

Green Infrastructure

Supplementary Planning Document



October 2017

Contents

Section 1: Background	2
1.1. Introduction and Context	2
1.2 Structure and content of this guidance	4
1.3 Definition of Green Infrastructure	5
Section 2: Multi-functional and wider sub-regional context	11
2.1 National Planning Policy Framework and Duty to Cooperate	11
2.2 Barnet’s inter-connected Green Infrastructure network	13
2.3 Partnership working at the sub-regional level.....	14
Section 3: Barnet’s Green Infrastructure Network and related Plans and Strategies ..	18
3.2 Parks and Open Spaces Strategy	19
3.3 Playing Pitch Strategy	20
3.4 Barnet Tree Policy	21
Section 4: Green Infrastructure Benefits Analysis	23
4.2 Mechanisms for Green Infrastructure delivery	23
4.3 Corporate Natural Capital Account.....	24
4.4 SWOT Analysis of Previous Current and Proposed GI Management Arrangements	26
Section 5: Green Infrastructure Themes and Guidance	27
5.2 A) Natural Environment, Nature Conservation and Biodiversity.....	28
5.3 B) Health Sport and Recreation	44
5.4 C) Climate Change Resilience and Adaptation	51
5.5 D) Economic Regeneration and Social Cohesion.....	54
5.6 E) Green Transport and Access.....	57
5.7 F) Improving Air & Water Quality.....	64
5.8 G) Cultural Heritage	69
Section 6: Green Infrastructure Delivery and Guidance for Developers	72
6.1 National Guidance	72
6.2 Existing Green Infrastructure Local Plan Policies and Guidance	72
6.3 Green Infrastructure Considerations in Preparing and Determining Applications ..	76
Contacts and Additional Information.....	80
Appendix A - Glossary.....	82
Appendix B - Local Plan Policies.....	91

