functioning of the wider network by providing additional space for wildlife, as well as contributing to resilience to climate change. As with other spaces, they make an important contribution to the fabric of the urban realm injecting pockets of natural features that support the amenity of the surrounding public realm. Many of these same characteristics extend to other non-domestic garden settings, such as those

associated with academic buildings (schools, colleges and universities), as well as other non-residential uses like offices and industrial buildings.

Existing green infrastructure features

Trees and hedgerows – Aside from open spaces, the network is also enhanced by a number of individual features such as trees and hedgerows which are spread across parks, street planting, institutional and municipal land, as well as private gardens and other spaces. Of particular value are ancient woodland, ancient/veteran trees and important hedgerows (as defined by the Hedgerow Regulations 1997), which are assigned a high level of protection through national policy. A small proportion of trees benefit from TPOs, or protection through conservation areas, but this is not the only determiner of quality/importance and many have not been designated with formal protection though may be of a similar or higher quality with varied contributions to the area (e.g. of value for amenity, biodiversity or as setting of heritage assets). A varying level of protection and associated requirements expected in order to justify any loss are assigned through the policy. Any strategy for a site where trees are present should consider their value with regard to these broader benefits, making use of best practice criteria such as the BS.5837:2012 standards or future equivalent. *Individual trees are not identified on the proposals map.*

Other features – A range of other individual GI features support the GI network and provide localised benefits to the spaces where they are found particularly in supporting amenity and biodiversity. These include features like ponds, smaller streams, green roofs and walls, as well as hedges, and wild patches of vegetation. As well as in public spaces, these features can be particularly important to the amenity of domestic/institutional gardens (such as gardens associated with private dwellings, care homes, schools and the Universities/Colleges).

Policy G1 – Protection of Green Infrastructure

Green and Blue Infrastructure Network

The City Council will seek to protect the GI network for the many and varied benefits it offers. The hierarchy of GI spaces and the policy approach for each level of the hierarchy is as follows:

G1A: Core Green and Blue spaces

Planning permission will not be granted for development that would result in loss of, or harm to, the protected spaces identified as Core Oxford Green and Blue spaces and the important green network function they provide. These spaces are designated G1A on the proposals map.

G1B: Supporting Green and Blue spaces

Planning permission will only be granted for proposals which affect Supporting Green and Blue spaces where any harm/loss is mitigated by ensuring sufficient re-provision, ideally onsite, and to the same standard or higher. These spaces are designated G1B on the proposals map.

G1C: All other Green and Blue spaces

Planning permission will only be granted for proposals which affect all other Green and Blue spaces where any impacts are mitigated by ensuring sufficient re-provision, ideally onsite, and to the same standard or higher, or if it can be demonstrated in the application that current provision is surplus to requirements.

Residential Garden Land

Planning permission will be granted for new dwellings on residential garden land provided that:

- a) the proposal responds to the character and appearance of the area, taking into account the views from streets, footpaths and the wider residential and public environment; and
- b) the plot to be developed is of an appropriate size and shape to accommodate the proposal, taking into account the scale, layout and spacing of existing and surrounding buildings, and the minimum requirements for living conditions set out in Policies HD11, HD12 and HD13; and
- c) requirements are met for biodiversity as set out in Policy G4, greening factor as set out in Policy G3 as well as requirements for protection of existing green infrastructure features, as set out below.

Existing green infrastructure features

Planning permission will not be granted for development resulting in the loss or deterioration of ancient woodland or ancient or veteran trees and important

hedgerows except in wholly exceptional circumstances or there is a suitable compensation strategy in place (as per Government Guidance¹).

Planning permission will not be granted for development resulting in the loss of other trees, except in the following circumstances:

d) it can be demonstrated that preservation of the trees is not feasible which should include:

i. evidence of testing of practical alternative site layouts that might preserve the tree(s) where possible; and

ii. Evidence that loss or other impacts to any tree(s) on the site has been minimised where possible, and guided by BS.5837:2012 recommendations or its future equivalent;

e) where tree retention is not feasible, any loss of tree canopy cover should be mitigated by the planting of new trees or introduction of additional tree cover (with consideration to the predicted future tree canopy on the site at maturity following development) to achieve a minimum of no net-loss of tree canopy cover; and

f) where loss of trees cannot be mitigated by tree planting then alternative forms of green infrastructure should be incorporated that will mitigate the loss of trees, using the Urban Greening Factor to demonstrate no reduction in GI score as a minimum (as well as meeting any other requirements as set out in policy G3).

Planning permission will not be granted for development that results in the loss of other green infrastructure features such as hedges or ponds where this would have a significant adverse impact upon public amenity or ecological interest. If it is demonstrated that their retention is not feasible, then their loss must be mitigated in accordance with other relevant policies, in particular Policy G3.

Enhancement and provision of new green and blue features

Ensuring the provision of green and blue infrastructure features on new development that provides *multi-functional* benefits for health and wellbeing of people and wider environment should be fundamental to the design process. This might include providing enhancements to the existing green/blue features on a site, as well as providing entirely new features and spaces.

Choice of green features should be guided by the context of the site but could include trees, hedges and pollinator friendly planting as well as blue features like ponds and rain gardens. Applicants are encouraged to incorporate green/brown roofs into the design of the development as well as greening facades through use of green walls. On larger sites, there may be opportunities to incorporate tree-lined streets and multi-purpose green drainage features (SuDS) that can provide space for play and recreation, protection from heat, and also act as flood storage at times of heavy rainfall. By ensuring that the choice of species, their location and arrangement within the site and ongoing management is tailored towards maximising such benefits from the beginning, applicants can ensure the

¹ <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions>

most successful and long-lasting design outcomes for the lifetime of the development.

