Oxford Green Infrastructure Study

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Planning Policy
Planning, Sustainable Development and Regulatory Services

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1. Introduction

Oxford benefits from a wide range of green and blue spaces which, individually and as a network, perform important social, environmental and economic functions and are valued by local people. This includes green spaces such as parks and gardens, amenity space, natural and semi-natural spaces, historic sites, floodplain and sites of importance to nature conservation. It also includes blue spaces such as rivers, canals, streams and other waterways. The term green infrastructure includes both green and blue spaces.

This Green Infrastructure Study has been produced by the City Council to help inform the production of the Oxford Local Plan 2036. The study aims to:
- Audit existing green spaces within Oxford to understand their current quality and quantity;
- Consider linkages between existing green and blue spaces within Oxford, leading to the identification of a multifunctional green infrastructure network; and
- Identify opportunities to protect and enhance Oxford's Green Infrastructure Network through the Oxford Local Plan 2036.

It is important that we have this information to inform the Oxford Local Plan 2036 as the Local Plan will play a key role in determining how green and blue spaces are used and provided in the period up to 2036.

Oxford's Green Space Strategy 2013-2027 highlights the importance of green infrastructure in Oxford and its impact on improving local people's health and well-being and in preserving the city's cultural heritage and biodiversity. They are integral to the life of the city and its economy. The Green Space Strategy sets out for main aims which are to:
- Protect and improve Oxford's accessible parks and open spaces; and
- Provide clear objectives and direction for the planning and management of parks and open spaces; and
- Provide the Council with a robust basis for making development decisions and negotiating planning gain; and
- Identify ways in which parks and open spaces can be improved in a coordinated way whilst providing value for money.

Through auditing existing green and blue spaces in Oxford and considering how to maximise the benefits these spaces provide locally and to the environment, whilst also preserving them, the Green Infrastructure Study can help achieve the goals set out in Oxford's Green Space Strategy. Green infrastructure throughout Oxford has been audited to identify each of their key benefits and how they link to the wider green infrastructure network. This provides the Council with key evidence to inform new policies in the Oxford Local Plan 2036 which in turn will help meet objectives set out in the Green Space Strategy.

This study also helps the Council meet the key aims set out in the Oxford Biodiversity Action Plan 2015-2020 which are to conserve and enhance biodiversity in Oxford. Sites which are rich in biodiversity such as Conservation Target Areas (CTAs) and Sites of Special Scientific Interest (SSSIs) and can also form part of Oxford's green infrastructure network have been audited as part of the

Green Infrastructure Study, which in turn will better inform policies in Oxford Local Plan 2036 to help meet the Action Plan's aims.

2. What is green infrastructure?

The National Planning Policy Framework (NPPF) defines green infrastructure as a network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.[1]

The National Planning Practice Guidance expands on this, encouraging a broad interpretation of green infrastructure[2]:

> *"Green infrastructure is not simply an alternative description for conventional open space. As a network it includes parks, open spaces, playing fields, woodlands, but also street trees, allotments and private gardens. It can also include streams, canals and other water bodies and features such as green roofs and walls".*

The Oxford Green Infrastructure Study includes both green and blue spaces in accordance with the Planning Practice Guidance. This is not limited to usable open space and a range of types of sites were audited including CTAs and SSSIs which are found across Oxfordshire, allotments, private gardens, and cemeteries among others.

It is important to recognise that green infrastructure can provide a wide range of social, environmental and economic benefits as set out in Table 1.

Quality of Life and Cultural Benefits	Wellbeing	▪ Supports physical health by providing opportunities for leisure, sports and recreational activities, as well as active travel ▪ Supports mental health by helping to create attractive living environments, by bringing people closer to nature, and by providing areas of calm and tranquillity within urban environments ▪ Provides opportunities for social interaction, strengthening communities and helping to reduce social isolation and exclusion ▪ Provides opportunities for play, exploration and learning
	Heritage	▪ Positive contribution to the setting of listed buildings ▪ Positive contribution to the character of conservation areas ▪ Positive contribution to historic views ▪ Some elements of the GI network may be of heritage value in their own right (e.g. historic parks, locally designated heritage assets, archaeological interest)
	Sense of place	▪ Positive contribution to the special character of Oxford and part of what makes Oxford unique (including landscape character) ▪ Provides gaps or buffers between urban areas, protecting local character ▪ Provides physical and visual links with the surrounding countryside
Environmental Benefits	Biodiversity	▪ Supports ecological networks and provides habitats for plants and animals ▪ Enables the movement/migration of species across urban areas