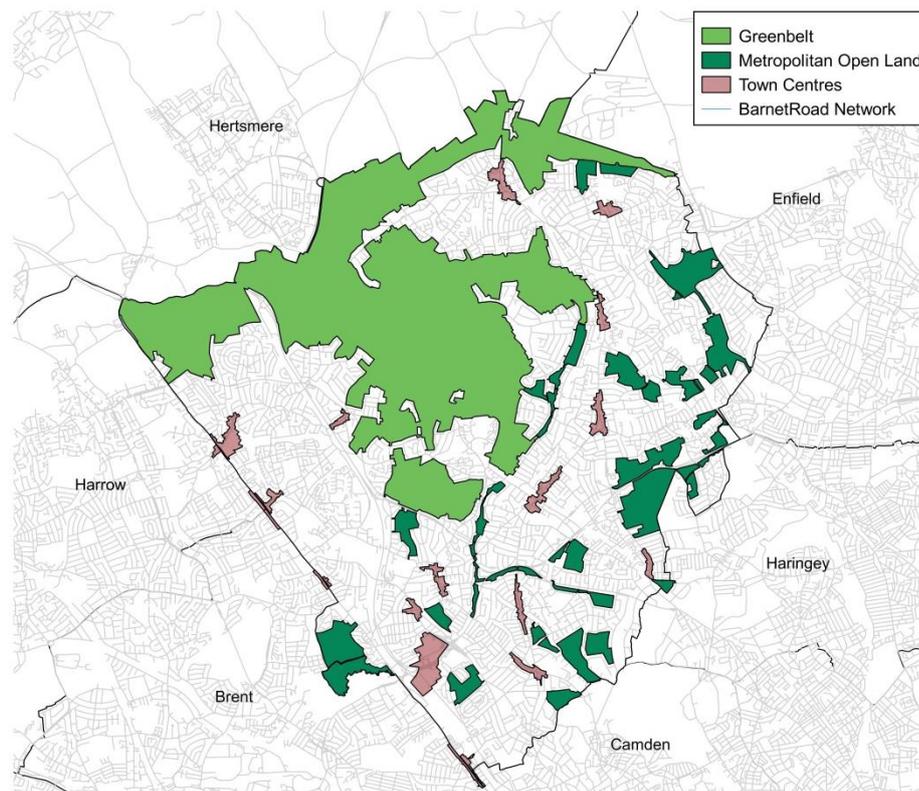
Section 1: Background

1.1. Introduction and Context

1.1.1. The provision of Green Infrastructure in and around urban areas contributes towards creating places where people want to live, work and invest; delivering benefits not only to the environment but also to the development of better places. Green infrastructure planning enables a co-ordinated and cross-sectorial approach to be taken across many different sectors. It can increase access to open spaces, contribute to urban cooling, allow greater appreciation of valued landscapes and support healthy living. Where high quality Green Infrastructure is maintained it supports community cohesion and provides vulnerable residents with opportunities to build social networks,

1.1.2. This Supplementary Planning Document (SPD) outlines the capacity of Green Infrastructure to deliver a wide range of benefits and how these might be promoted and delivered through existing policies and processes. Its production helps in providing a clear vision for delivering a range of benefits including:

- Enhancing the physical, social wellbeing and mental health of residents;
- Making Barnet a better place to live, work, invest, learn and play;
- Joining communities together by creating new green links between different parts of the borough;
- Preparing the Borough for the impacts of climate change by controlling flooding, reducing pollution and moderating temperatures; and
- Protecting and enhancing the Borough's trees and their contribution to cultural and natural heritage.



Map 1: London Borough of Barnet

- 1.1.3. Barnet is the fourth largest London Borough by area covering 86.74 square kilometres; one of the greenest suburbs in London with 28% (2,466ha) designated Green Belt and an additional 8% (690ha) identified as Metropolitan Open Land (MOL). Whilst Green Infrastructure (GI) planning is normally undertaken at the local authority level, it can be used to plan at a range of scales from individual sites up to the sub-regional level. Consequently, close regard is given to the relationship with GI initiatives beyond Barnet's borough boundary, including the All London Green Grid (ALGG), Watling Chase Community Forest and the Green Arc initiative. Collaborative working across administrative boundaries is imperative to achieving an effective, consistent and enduring GI network.
- 1.1.4. London will continue to grow with the current population of 8.8m projected to increase to 10.5 million by 2041¹. In 2015 Barnet became the most populous London Borough. In 2016 the mid-year population estimate was 386,198² and by 2035 is projected to have a population exceeding 457,000. Significant future population growth in the Borough will inevitably result in increased demands being placed on the benefits and services provided by Green Infrastructure. Barnet's growing population presents the challenge of sustaining and where possible enhancing the quality of life currently enjoyed by residents whilst meeting commitments to develop GI. To successfully support continued economic growth across the Borough there is a need for greater understanding of the pressures, needs and opportunities relating to green infrastructure. The full potential of a well-managed GI network to address future social and environmental challenges needs to be realised with a compelling need to ensure that existing GI within urban areas is retained and, wherever possible and practicable, better use made of it.
- 1.1.5. As explained in Section 5 of this SPD, individual GI assets have the potential to deliver a range of different benefits, including recreation, biodiversity, health, climate change mitigation and adaptation, sustainable travel, flood risk management and water quality. This document advocates an approach for collating, analysing and evaluating data that assesses the state and relative value of GI assets. It also serves to complement and inform the Council's Infrastructure Delivery Plan (IDP), a document that itemises individual infrastructure schemes and proposals. Comprehensive research data is available on individual assets and elements of GI such as parks, playing pitches, nature reserves and cemeteries.
- 1.1.6. The Council has developed an initial Corporate Natural Capital Account³ (CNCA) for the sites included within the Borough's Parks and Open Spaces Strategy⁴ (POSS). Natural capital refers to the stock of natural assets that provides benefits to people, using the principles of natural capital accounting as a means of balancing the 'value' of GI investment against the benefits it provides. The CNCA framework underpins the value of Barnet's Green Infrastructure helping to shape the Council's decision making on managing green spaces. By analysing the relationship between green space and economic data a methodology has been devised to assign value to natural capital assets enabling proper consideration in discussions about how to plan, assess and prioritise investment.