Beyond multi-functionality, in demonstrating that green infrastructure considerations have played a fundamental part of the design process, it is important that selection of new features has been guided by local context and opportunities on the site as well as in the surrounding area. In practice this could mean that:

- Where new open space is provided, applicants have tailored the type of provision to address existing needs or deficiencies in access locally. For example, by providing space for food growing where residents might not have access to allotments in the local area or incorporating play features for younger people.
- Where there is an opportunity to strengthen links between green spaces, particularly ecological sites, the applicant has incorporated features like lines of trees/hedges to support these linkages and enhance the network, or perhaps taken opportunities to open up and enhance access to rivers and streams including their banks.
- Where the site is in proximity to busy roads that could cause noise or air pollution issues, green infrastructure such as trees and wild meadows has been used as a buffering feature to improve amenity for residents and reduce their exposure to ill effects.
- Where a site is particularly urbanised and lacking in green features, including an abundance of hard, artificial surface cover or lack of canopy cover, the new design has responded to these conditions and paid particular focus to unsealing surfaces where possible and incorporating additional natural surfacing, including on walls/roofs, as well as increasing canopy cover.

Larger developments will be expected to include on-site public open space such as small parks which should have a mix of uses tailored to the needs of occupants and the local area, for example, a nature area, seating, a playground and kick-about area, or areas left aside for community food growing. This provision can be important for reducing pressures on existing green spaces in the local area when new development brings in more residents. In exceptional circumstances, where on-site provision is not achievable, opportunities should be sought for enhancing existing public open space in the vicinity of the development to help accommodate any additional pressures arising in liaison with the Council, such as by providing additional recreational facilities on a site where existing provision is lacking. Developer contributions and/or legal agreement may be sought to deliver such outcomes where these are identified as important for the sustainable delivery of a scheme.

Additional greening requirements in certain situations

Whilst this policy sets out general requirements for new green infrastructure, particular types of development and development on allocated sites will be subject to additional bespoke requirements that are set out in complementary policies in the Local Plan. On qualifying sites, applicants will need to make use of the Council's Urban Greening Factor to quantify changes in green surface cover proposed in their application and to meet specific targets for provision, and reference should be made to **policy G3** where applicable. Meanwhile, on allocated sites, the Council has assessed existing green infrastructure provision and future needs in advance of allocation through the Local Plan, and applicants are expected to address any detailed requirements for green infrastructure as set out in the relevant allocation policy for that site (**chapter 8**).

Maintenance and management arrangement

Regardless of the type of green infrastructure provided by new development, it is important that design has considered the ongoing maintenance and management of these features to ensure future success. For example, new trees require ongoing watering and care for the first few years after planting to ensure successful establishment as well as periodic pruning and surveying throughout the rest of their life. Establishment periods for green infrastructure like trees are also coming under increasing pressure as climate change brings longer periods of hotter, drier weather that can put new planting under stress, particularly in more urban areas. The City Council will require agreement of maintenance and management arrangements where appropriate to ensure new features are successful in the long term.

Policy G2 – Enhancement and provision of new Green and Blue features

Planning permission will be granted for proposals that include a variety of green infrastructure features as a fundamental component in the design of new development. Where the site includes existing GI features, proposals should seek to enhance these, prioritising opportunities to improve linkages between features in order to strengthen connections with the wider green infrastructure network including beyond the boundaries of the site. Features should be highlighted clearly within the Design and Access Statement where required and/or on landscape/elevation plans, which should also include details of how the following requirements have been met where relevant.

The selection of green/blue features, or enhancement of any existing features, should be tailored to the specific context of the site and surrounding area. The proposal should set out clearly how GI has been designed to secure multi-functional benefits which contribute to the following, where relevant:

- a) Public access
- b) Health and wellbeing, including recreation and play
- c) Biodiversity
- d) Creating linkages with surrounding green infrastructure (including the countryside)
- e) Addressing climate change (including carbon sequestration; reducing flood risk; providing sustainable drainage; reducing overheating and promoting urban cooling)
- f) Enhancing appearance and character/sense of place
- g) Enhancing the setting of heritage assets
- h) Connectivity of walking and cycling routes
- i) Opportunities for edible planting or community food growing

Opportunities to enhance blue corridors

For proposals on sites incorporating or located adjacent to watercourses, opportunities should be sought through careful design and landscaping to re-naturalise the water courses where possible, including restoration of the bankside and instream habitats and leaving an undeveloped buffer zone of at least 10 metres width. In some cases, this may require reinstatement of the buffer zone on previously developed land.

New public open space

In situations where the proposal relates to replacement provision that is mitigating losses elsewhere, this will need to be demonstrated to be equally or more accessible by walking, cycling and public transport to local users of the existing site where relevant.

For residential sites of 1.5 hectares and above, new public open space of 10% of the area covered by residential development is required. For mixed-use sites, the area of residential use should be used for that calculation.

Maintenance/management arrangements

Appropriate maintenance/management plans should be organised as part of the design/construction process. Applicants will be required to replace any failed features for the first five years post-completion, unless agreed otherwise with the Council, and this will be secured through planning condition. Where appropriate, applicants will be expected to enter into a legal agreement to ensure that any new public space is properly maintained, by means of a financial contribution to the City Council.

Provision of new Green and Blue features – Urban Greening Factor

Overuse of artificial, impermeable surfacing materials like concrete, artificial lawns and tarmac on new development can have a range of negative impacts for the environment and the people that go on to utilise these spaces. Conversely, natural, green surface cover can promote multiple benefits, from providing space for biodiversity and mental/physical health benefits for people, as well as promoting climate resilience through slowing and storing rainwater during intense downpours and promoting cooling during high heat events.

The Urban Greening Factor (UGF) assessment is a policy tool that seeks to quantify and drive onsite urban greening on new development, with particular attention on the naturalness of surface cover. The UGF assigns weighted scores to different types of surface cover provided on a site based upon the variety of environmental benefits that they provide the site and its occupants.

The assessment process requires applicants to assess and quantify green infrastructure on their site prior to developing the area to establish a baseline for the site. This process is then repeated to assess the green infrastructure coverage which is proposed in the design of the new development to be provided post-development.

This policy sets out the minimum conditions for urban greening that major development will need to meet in Oxford, which are:

- a requirement of no net loss in baseline score of the site through the development process; and
- ensuring all new development also meets the minimum standard of provision in the amount of natural surface cover expected on sites in the city where the current baseline is below this.