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[1] Department for Communities and Local Government (March 2012) National Planning Policy Framework. Annex 2: Glossary

[2] Department for Communities and Local Government. National Planning Practice Guidance. Green Infrastructure. What is Green Infrastructure? Paragraph 027 Reference ID: 8-027-2160211. Revision Date: 11 02 2016.

	Water Management	▪ Floodplain for Oxford's rivers, streams and brooks (water storage and retention) ▪ Helps to manage surface water runoff (sustainable drainage)
	Air quality	▪ Helps to improve air quality (also benefiting human health)
	Climate change mitigation	▪ Provides natural cooling (provision of shade, enabling air flow) ▪ Provides carbon capture and storage services ▪ Provides flood protection
Economic Benefits	**Jobs**	▪ Supports businesses and jobs related to the use and management of green and blue spaces
	Tourism	▪ Historic parks and views help to attract visitors to the city ▪ Encourages visitors to spend longer in Oxford
	Attractive business location	▪ Part of the character of the city and the "Oxford brand" ▪ Helps to create a more attractive business environment ▪ Contributes to the regeneration of areas
	Workforce	▪ Provides opportunities for contact with nature and recreational activities that contribute to workers' mental and physical health, reducing sick days and increasing productivity and staff retention ▪ Provides opportunities for formal and informal learning, training and education through the use and management of green and blue spaces, including volunteering
	Resources	▪ Provides opportunities for local food production by incorporating allotments, city farms, orchards and agriculture (also reducing food miles) ▪ Provides potential sources of low carbon energy such as biofuels and hydropower

Table 1: The benefits that green infrastructure can provide in Oxford

Using the green infrastructure approach to consider the current and future roles of Oxford's green and blue spaces allows us to make the best use of Oxford's limited land and to prepare for future change by thinking about multi-functionality. Instead of considering a site in terms of its individual features and functions, we can consider sites as part of a city-network, maximising the benefits they provide.

1.3 National Policy

National Planning Policy Framework (NPPF)
The NPPF is clear that local planning authorities should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure[3]. The multi-functional nature of green infrastructure means that it can also contribute to achieving wider objectives relating to sustainable development set out in the NPPF (Table 2).

Table 2: How the Oxford Green Infrastructure (GI) Study supports NPPF objectives

NPPF Para	NPPF Principles	How the Oxford Green Infrastructure (GI) Study supports NPPF objectives
Site allocations		
171	Plans should allocate land with the least environmental or amenity value	The study assesses the environmental and amenity value of Oxford's green spaces, identifying those with the highest value which require protection/enhancement as GI. Sites that are identified as having low environmental and amenity value

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[3] HMCLG (July 2018) National Planning Policy Framework. Paragraph 171