¹ Mayor of London's consultation document – A City for all Londoners – October 2016

² <https://data.london.gov.uk/dataset/2016-mid-year-estimates/resource/c926eec8-ef6e-4549-a165-c3a5a81d2bf6#>

³ Corporate Natural Capital Account, Jon Sheaff Associates Capital Asset Report 2017

⁴ LB Barnet and Jon Sheaff Associate 2016

- 1.1.7. To maximise opportunities for urban greening the scope for new and enhanced GI should be explored, including opportunities for delivering urban greening measures, such as through the use of CIL, climate change adaptation or as an off-site provision required in lieu of any shortfall not provided on a development site. As recognised in the Mayor of London’s draft Environment Strategy⁵, “access to good quality green space and living in greener neighbourhoods can have a big impact on people’s health and quality of life” as well as the attractiveness of a place to live, visit and do business. Taking forward recommendations from the Mayor’s Green Infrastructure Taskforce⁶, at the borough level this SPD helps in providing a compelling business case for investing in GI. The implementation of this SPD will be monitored through Barnet’s Authorities Monitoring Report (AMR).
- 1.1.8. In relation to biodiversity as stated in the Mayor’s Draft Environment Strategy, green space has been lost across London, and what remains has in some cases been reduced in quality leading to a reduction in the range of plants and animals living in London. Careful attention is therefore required to ensure that the number and diversity of bird, wildlife and bee species do not continue to decline. This SPD:
- Makes reference to the Biodiversity Action Plan for the Borough⁷ and describes the biodiversity resource within Barnet and the location of important habitats and species;
 - Illustrates good practice for identification, protection, mitigation and enhancement of biodiversity through the development planning process and increased access to it; and,
 - Signposts sources of further advice and support to help ensure a robust and positive approach to identifying and designing for biodiversity.

1.2 Structure and content of this guidance

- 1.2.1 Covering urban, semi-urban and rural settings, this SPD reflects Barnet’s priorities for ensuring the delivery of Green Infrastructure (GI). It identifies for protection and enhancement a connected network of green and blue (water) spaces which sustainably meet the needs of local communities and support the special qualities of Barnet’s open green spaces. The SPD also seeks to demonstrate the importance of green infrastructure for people and nature and its relevance to strategic decision-making. However, it is not the intention to provide detailed guidance on all the factors that should be considered in protecting and enhancing the provision of GI.
- 1.2.2 Guidance and information on the following issues are covered in this SPD:
- An overview and understanding of the features and benefits of the Borough’s existing GI network, including where it is located and existing links;
 - How and why GI should be considered as a guiding principle in planning for sustainable development through policy at all levels and in the design of new development;
 - The ability of GI to provide multiple environmental and social functions and benefits;

⁵ London Environment Strategy - Draft for Public Consultation, August 2017, Greater London Authority – (p6) https://www.london.gov.uk/sites/default/files/les_full_version.pdf

⁶ Natural Capital Investing in a Green Infrastructure for a Future London - Green Infrastructure Task Force Report - December 2015

⁷ The Council has in preparation a local Biodiversity Action Plan (BAP)

- An economic appraisal - Corporate Natural Capital Account (CNCA) – that the Council has developed to assess the value of GI assets in terms of contributing towards the delivery of economic development and prosperity and providing a better quality of life and wellbeing for residents; and
- A strategic investment framework for the longer term together with mechanisms for delivery, setting out issues and opportunities for GI future management, funding, creation and enhancement.

1.2.3 Written with the intention of ensuring that development proposals take full account of their biodiversity impacts and opportunities for enhancement, this SPD:

- Encourages development planning based on good information and positive design for biodiversity interests which can assist in reducing both delays in the planning process and the potential for refusal of planning permission;
- Helps to ensure that developers are aware at the outset of biodiversity interests and how best to maintain or enhance conservation and enhancement measures as a planned and positive feature of design;
- Assists planning officers and developers to engage in more informed and positive pre-application discussions; and,
- Enables members of the local community to make informed representations on development proposals; thereby more effectively highlighting any concerns and support they may have for proposed enhancements.

As appropriate, cross reference is made to other relevant guidance, including the Council's Sustainable Design and Construction and Residential Design Guidance SPDs.