The requirements of this policy and the UGF tool are not intended to be used in place of other policy requirements, such as submission of the Department for Environment, Food and Rural Affairs (DEFRA) biodiversity metric to demonstrate biodiversity net gain, or the need for landscaping plans. There will however be natural crossover between these considerations and the assessment process for this policy can supplement/contribute to meeting other relevant policy requirements where relevant. Whilst the use of the UGF assessment is only required of major development through the policy, other types of development are encouraged to use the tool to calculate change in green surface cover in support of their application where possible.

Policy G3 – Provision of new Green and Blue features – Urban Greening Factor

An appropriate proportion of natural green surface cover – which may be comprised of both existing and newly installed features – will need to be demonstrated on certain proposals (as set out below) and evidenced via submission of a completed Urban Greening Factor (UGF) assessment.

Applicants are expected to assess and submit the baseline score for the site pre-development, prior to any site clearance, as well as the proposal as built/post-development. The as built/post-development score required for development proposals will need to meet the following policy criteria:

Major development: proposals should demonstrate that there would be no reduction in baseline score and achieve a minimum score of:

- **0.3 for residential or predominantly residential schemes**
- **0.2 for predominantly non-residential schemes**

All other forms of development – with the exception of householder applications – are encouraged to demonstrate how they have undertaken greening of their site through use of the UGF tool, though this is not mandatory.

Along with the submitted UGF assessment, all greening features proposed for the development and used in the calculation of the UGF score should be clearly demonstrated on associated landscaping/elevation plans in the application.

The adopted calculation formulae and the factors for various surface cover types are outlined in Appendix 4.1.

Biodiversity and the ecological network

4.6 Oxford benefits from a concentration of rare and valuable habitats that are important refuges for a variety of flora and fauna, including lowland hay meadows, calcareous grassland, alkaline spring fen (among other types of wetland) as well as pockets of woodland. Their ongoing protection is important as many species and habitats across the country continue to experience significant losses due to a range of pressures including from changing land use, pollution and climate change. Alongside the broader green infrastructure policies set out earlier which will make an important contribution to supporting biodiversity in the city, the Local Plan includes several more specific policies that seek to reduce and mitigate the pressures on biodiversity in Oxford.

4.7 Policy G4 and G5 set out requirements for biodiversity net gain and additional onsite ecological enhancements that are intended to support increases in biodiversity in and around the city. Policy G6 sets out specific protections for Oxford's most important local and national designated ecological sites. These sites are an important component of the wider Green Infrastructure network referred to in policy G1 but are subject to additional considerations which reflect their specific role in supporting biodiversity now and in the future.

Delivering mandatory net gains in biodiversity

Under the Environment Act 2021 all new planning applications must deliver biodiversity net gain, with an initial requirement of 10% expected to be introduced for large sites in January 2024 and small sites in April 2024². There are certain exemptions, including householder applications, to which this requirement does not apply. The 10% target should be considered as the minimum and applicants are strongly encouraged to explore options for delivery of net gain that exceeds this 10% wherever possible.

This policy sets out that in the first instance the expectation is that biodiversity net gain is delivered either onsite or within those areas of land within the city which have been identified as being most beneficial for supporting the wider ecological network to secure as much benefit as possible for nearby species and habitats. These areas have been identified in the Oxfordshire draft Nature Recovery Network (NRN), which has been prepared in advance of the Local Nature Recovery Strategy (LNRS) for Oxfordshire. Where these options are not possible, applicants should then look to provide offsite enhancements in another suitable location within the city, or else, more widely on NRN/LNRS sites in the wider county.

As a last resort, and where there is robust justification for why delivery of net gain cannot be achieved onsite or offsite in line with the above, purchase of biodiversity units from a habitat bank or statutory biodiversity credits may be accepted to meet net gain requirements, for as long as such scheme exists.

Applicants will be expected to demonstrate how the 10% net gain requirement will be met using the latest version of the Biodiversity Metric. The metric rules and principles set out by Natural England in the relevant User Guide must be adhered to, ensuring that all habitat categorisations and condition assessments are justified, with reference to the UK Habitat Classification System and the latest Biodiversity Metric Technical Supplement. Baseline and proposed habitat plans must also be submitted.

² Expected introduction dates based on central government guidance at time of writing.

Policy G4 – Delivering mandatory net gains in biodiversity

Planning permission will only be granted for development where it delivers a minimum of 10% biodiversity net gain, as measured by the latest version of the DEFRA Biodiversity Metric, unless exempted by national legislation or guidance. This must be achieved in all sections of the Biodiversity Metric relevant to that development (e.g. habitat, hedgerow, and river units). Delivery that exceeds 10% net gain is strongly encouraged wherever possible.

A copy of the completed metric spreadsheet must be submitted in support of planning applications. All metrics must be completed in line with the requirements set out in the relevant DEFRA User Guide, Technical Supplement, and best practice principles.

Applications are expected to prioritise the delivery of net gain onsite, or on land in Oxford identified for its ecological potential within the Oxfordshire Nature Recovery Network or the future Local Nature Recovery Strategy, unless this can be demonstrated to be unfeasible.

Where this is not feasible, delivery of off-site biodiversity enhancements will be expected to accord with the following hierarchy of preference:

- Elsewhere within the Oxford boundary
- Elsewhere within the Nature Recovery Network in wider Oxfordshire

Where offsite measures are proposed, these should focus on delivering high-quality priority habitats. Any offsetting proposed in alternative locations will be considered on a case-by-case basis.

Where it is robustly justified that the above cannot be achieved, purchase of biodiversity units from habitat banks elsewhere or statutory credits may be accepted as a last resort.

All onsite and offsite measures must be delivered through a biodiversity management and monitoring plan which must cover a period of at least 30 years in line with the national legislation requirements.

Enhancing onsite biodiversity in Oxford

The biodiversity net gain requirements required as part of the Environment Act, which are addressed in policy G4, focus specifically on habitat creation. This is one important way of supporting our wildlife; however, there are additional ways in which design can support biodiversity in the city, including targeted support for wildlife by providing resources such as food and shelter within the urban environment. These extra measures are particularly important where the 10% biodiversity net gain requirement cannot be delivered onsite.