		and do not require protection as GI will be considered through the Local Plan site allocation process.
8	Local Plans should contain a clear strategy for enhancing the natural, built and historic environment	The study sets out a clear strategy for protecting GI taking into consideration the contribution of green spaces to Oxford's natural, built and historic environments.
Public open space and recreation		
96	Planning policies should be based on robust and up-to-date assessments of the needs for open space, sports and recreation facilities and opportunities for new provision	The study carries out a thorough assessment of all such spaces and their importance to the city.
97	Existing open space should not be built on unless it has been clearly shown to be surplus to requirements	The study forms a key piece of background evidence in considering future site allocations and in setting themed policies on GI.
98	Planning policies should protect and enhance public rights of way	The study provides evidence to support the policies of the Local Plan on walking and cycle connections.
Climate Change and Flood Risk		
8	LPAs should adopt proactive strategies to mitigate and adapt to climate change	The study provides evidence to support the policies of the Local Plan on flood risk.
150	When new development is brought forward in areas which are vulnerable to climate change, risks should be managed through suitable adaption measures including GI	The study provides evidence to support the policies of the Local Plan on flood risk.
157	Safeguard land from development that is required for current and future flood management	The study provides evidence to support the policies of the Local Plan on flood risk.
Biodiversity		
174	LPAs should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and GI.	This study has affected a change in how biodiversity will be considered in the new Local Plan, now focused much more on GI and networks of spaces.
8	Provide net gains in biodiversity wherever possible	The study provides evidence to support the proposed policy of the Local Plan on biodiversity including net gain.
174	Planning policies should ▪ plan for biodiversity at a landscape scale ▪ identify and map components of ecological networks ▪ promote the preservation and restoration of priority habitats, ecological networks and priority species populations	The study provides the evidence for the spatial approach of the Local Plan in terms of a GI network.
Heritage and character		
185	Local plans should set out a positive strategy for the conservation and enjoyment of the historic environment	The study incorporates criteria on heritage value of GI and supports the policies of the Local Plan on these issues.
170	Protect and enhance valued landscapes	The study provides an evidence base (alongside other studies on heritage for example) for the protection policies of the Local Plan.

Planning Practice Guidance (PPG)

The PPG is clear that green infrastructure should be a key consideration in Local Plans and that Local Plans should identify the strategic location of existing and proposed green infrastructure networks. The PPG encourages local planning authorities to prepare green infrastructure frameworks or strategies to support this. Studies should be evidence-based and consider cross-boundary issues where appropriate.

1.4 Green Infrastructure Study Methodology

The Oxford Green Infrastructure Study has been undertaken in two stages:

Green Infrastructure Study: Stage 1

Task undertaken at Stage 1:
- *Identification of green spaces for inclusion in the green space audit*
  It was important to be clear on the type and size of green space to be included in the green space audit to ensure that the approach was consistent. The approach taken follows that set out in the PPG, which interprets green infrastructure broadly to include a wide range of different types of green space. However, it was necessary to exclude some types of green space and green features from the scope of the audit to ensure a manageable data set. The aim of this stage was to identify sites that would potentially form the skeleton of Oxford's green infrastructure network. The criteria for site selection is set out at Appendix 1.

- *Assessing the social, environmental and economic functions of identified green spaces*
  The identified green spaces were considered against a range of social, environmental and economic criteria to understand their current functions and value.
  Wealth of existing knowledge and data held across the City Council.
  Pulling this together
  Appendix 2

- Identification of important GI green spaces

Outcomes of Stage 1:

- Initial audit of green spaces and identification of key green spaces
- Stage 1 findings published for consultation at the preferred options stage

Green Infrastructure Study: Stage 2

Three main aspects to Stage 2:
- Local interest/feelings (community views)
- Networks Opportunities (and potential delivery mechanisms)

Stage 2 involved:
- Further consideration of the value of spaces to local people

- Further consideration of how wildlife corridors work, looking at links of particular habitat types and for particular wildlife types
- Further consideration of opportunities for improvements and network creation

Appendix 1: Criteria for Including Green Spaces in the Audit of Green Spaces

Green spaces included in the scope of the Oxford Green Infrastructure Study

Green spaces, both publicly or privately owned, with an area of 1,000m^2 (0.1ha) or more, including:

- **Amenity green space** - Outdoor sports facilities, school playing fields, informal recreation spaces, housing amenity land, village greens and commons, allotments

- **Functional green space** - Flood storage areas

- **Historic sites** - Cemeteries and churchyards, historic parks and gardens , local heritage assets

- **Natural and semi-natural spaces** - Woodland, scrub, grassland, wetlands, farmland, Green Belt

- **Nature conservation** - Special Areas of Conservation, Sites of Special Scientific Interest, County Wildlife Sites, Sites of Local Importance to Nature Conservation

- **Parks** - City parks, neighbourhood parks, local parks, University Parks

Note: In the majority of cases, greenfield sites identified through the Oxford Housing and Economic Land Availability Assessment (HELAA)[4] are used as the basis for assessment where they meet these criteria. However, as the HELAA and GI study are based on different assessment criteria, some additional sites have been included in the GI study that were not included in the HELAA (for example the Special Area of Conservation and Sites of Special Scientific Interest.) For consistency, the GI study continues the site reference numbers used in the HELAA.