1.3 Definition of Green Infrastructure

1.3.1 A key feature of Green Infrastructure (GI) is that individual assets spaces and places can be joined together as part of a wider network and that these networks are strategically planned. Barnet's GI includes parks and gardens, both public and privately owned, which offer valuable habitats for wildlife. The Core Strategy⁸ describes green infrastructure as "the network of green spaces, places and features that thread through and surround urban areas and connect town to country". Barnet's GI is listed as including:

- Green Belt and Metropolitan Open Land
- Landscape
- Natural and semi-natural green spaces
- Trees, hedgerows and green corridors
- Playing pitches and outdoor sports facilities
- Amenity green space
- Children's play facilities
- Allotments, community gardens and urban farms
- Cemeteries and churchyards
- Rivers, streams and open water areas
- Green roofs and walls.

⁸ Barnet's Local Plan Core Strategy - Table 5: Green Infrastructure – September 2012

1.3.2 Whilst also conserving and enhancing natural capital, GI can deliver extensive benefits in a cost-effective manner. Many spaces and environmental features comprise GI, including water environments (often referred to in London as the Blue Ribbon Network). Although definitions of GI vary the following are widely held as being essential components:

- Comprising a broad range of green open spaces / sites and environmental features;
- Connectivity between assets providing the capacity to create a green infrastructure network - ideally strategically planned at a sub-regional level; and,
- Individual green infrastructure assets, as explained below, having the potential to deliver a range of benefits - for example recreational, ecological, sustainable transport encouraging walking and cycling, ecological connectivity and adaptation, ecological resilience and mitigation to climate change economic and health. If planned, designed and managed as a network, there is the potential for individual benefits to be maximised.

1.3.3 GI can provide a wider range of benefits in support of sustainable economic growth, including:

- Urban cooling, through shading and evapotranspiration;
- Reduced runoff, through the absorption of rainfall;
- Reduced energy demand, through insulation of the property;
- Improved air quality;
- Improved biodiversity;
- Enhanced amenity and visual interest, including in neighbourhoods and town centres, helping to create a sense of place;
- Better quality of life for residents and workers; and
- For health and well-being, tackling obesity and mental health by offering pleasant opportunities for exercise, including food growing.



1.3.4 Other than Green Belt and Metropolitan Open Land (MOL), open spaces currently protected in the Local Plan are defined as:

- Public open space⁹;
- Outdoors sports (including playing fields, sports pitches and golf courses); and
- Allotments and cemeteries.

Many areas of the open spaces, including Green Belt / MOL, are also identified and protected in the Local Plan¹⁰ as Sites of Importance for Nature Conservation.

⁹ As defined by the Public Open Space Hierarchy in the London Plan – Table 7.2

¹⁰ Development Management Policies DPD – Table 17.2 Sites of Importance for Nature Conservation in Barnet - September 2012

What is Green Infrastructure?

Green infrastructure is a strategically planned and delivered network comprising the broadest range of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering those ecological services and quality of life benefits required by the communities it serves and needed to underpin sustainability. Its design and management should also respect and enhance the character and distinctiveness of an area with regard to habitats and landscape types.

Green infrastructure includes established green spaces and new sites and should thread through and surround the built environment and connect the urban area to its wider rural hinterland. Consequently, it needs to be delivered at all spatial scales from sub-regional to local neighbourhood levels, accommodating both accessible natural green spaces within local communities and often much larger sites in the urban fringe and wider countryside.

Source: Natural England (January 2009), Green Infrastructure Guidance (NE 176)

Green Infrastructure is the network of green and blue spaces (as well as features such as street trees and green roofs) that is planned, designed and managed to:

- promote healthier living
- lessen the impacts of climate change
- improve air quality and water quality
- encourage walking and cycling
- store carbon
- improve biodiversity and ecological resilience.