As such, in addition to the habitat net gain required within policy G4, it is expected that applicants make space for nature by incorporating a range of ecological enhancements as

part of their development. Wherever possible, these features should be tailored to specific opportunities for supporting local species in the area, particularly priority species.

A minimum number of new ecological enhancements will be required on new developments. A list of enhancements have been identified in the Council's Ecological Points list as being particularly suitable to Oxford's setting which will need to be picked from and this is set out in appendix 4.2. In future, it is envisaged that this list may be updated and any subsequent versions will be published within the Technical Advice Note for Green Infrastructure and Biodiversity which should be referred to where appropriate.

After incorporating the 'mandatory' features that are required of all new development (including householder applications), the policy is flexible as to which enhancements can be chosen to reach the minimum points total for minors and majors allowing for selection to be tailored to the specific context of the site and surrounding area. Applicants should select a certain number of features from each of two 'pots' as set out in Figure 4.1. One pot relates to provision of shelter and movement features, whilst the other focuses on supporting landscape features. The ecological enhancements chosen to meet the points requirement of the policy will need to be clearly evidenced on associated landscape and elevation plans and/or within the Design and Access statement.

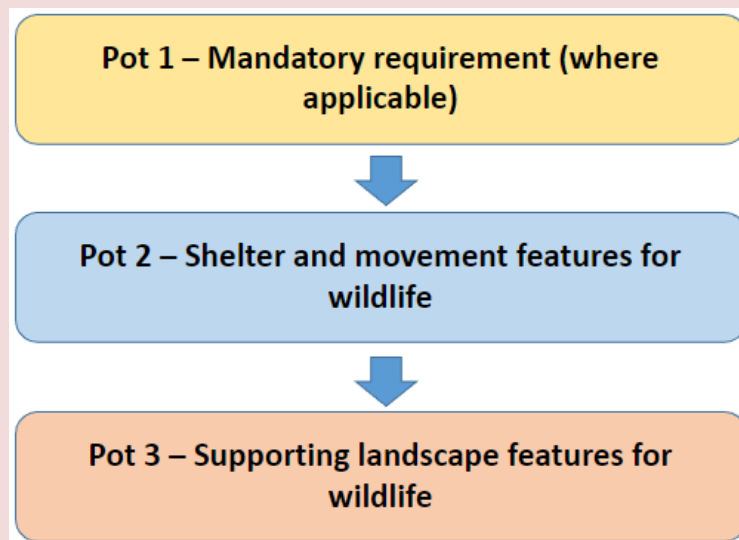


Figure 4.1: process for selecting ecological enhancements

Policy G5 – Enhancing onsite biodiversity in Oxford

All extensions and new-build development should seek to incorporate ecological enhancements into landscaping or building facades/roof spaces which are tailored to the priority habitats and protected species present within the site and surrounding area. Opportunities to create, expand, enhance or link ecological networks are particularly encouraged.

All new development must deliver a minimum number of ecological enhancements selected from the Council’s Ecological Points List to achieve the required point total. The number of points required is as follows:

Type of application	Pot 1 requirements	Pot 2 requirements	Pot 3 requirements
Householder	All mandatory features (where applicable)	N/A	N/A
Minor		1	1
Major		2	2

Seeking advice from a suitably qualified ecologist on the ecological enhancements selected is encouraged. The chosen measure(s) will need to be clearly highlighted on landscape and elevation plans and/or within the design and access statement.

In addition, all new tree and soft landscaping must incorporate an element of native planting, and where non-native planting is proposed this should comprise species beneficial to UK pollinators and/or chosen to be well-adapted to future changes in climate. Proposals incorporating invasive plant species will be refused.

All maintenance and management requirements of the proposed enhancements must be specified within planning applications and secured via planning conditions.

Protecting Oxford’s biodiversity including the ecological network

It is vital that existing biodiversity and features of ecological interest within Oxford are understood, and development proposals will need to be accompanied by sufficient ecological survey information to enable this. The extent and scale of survey effort required must be informed by the context of the site and appropriate ecological expertise. Where there is a reasonable likelihood of harm or loss to protected species or semi-natural habitats, targeted ecological surveys must be undertaken prior to the determination of any planning application.

The mitigation hierarchy needs to be followed when addressing any potential impacts on ecology and biodiversity that survey work has identified. This requires that applicants seek to avoid any potential impacts in the first instance through careful design/construction choice before tailoring the proposal to mitigate impacts. Only once the first two steps in the

hierarchy have been exhausted should compensation measures be considered. More advice is set out in the Green Infrastructure and Biodiversity TAN, whilst Oxfordshire County Council also has biodiversity guidance³ available to assist applicants.

Designated sites

Whilst policy G1 assigns protection to a network of green and blue space across the city, this policy sets out additional protections for ecological sites within the network based upon their importance and value for the species and/or habitat they have been designated for, namely:

- International designations - The Oxford Meadows Special Area of Conservation (SAC), part of which is within Oxford's boundary, has been designated for the presence of lowland hay meadows and creeping marshwort (*Apium repens*).
- National designations - There are 12 Sites of Special Scientific Interest (SSSIs), eight of which were notified for their nature conservation interest and the others primarily for geological interest.
- Local designations including Local Wildlife Sites (LWS); Local Nature Reserves (LNR) and Oxford City Wildlife Sites (OCWS) - Oxford City Council holds a copy of the "Living List" of these sites that will be reviewed and maintained throughout the Local Plan period.

The starting point is that all designated sites within the ecological network will be protected from development except in exceptional circumstances as set out in the policy. This includes being developed upon, as well as being adversely affected by development nearby.

In determining the potential for adverse effects on ecology from a development, applicants will likely need to consider information from various sources, including the site context and surrounding area; expert ecological advice, as well as a review of relevant existing information where available, such as Natural England's Impact Risk Zones (IRZs). A range of potential impacts will need to be considered and will depend on the context of the application and proximity to any protected site(s), particularly, but not limited to:

- Loss of protected land
- Recreational impacts
- Changes to the hydrological regime (surface and groundwater particularly)
- Impacts on air quality
- Impacts on water quality
- Impacts from artificial lighting.