Note: Blue spaces such as streams and rivers are not identified as individual sites through this study. They will be introduced at Stage 2.

Green spaces <u>not</u> included in the scope of the Oxford Green Infrastructure Study

Green spaces (publicly or privately owned) with an area of less than 1,000m^2 (0.1ha)

Reason: Whilst individually and/or cumulatively even very small green spaces may contribute to Oxford's GI by providing social, environmental and/or economic benefits, it would not be feasible to assess every green asset in Oxford due to the very large number that would need to be considered. By applying a size threshold this study takes a more strategic approach, focusing on identifying the green spaces that deliver the highest social, environmental and/or economic benefits in Oxford for protection through the Local Plan 2036.

Playgrounds, public squares and other public spaces where the majority of the area is hard surfacing with little significant vegetation

Reason: Whilst these spaces may have important social functions, the lack of green space and vegetation means that they are not considered to meet the definition of green infrastructure.

Private residential gardens

Reason: The majority of residential gardens in Oxford would not meet the 1,000m^2 size threshold. Whilst individually and/or cumulatively residential gardens may contribute to Oxford's GI, particularly in terms of their environmental benefits, their nature and maintenance cannot be guaranteed and it would be unreasonable for the Local Plan 2036 to attempt to guarantee this.

Street Trees

Reason: Where individual and/or groups of street trees provide significant amenity benefits it is more appropriate for them to be protected using Tree Preservation Orders rather than through the Oxford Local Plan 2036.

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[4] AECOM (October 2016) Oxford Housing and Economic Land Availability Assessment (HELAA)

Appendix 2: Criteria for Assessing the Social, Environmental and Economic Functions of Identified Green Spaces

Green Infrastructure Functions/Benefits			GI features	How we assessed this	Information Source(s)
Social	Wellbeing (Physical and mental health)	▪ GI can support physical health by providing opportunities for leisure, sports and recreation ▪ GI can support mental health by helping to create attractive living environments, and by bringing people closer to nature and providing areas of tranquillity within urban environments ▪ GI can help strengthen communities by providing opportunities for social interaction, including volunteering ▪ GI can provide opportunities for play/exploration/learning supporting child development	Public Access	Use the Green Spaces Strategy assessment of public access: • Unrestricted access • Limited access • Restricted access	Oxford City Council Green Spaces Strategy 2013-27
			Quality as a space to spend time	Assess publicly accessible sites only • Maintenance/cleanliness of green/blue spaces and associated facilities • Visual interest such as variety and colour of planting, surface textures, mix of green and blue assets, presence of public art • Activities for different ages/interests such as suitability for informal sports and play / variety of routes walking routes / presence, quality and usage of play equipment / presence of interactive public art • Perceptions of safety • Level of use	Oxford City Council Green Space Development Team
			Proximity and quality of alternatives	Assess publicly accessible sites only • Number of other facilities within a certain distance that preform the same function • Which sites do/could best provide services	Oxford City Council Green Spaces Strategy 2013-27 Oxford City Council Green Space Development Team
			Active travel networks	Where do green/blue spaces currently provide key walking/cycling links? • Public rights of way • National Cycle Network • Important local connections within Oxford	GIS mapping Officer Knowledge
			Facilities for organised sport	Identify outdoor sports facilities requiring protection over the plan period to meet current/future demand.	Oxford Playing Pitch and Outdoor Sports Strategy 2012-2026
	Heritage	▪ GI can positively contribute to the setting of listed buildings ▪ GI can positively contribute to the character of conservation	Setting of listed buildings	Green/blue assets within the curtilage of/adjoining listed buildings that are important to the setting.	GIS mapping Listing information sheets Site visits/Google street view
			Conservation area character	Green/blue assets identified as being important to the character of conservation areas in conservation area	Conservation area appraisals