Source: London Environment Strategy Draft for Public Consultation GLA (August 2017)

Green infrastructure assets include:

- Natural and semi-natural rural and urban green spaces – including woodland, scrub, grassland, hedgerows, heath, wetland, open and running water and brownfield sites;
- Parks and gardens – urban parks, country parks, formal and private gardens, institutional grounds (e.g. schools and hospitals)
- Amenity green space – recreation spaces, play areas, outdoor sports facilities, community and roof gardens, street trees, village greens, commons, hedges, civic spaces, highway trees and verges;
- Allotments, city farms, community gardens, orchards and farmland;
- Cemeteries and churchyards;
- Green and Blue corridors – rivers, canals, road verges, rail embankments, cycling routes, rights of way;
- Nature conservation sites – designated sites and statutory and non-statutory Nature Reserves;
- Green space designations (selected for historic significance, natural beauty, recreation, wildlife, or tranquillity);
- Archaeological and historic sites;
- Functional green space such as sustainable drainage schemes (SuDS) and flood storage areas; and,
- Built structures such as living roofs and walls, bird and bat boxes, roost sites.

Table 1: Definition of Green Infrastructure

1.4 Relationship with the Barnet Local Plan and wider Council policy objectives

How does the SPD fit with the Local Plan?

- 1.4.1 The statutory development plan is the starting point when determining planning applications for the development or use of land. In Barnet the Development Plan currently comprises the London Plan (March 2015) together with the Local Plan Core Strategy and Development Management Development Plan Documents (DPDs) both adopted in September 2012 and the Mill Hill East (2009) and Colindale (2010) Area Action Plans. This SPD expands on this policy framework by providing further details on Barnet's strategic approach for the creation, protection and management of networks of green infrastructure, together with further guidance in ensuring improvements to the network of open spaces.
- 1.4.2 This SPD has been prepared in accordance with relevant national legislation planning Act/s and regulations, the National Planning Policy Framework (NPPF) and the on-line National Planning Practice Guidance (NPPG). Complying with and supplementing policies and proposals in Barnet's Local Plan, the SPD is be capable of being a material consideration; providing further detail on the implementation of Local Plan policies¹¹ that applicants must follow to ensure they meet policy requirements. It is the intention that this SPD also informs the updating of the Council's Infrastructure Delivery Plan (IDP) and the drafting of relevant policies to be included within the revised Local Plan that will look ahead to 2036.

How does Green Infrastructure help in meeting wider policy objectives?

- 1.4.3 Improving or creating green space in an area can deliver multiple benefits including: providing health benefits to the local community, improving air quality, improving biodiversity, acting as a force for social cohesion, acting as a carbon sink to remove carbon dioxide from the atmosphere and preventing flooding by reducing rainfall runoff on hard surfaces. Therefore, in terms of national, regional and local policy GI acts to assist in meeting a broad range of aims and objectives including:
- Achieving sustainable transport targets by reducing dependence on the car;
 - Increasing non-motorised travel, especially cycling and walking, by providing more opportunities to use alternative forms of transport;
 - Addressing integrated transport provision by making connections with bus, tube and train stations;
 - Addressing traffic safety issues by educating children by creating and enabling safer routes to school (and work), and promoting non-motorised transport as an alternative to the car;
 - Pursuing and increasing 'access for all' by catering where possible for people of all abilities from all sections of the community;
 - Creating new routes, improving existing rights of way and by providing information about access opportunities;
 - Asserting and protecting the rights of the public to use the rights of way network;
 - Tackling the obesity agenda through improving health by providing more opportunities and encouraging people to take more exercise;
 - Providing urban / rural links to increase the opportunities for recreation and employment and improving access to services in more rural parts of the Borough;

¹¹ Specifically in relation to GI, implementation of Core Strategy Policy CS7 and Development Management DPD Policies DM15 and DM16 - text of policies given at Appendix B.

- Contributing towards environmental improvement by helping in the reduction of pollution and congestion, and in the protection and enhancement of natural habitats;
- Contributing to the local economy by attracting visitors who spend in shops etc and increase the need for economic development; and
- Facilitating employment opportunities through economic development / regeneration and enabling access to more jobs.

1.4.4 More specifically, working across the Council and in partnership with other agencies that have similar aims, GI can facilitate and help partners realise their own policy objectives. Encouraging health through GI for example helps address the Council's objectives set out in the Health and Wellbeing Strategy¹².