Areas of the city are potentially vulnerable to changes in hydrology that could arise from development and these impacts will need to be fully considered and mitigated where relevant. For example, Oxford Meadows SAC is potentially sensitive to changes in groundwater flows stemming from development on the North Oxford gravel terrace and new subterranean development on the gravel terrace will need to demonstrate through a hydrogeological assessment that there will be no significant adverse effect upon the integrity of the SAC through changes to groundwater flows. Within the groundwater catchment areas for the Lye Valley and New Marston Meadows SSSI's, development will

³ <https://www.oxfordshire.gov.uk/residents/environment-and-planning/countryside/natural-environment/environmental-policy-and-planning/biodiversity-and-planning>

need to demonstrate that impacts are avoided, or mitigated, such as by the use of infiltration methods where geological conditions allow.

New development immediately adjacent to Oxford's most valued sites, the SAC and SSSIs, will be expected to incorporate appropriate buffers that protect these sensitive areas during the construction and operational phases and ultimately deliver additional supporting habitat. The design of these buffers will need to be guided by the ecological context of the sites they are being designed to protect, as well as appropriate ecological advice.

There are also undesignated sites that support habitats and species of principal importance (this is a wider selection of habitats and species listed under S41 of the Natural Environmental and Rural Communities Act, 2006, some of which are protected under other legislation and some not). Wherever possible, development should seek to retain and enhance these other features of interest.

Policy G6 – Protecting Oxford’s biodiversity including the ecological network

Development proposals must seek to conserve and enhance biodiversity including safeguarding the key sites of Oxford’s ecological network.

Proposals with a reasonable likelihood of adversely impacting semi-natural habitats or protected species on or immediately adjacent to the site, will only be permitted where:

- a) They have been informed by targeted ecological surveys, completed prior to determination of the planning application, unless explicitly agreed with the Council; and
- b) Any impacts identified have been satisfactorily addressed in the design of the development in accordance with the mitigation hierarchy; and
- c) Any impacts on species or habitats that are of city or county importance, in line with the criteria for LWS or OCWS designation, have been addressed in accordance with requirements for proposals affecting locally designated sites (criteria d and e below).

Internationally and nationally designated sites

Development will not be permitted that would have an adverse effect on the integrity of the Oxford Meadows Special Area of Conservation (SAC) or an adverse effect on any Site of Special Scientific Interest (SSSI).

In addition, development will not be permitted within the SAC or a SSSI except where it is related to and required for the management, maintenance or enhancement of the qualifying features of the site.

Development proposed on land immediately adjacent to the SAC or any SSSI must be designed with a buffer to that site that both helps to prevent adverse effects during the construction and operational phases of the development and delivers habitat supporting the interest features of that site.

Locally designated sites

Development that would have an adverse effect on a Local Nature Reserve (LNR), Local Wildlife Site (LWS) or Oxford City Wildlife Site (OCWS) will only be permitted where:

- d) There is an exceptional need for the new development that outweighs any adverse effect from loss of habitat or harm to any feature of interest for which the site was selected, and this need cannot be met by development on an alternative site with less biodiversity interest; and
- e) Satisfactory mitigation and compensation onsite or sufficiently local to preserve the feature of interest can be delivered and has been agreed with the Council.

The same level of protection will be afforded to proposed LWS and proposed OCWS (prior to the conclusion of the selection process).

Where proposals result in habitat loss within a LNR or LWS, they must retain and enhance the interest features for which the site was selected.

Other features of interest

Development should seek to retain and enhance habitats and species of principal importance for biodiversity wherever possible.

Flood risk and climate resilient design

4.8 Climate change is the greatest threat facing society today and the way we design and construct the built environment has a key role to play, not only in how we mitigate our impacts on the climate (as is dealt with in Chapter 5), but also in how we can adapt to and withstand the impacts of a changing climate in future. A certain amount of climate change is already effectively baked into our future, even if the world were to stop emitting greenhouse gases tomorrow, due to the long-term effects of emissions like carbon dioxide already within the atmosphere. Adaptable and resilient design in new development that can enable it to better withstand the impacts of climate change and reduce the harmful effects for occupants and other users will therefore be essential.

4.9 Oxford's risk from future climate change is primarily related to the hazards of flooding and hotter, drier summers. A significant amount of the city lies within areas of higher flood risk according to EA mapping and the Council's updated Strategic Flood Risk Assessment (2023). Climate change is projected to bring about wetter winters, and more intense rainfall events that could exacerbate flood risk from various sources like rivers, surface water and the sewers with impacts for people's health as well as economic costs through damage to properties and businesses. The Oxford Flood Alleviation Scheme (OFAS) is a partnership project led by the Environment Agency which will reduce flood risk from the River Thames to existing businesses, residential properties, major roads and the railway development particularly at risk from flooding in the Botley and Abingdon Roads area. However, the OFAS is only one response for addressing flood risk in city and will not remove risk entirely, thus it is imperative that new development proposals consider flood risk from all sources and respond to particular circumstances of the local area accordingly.

4.10 A further climate hazard relates to overheating. Whilst areas of the city are very green and natural, other areas are considerably urbanised with significant proportions of artificial surface cover which can lock in heat far more than in more rural surroundings (also known as the urban heat island effect). Additional risks arise for those communities who are more economically deprived or vulnerable due to other characteristics such as age, living with health issues or living in poorer quality accommodation (this is also true of flood risk). Again, as with much of southern England, climate change is expected to exacerbate risks from overheating, with future climate expected to involve hotter, drier summers and more heat wave events. Future climate change will have impacts for water supply too, making conservation and efficient water use even more important, particularly as Oxford is already an area of water stress.