Green Infrastructure Functions/Benefits			GI features	How we assessed this	Information Source(s)
		areas ▪ GI can positively contribute to historic views ▪ Some elements of the GI network may be of heritage value in their own right (e.g. historic parks, locally designated heritage assets, sites of archaeological interest)		appraisals.	
			Historic views	Green/blue assets identified as being important to historic views in the view cone assessments.	Oxford View Cones Study (2015)
			Local heritage assets	Green Spaces designated as local heritage assets on the Oxford Heritage Asset Register.	Oxford Heritage Asset Register
			Historic parks/gardens	Green spaces designated as historic parks/gardens.	GIS layer mapping
			Archaeology	Oxford City Council Archaeologist	Oxford City Council Archaeologist
	Sense of place	▪ GI can positively contribute to the special character of the city and form part of what makes Oxford unique (including landscape character) ▪ GI can provide gaps between urban areas, protecting local character (Green belt) ▪ GI can provide physical and visual links with the surrounding countryside	**Landscape character**	Figure 3.1.1 of the LUC study provides a summary of relative landscape quality across Oxford.	A Character Assessment of Oxford in its landscape setting (LUC 2002)
			Maintaining gaps between urban areas	Oxford Green Belt Study (LUC 2015) Figure 4.3 'Performance against Green Belt purpose 2 - To prevent neighbouring towns merging Into one another	Oxford Green Belt Study (LUC 2015)

Green Infrastructure Functions/Benefits			GI features	How we will assess this	Information Source(s)
Environmental Quality and Climate Change	**Biodiversity**	▪ GI can support ecological networks and provide habitats for plants and animals ▪ GI can enable the movement/migration of species and genes across urban areas	**Sites designated for biodiversity value**	Sites designated for their biodiversity value: SAC, SSSIs, local nature reserves, local wildlife sites, Ancient woodlands, Oxford City Wildlife Sites	GIS mapping Review of SLINCs (now called Oxford City Wildlife Sites) undertaken by TVERC
			Conservation target areas (representing corridors and linkages between sites)	Green spaces within CTAs	GIS mapping

			Biodiversity value of non-designated sites	Do green/blue spaces (not designated) have • Records of protected and notable species • Habitats	GIS mapping Oxford City Council Biodiversity Action Plan 2015-2020
	Water Management	▪ GI can provide active floodplain for Oxford's rivers, streams and brooks (water storage and retention) ▪ GI can help to manage surface water runoff (sustainable drainage)	**Flood plain**	Flood zones	Existing GIS layers
			Sustainable drainage	Not assessed specifically- this infrastructure will be provided as part of new developments, often no on green space. Protection of functional floodplain will assist flood storage.	
	Air quality	▪ GI can help to improve air quality (also benefiting human health)		Not able to assess at a site specific level	

Green Infrastructure Functions/Benefits			GI features	How we will assess this	Information Source(s)
Oxford's Economy	**Tourism**	▪ GI incorporating historic parks and views helps to attract visitors to the city ▪ GI can encourage visitors to spend longer in Oxford ▪ GI can provide space for events ▪ GI can provide accommodation space (such as campsites) ▪ GI can enhance the tourist experience	**Tourist Experience**	Green/blue spaces in the city centre	GIS mapping
	Attractive setting for business	▪ Green and blue spaces are part of the character of the city and the "Oxford brand" ▪ GI can help to create a more attractive business environment ▪ GI can contribute to regeneration	**Proximity of green/blue assets to employment sites**	Where employment sites fall within the walking distance catchment areas of publically accessible green spaces.	GIS mapping
	Workforce	▪ GI can provide opportunities for contact with nature and recreational activities that contribute to workers' mental and physical health, reducing sick days and increasing productivity			

		and staff retention ▪ GI provides opportunities for formal and informal learning, training and education through the use and management of green and blue spaces, including volunteering			
	Resources	▪ GI can provide opportunities for local food production by incorporating allotments, city farms, orchards and agriculture (also reducing food miles) ▪ GI can provide potential sources of low carbon energy such as biofuels and hydro -power	**Allotments**	Allotment plots in cultivation and waiting lists	Oxford and District Federation of Allotment Associations (O&DFAA) and the allotment associations
			Agriculture	Quality of agricultural land - Agricultural Land Classifications.	Agricultural Land Classifications