4.11 The previous policies in this chapter that address greening and biodiversity will play an important role in helping new development to be more resilient to the issues outlined above. The remaining policies in this section address climate hazards in greater focus. Policies G7 and G8 set out the approach development needs to take to addressing flood risk now and in future with

the added effects of the changing climate. Policy G9 aims to ensure that all design is considered in the context of future climate change and incorporates appropriate resilience measures more generally, including the need for conserving water and considering issues of overheating and the need for appropriate cooling strategies to safeguard the wellbeing of occupants.

Flood risk and Flood Risk Assessments (FRAs)

In the first instance, it is expected that new development avoids all areas of flood risk and does not exacerbate flood risk elsewhere in the city. However, Oxford has a complex geography with potential for flooding from various sources and complete avoidance may not always be possible. In these instances (and in conjunction with the sequential approach requirements of national policy) it is crucial that proposals are carefully designed to reduce flood risk as much as possible, methodically following several key steps:



Figure 4.2: Key steps for approaching flood risk

First, it is important to **assess** the potential for flood hazards from all relevant sources (e.g. rivers, surface water, sewers, groundwater etc.) that could pose a risk to the site, as well as any impacts the development could have on flood risk offsite. Second, design in a way that seeks to **avoid** highest risks, e.g. on a site with varying levels of flood risk, through locating the most vulnerable uses (e.g. residential) in areas of lowest risk, and least vulnerable uses (e.g. open space) in areas where higher risk may be present. Once avoidance has been fully explored, consideration will need to turn to how to **mitigate** flood risk impacts which can't be avoided through careful design and layout of the site which could involve a multitude of solutions such as:

- flood resistance measures (dry-proofing) like barriers or raised floor levels which can help to mitigate the impact of flood events by keeping water out at times of flood;
- flood resilience measures (wet-proofing) like using materials that can quickly dry out in order to mitigate the most severe impacts of flooding by helping to ensure that buildings can be made habitable again quicker, reducing the aftereffects on occupants;
- appropriate Sustainable Drainage Systems (SuDS) to reduce surface water run off by slowing and storing water (see also policy G8);
- flood compensation measures such as creating new flood storage to mitigate any loss of storage through development to prevent increased flood risk elsewhere.

It's important to remember that risk generally cannot be totally eliminated where it is

present and an element of residual risk can be present regardless of mitigation measures e.g. flood defences can fail or be overrun by exceptional flood events. The final step in the approach should include consideration for how to **manage** this remaining risk through the design of the scheme, potentially through providing occupants access to alert/early warning systems or safe evacuation plans. Ensuring that occupants and the emergency services have appropriate access/egress routes during flooding that align with the specifications set out in the Environment Agency's best practice guidance⁴ is also crucial to addressing residual risk and it should be noted that no application will be permitted where this requirement cannot be demonstrated.

Site-specific Flood Risk Assessments (FRAs) will be required for development in a variety of locations as detailed in the policy and are likely to be the key way that applicants will be able to demonstrate they have followed the above approach. The policy sets out the considerations which will need to be addressed as part of the FRA and these will need to consider the lifetime of the development and the impacts of climate change now and in future.

In some parts of Oxford development already exists in areas at the highest risk of flooding. This is generally older development that won't incorporate features such as SuDS that minimise the impacts of flooding on the existing properties and that minimise the risk of flooding elsewhere. The NPPF allows only new water-compatible uses and essential infrastructure in Flood Zone 3b⁵. This restricts reuse of existing buildings in areas at highest risk of flooding. The approach of the Local Plan policy is to allow very careful re-development of existing brownfield sites in Flood Zone 3b. This is to make best use of existing sites in the sustainable location of Oxford and because new development has the potential to improve the flood risk situation. The policy sets out conditions for re-development of brownfield sites in Flood Zone 3b that will ensure the flood risk situation is improved. Conditions include that the overall physical built footprint (at ground level) is not increased, and that flood storage is not lost.

Extensions are a common form of development occurring regularly around the city, and whilst these may have limited flood risk implications in isolation, their frequency of occurrence does have potential for cumulative impacts resulting in increased flood risk as flood storage areas are lost to development. For this reason, householder extensions proposed in Flood Zone 2 or 3 will require an FRA to be carried out to assess risk on and off the site and mitigation measures provided to reduce these risks. It is acknowledged however, that the limited scope of some extensions can make achieving the full requirements challenging – such as fully mitigating lost flood storage, thus the Council will take a pragmatic view to such applications requiring that applicants robustly justify how they have sought to minimise and ideally mitigate all risk to occupants and surrounding area in accordance with the hierarchy as set out in the policy.

A change of use to a house in multiple occupation (HMO) in flood zones 2 and 3 will also require an FRA to be carried out to assess risk on and off site. This is because there is a higher risk when managing the safe access and egress of individuals that live separately (which is more typical of those that live in HMO accommodation) should flooding occur. Planning permission will only be granted where applicants have met the full requirements

⁴ <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>

⁵ The Council has undertaken a new Strategic Flood Risk Assessment to support the Local Plan's policies including defining Flood Zone 3b using the most up-to-date modelling available.

of the policy, and it is demonstrated that flood risk can be suitably managed.

The policy also sets out other more specific requirements that are intended to protect occupants of development and more widely across the city. For example, basement accommodation will not be permitted in areas of flood risk due to the high risk to life for occupants when this type of development floods (potentially filling the basement entirely with flood water) and difficulty with access for emergency services to help those trapped inside. Equally, culverting of open watercourses will be resisted, not only because of the loss of natural flood management features and linear corridors which benefit movement of people and wildlife, but also because culverts can act as a constriction on a watercourse that can increase the upstream water level (and also flood risk) in conditions of high flow, and due to the greater risk of blockage along with the challenges of maintaining them.

Policy G7 – Flood risk and Flood Risk Assessments (FRAs)

Planning permission will only be granted where proposals have considered the potential for flooding from all sources now and for the lifetime of the development including climate change, as well as the potential for them increasing flood risk elsewhere, the safety of users of the development, and where they have appropriately addressed any flood risks identified.

Planning permission will only be granted where a sequential approach has been taken to locating the development and where the Sequential Test and the Exception Test (where necessary according to national policy and supporting guidance) have been passed.

Planning applications for development (including minor householder extensions and changes of use to houses in multiple occupation (HMOs)) must be accompanied by a Site-Specific Flood Risk Assessment (FRA) when proposed in the following locations:

- within Flood Zone 2,
- within Flood Zone 3,
- on sites within Flood Zone 1 larger than 1 ha,
- on sites within Flood Zone 1 of less than 1 ha but including a change of use in development type to a more vulnerable class,
- on sites within Flood Zone 1 in areas identified as Critical Drainage Areas.

The FRA must be undertaken in accordance with up-to-date flood data, national and local guidance on flooding and consider flooding from all sources including the impacts of climate change now and in the future.

Planning permission will only be granted where the FRA demonstrates that for the lifetime of the development and including the impacts of climate change:

- a) the proposed development will not increase flood risk offsite; and
- b) future occupants will be safe during times of flood; and
- c) safe access and egress in the event of a flood can be provided; and
- d) details of the necessary mitigation measures to be implemented have been provided.

For minor extensions (including householder) proposed within Flood Zone 2 and 3a, it is acknowledged it may be challenging to meet all the requirements above. Proposals will be expected to minimise risk to occupants and surrounding area by following the below hierarchy of principles in order of preference, demonstrating robust justification where the top levels in the hierarchy cannot be met:

- e) Full requirements of an FRA (as above)
- f) Finished floor levels above design flood level with compensation
- g) Finished floor levels above design flood level
- h) Finished floor levels at existing level with water exclusion
- i) Finished floor levels at existing level with a water resilient strategy (unless the development cannot be made safe).

Planning permission will not be granted for development in Flood zone 3b (including minor household development) except where it is for water-compatible

uses or essential infrastructure; or where it is on previously developed land and includes a high standard of mitigation designed to demonstrably decrease flood risk compared with the current situation. All the following criteria must also be met:

- j) it will not lead to a net increase in the built footprint of the existing building within Flood Zone 3b and where possible lead to a decrease; and**
- k) it will not lead to a reduction in flood storage (using flood compensation measures) and where possible increase flood storage; and**
- l) it will not lead to an increased risk of flooding elsewhere; and**
- m) it will not put any future occupants of the development at risk, including in relation to ensuring safe access/egress.**

Proposals for basement accommodation within flood zone 2 or 3 will not be permitted due to the unacceptable additional risks associated with this type of accommodation. Where proposals for basements are at risk of other sources of flooding (i.e., groundwater, surface water, or sewer flooding), it must be demonstrated that flood risk can be managed safely.

Applications that propose culverting of open watercourses will not be permitted.

Sustainable Drainage Systems (SuDS)

Sustainable Drainage Systems (SuDS) are features which are designed to manage the flow of rainwater in a way that mimics the natural landscape. SuDS need to be incorporated into the development from the earliest stages of design conception and may include water conservation (e.g. rainwater collection and storage) as well as surface water drainage (e.g. soakaways, porous surfaces, swales, streams and balancing ponds). SuDS are increasingly important in the context of climate change, building the resilience of our urban areas to flooding during times of intense and heavy rainfall events but they can provide additional benefits, particularly where these are implemented through green features, including:

- providing open space for recreation;
- habitat to support wildlife and wider biodiversity;
- supporting water quality (through filtering out pollutants before the water joins larger water bodies like the rivers);
- adaptation to other climate hazards such as overheating.

Wherever possible, these multiple benefits should be sought through careful design of SuDS features, contributing to the health and wellbeing of people and the environment beyond the benefits of managing surface water. In most instances, this will mean that natural, green and blue infrastructure features like soft landscaping, green roofs and ponds, will be preferable. These features should allow for water to be managed above ground, utilising conveyance via swales, rills, and channels, and using above ground attenuation such as basins, wetlands and rain gardens where required. Artificial/unnatural features below ground like pipe systems and underground attenuation tanks will not be permitted unless there are exceptional site conditions present, as they do not provide the

wider benefits of SuDS such as those highlighted above. Where natural, green and blue infrastructure features are utilised within SuDS design on a site, these measures could also contribute to achieving other policy requirements in the Local Plan, such as those set out with policies G2, G3 and G5.

Appropriate SuDS features will also need to consider the context of the site and any previous site uses. Where a site has a history of contamination for example, then infiltration methods may not be suitable unless it can be demonstrated that there will be no pathway of contamination and alternative SuDS features will need to be utilised instead (see policy R5 also). The choice of features and any specific management requirements selected to address site conditions should be detailed in the maintenance plan as discussed below.

When assessing applications, the City Council will deal with proposals requiring SuDS on minor developments (up to 9 dwellings, non-residential floor area less than 1000m², or sites under 1 hectare in size). Oxfordshire County Council as Lead Local Flood Authority will respond on all applications for major developments (10 or more dwellings, non-residential floor area of 1000m² or more, or sites over 1 hectare in size). Applicants must demonstrate that they have had regard to the SuDS Design and Evaluation Guide TAN for minor development and Oxfordshire County Council guidance for major development.

To ensure that SuDS are successfully operational for the lifetime of the development, applicants will also be expected to submit a SuDS maintenance plan for any minor or major development. This plan must demonstrate how SuDS will be regularly maintained, to stop them from being obstructed and remain effective.

To reduce water flows into wastewater systems, proposals will need to be designed with separate foul and surface water sewers on all sites delivering new development. Applicants undertaking works to existing development are encouraged to take opportunities to separate foul and surface water also, which will be beneficial for improving the resilience of their development and the wastewater network in future.

On larger schemes, a Foul and Surface Water Drainage Strategy will be required and should include evidence that demonstrates agreement between the developer and sewage undertaker on the available infrastructure capacity to accommodate the additional foul water. It may be appropriate to phase development so that initial additional flows from the proposed development do not exceed the capacity available prior to upgrading of the foul drainage network. It is important to note that up to three years lead in time could be required to undertake such upgrade works.

Policy G8 – Sustainable Drainage Systems (SuDS)

All development proposals will be required where feasible to manage surface water through Sustainable Drainage Systems (SuDS).

SuDS must be designed in a way that incorporates reuse, infiltration, retention or conveyance methods which utilise natural, green and blue infrastructure rather than unnatural, artificial components. Below ground features such as pipe systems or underground attenuation tanks will not be permitted, unless exceptional site conditions justify an alternative approach which has been agreed with the Council. Multi-functionality of SuDS should be maximised in their design, such as where they are incorporated into public open space.

Where a site has potential for contamination, SuDS that rely on infiltration will be discouraged and other suitable methods should be adopted to protect the water environment unless it can be demonstrated that there will be no pathway of contamination.

Surface water runoff should be managed to greenfield run-off rates as close to its source as possible, in line with the following drainage hierarchy:

- a) store rainwater for later use; then:**
- b) discharge into the ground (infiltration); then:**
- c) discharge to a surface water body; then:**
- d) discharge to a surface water sewer, highway drain or other drainage system; and finally:**
- e) discharge to a combined sewer (only in exceptional circumstances).**

Details of the SuDS must be submitted as part of a drainage strategy or FRA where required.

A SuDS maintenance plan must be submitted alongside any planning application for minor or major development, demonstrating how SuDS will be managed and remain effective for the lifetime of the development. The plan must clearly explain what maintenance measures will take place, how frequently they will occur and for how long and will be secured by condition.

For major developments, Oxfordshire County Council (as Lead Local Flood Authority) are a statutory consultee, and as such proposals will be expected to be adhere to their SuDS standards.

Developers must separate foul and surface water sewers on all new development. Where opportunities present during works on existing development, including householder extensions, applicants are encouraged to separate existing combined foul and surface water sewer arrangements.

A Foul and Surface Water Drainage Strategy must be provided for all new build residential development of 100 dwellings or more; non-residential development of 7,200sqm or more; or student accommodation of 250 study bedrooms or more, to demonstrate how foul water and surface water drainage will be managed to reduce run off and improve water quality in line with national policy.

Resilient Design and Construction

All new development needs to be designed in a way that can function efficiently and preserves the wellbeing of occupants in the context of current and future climate. This means applicants should have a good understanding of future climate risks (which extend beyond flood risk) and incorporate a range of adaptation measures into their development that enable it to be resilient for its lifetime.

This policy has two elements which should be demonstrated with detail that is proportionate to the scale of the development. Firstly, it requires that applications demonstrate appropriate consideration of existing and future climate and potential weather extremes that any proposed development will have to function within. Some of these considerations will already be integral to addressing other policies such as G7 on flood risk, but they should also encapsulate other important issues such as risk of overheating in summer heatwaves (which should consider external areas as much as internal) as well as the need for water efficiency and conservation.

Secondly, it requires applicants to demonstrate that the design of new development has been tailored to these risks both for the building itself, as well as occupants, incorporating a range of measures that can ensure resilience to existing and future climate hazards. This is also important for avoiding 'maladaptation', whereby inefficient design results in inappropriate development for future climate and the increased risks for occupants that come with it.

A checklist is included in the policy setting out the key measures which need to be addressed in the design of the development where relevant. Meeting these requirements will help demonstrate the proposal is designed for resilience to the spectrum of climate impacts, including a sufficient strategy for promoting cooling inside and outside; flood resistance/resilience where necessary; as well as ensuring the development incorporates sufficient water conservation measures. It is acknowledged that there may be overlap with requirements in other policies, equally, there will be many design solutions that can deliver upon multiple requirements (e.g. green infrastructure can promote urban cooling as well as flood resilience). Applicants are encouraged to incorporate design measures that have multi-functional benefits and can refer to the same design features where they meet the requirements of multiple parts of the checklist.

The design and access statement should clearly set out how the requirements within the checklist have been addressed (or identify where these are not relevant). Where a design and access statement is not required, the proposal should clearly set out in one place how the requirements have been met in another part of the application (e.g. planning statement). Applicants can reference supporting evidence for these other policies where relevant (e.g. FRAs for policy G7, urban greening factor for policy G3), rather than duplicating evidence. However, to ensure compliance with this policy, the proposal will need to explicitly identify how the measure adapts or builds resilience to the existing and

future climate change risks.

It is important to note that the considerations in this policy could also support applicants in ensuring that their proposal's design aligns with the requirements of the updated Building Regulations and the separate standards that are enforced through that process. The newly introduced Part O which addresses overheating, for example, requires more stringent consideration of factors that influence a building's thermal performance such as the design/layout of windows which need to be agreed through the planning process. As such, considering these issues at the design stage and as part of the planning process could help to reduce the potential for conflict with the separate standards required through Building Control.

Policy G9 – Resilient Design and Construction

Planning permission will be granted where proposals have been designed with regard to most up-to-date climate change projections, suitably addressing the key risks from changing climate on occupants; the development; and any supporting infrastructure for its lifetime.

All proposals excluding householder applications, unless this is required as part of other policies in the Local Plan, will be expected to demonstrate (which could be as part of the Design and Access Statement) that the following resilience requirements are incorporated into the design:

- **Risk of overheating, flooding (from all relevant sources), and storm extremes have been considered for the lifetime of the proposed development and that design has been tailored to function effectively within future climate scenarios.**
- **A cooling strategy to address risks of overheating which is proportionate to the scale of the building and promotes passive cooling, energy efficient measures in the first instance (in line with requirements of policy R1). This should consider both internal and external environments.**
- **The measures incorporated to manage water run-off and, where the site is at risk of flooding now or in future, measures to reduce flood risk, such as flood resistance measures (e.g. dry-proofing to keep water out) and resilience measures (e.g. wet-proofing to allow continued function during, or quick recovery after flooding).**
- **All dwellings (including conversions, reversions and change of use) achieve an estimated water consumption of no more than 110 litres per person per day (proposals are encouraged to go further than this). All non-residential development should demonstrate what measures have been incorporated to reduce water use.**
- **In addition to the above, other measures to conserve water use including rain/grey water harvesting/reuse where appropriate.**
- **Supporting infrastructure is designed to function in extreme weather conditions.**