¹² Joint Health and Wellbeing Strategy 2015-2020 <https://www.barnet.gov.uk/citizen-home/public-health/Joint-Health-and-Wellbeing-Strategy-2015-2020.html>

Section 2: Multi-functional and wider sub-regional context

2.1 National Planning Policy Framework and Duty to Cooperate

2.1.1 The conservation of the natural environment including landscape is identified as a strategic priority within the NPPF that local plans should contain a clear strategy for enhancing.¹³ Further, LPAs should set out a strategic approach in local plans to plan positively for the creation, protection, enhancement and management of green infrastructure and biodiversity networks.¹⁴ Local plans should also include policies which plan for biodiversity at a landscape scale across local authority boundaries; identify and map local ecological networks including the hierarchy of designated “sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation.”¹⁵ The table below sets out key natural environment issues informing the contents of this SPD, together with the relevant planning policy and guidance context.

Key Issue	National and Strategic Context Information	Source
Existing habitats and species	<ul style="list-style-type: none"> • Strong protection should be given to Sites of Metropolitan Importance for Nature Conservation; Sites of Borough or local significance should also be given a level of protection commensurate with their status. • Restore and enhance the Blue Ribbon Network. • Development should be resisted which has a significant adverse impact on protected or priority species identified in UK, London (BAP). • BAP habitats and species are a material consideration on planning along with UK and European protected species. • London BAP contains 214 priority species, 12 of which have action plans, and 14 priority habitats which also have action plans: www.lbp.org.uk. • The Council must have regard to BAP priorities in exercising all of its functions. 	<p>London Plan</p> <p>UK Biodiversity Action Plan (BAP) UK BAP</p> <p>London BAP</p> <p>Natural Environment and Rural Communities Act 2006</p>
Design of new developments	<ul style="list-style-type: none"> • Opportunities for creating, enhancing and managing wildlife habitat and nature landscape should be explored and acted upon. • Greening should play an integral role in the urban environment. • Biodiversity should be promoted through the form and design of new development. • Biodiversity aspects should be incorporated into development proposals at the earliest stage. 	<p>Connecting with London’s Nature:</p> <p>The Mayor’s Biodiversity Strategy</p>

¹³ NPPF paragraphs 156-157

¹⁴ NPPF paragraph 114

¹⁵ NPPF paragraph 117

biodiversity, ecological networks and flood risk management are all matters better planned at a strategic scale.

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2.2 Barnet's inter-connected Green Infrastructure network

- 2.2.1 As one of the greenest boroughs in London, Barnet's existing GI network forms part of an inter-connected system, being significant at both the borough and sub-regional scale, it cannot be considered in isolation. Two areas (Brent Valley & Barnet Plateau and Lea Valley & Finchley Ridge) are included within the framework of the All London Green Grid and northern parts of the Borough also form part of Watling Chase Community Forest.
- 2.2.2 In seeking to demonstrate how Barnet's GI sits within the wider GI network, this SPD identifies networks across the wider sub-region of north London and includes reference to relevant GI activities and projects in adjacent local authority areas. Such networks help shape the Council's willingness to secure wider landscape GI and ecosystem benefits. For example, the concept of establishing a regional park in North West London has previously been highlighted in the North-West London to Luton Corridor; the area identified for potential regional park designation extending from the Welsh Harp¹⁹ along the River Brent and its tributaries (Dollis Brook and Silk Stream) together with the Dollis Valley Green Walk.
- 2.2.3 There are many organisations and existing partnerships working together to ensure that economic growth and development is achieved sustainably through planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure. Working at a sub-regional scale reveals connections, synergies, pressures and opportunities which may not be apparent at a local level and is a principal reason for looking beyond the Borough to support sustainable economic growth across the wider sub-region.

¹⁹ Also known as Brent Reservoir and owned and managed by Canal & River Trust and designated as a Site of Special Scientific Interest

Potential benefits of sub-regional working

- Common agenda for action and supporting evidence base.
- Ensuring strategic issues are considered at their appropriate scale.
- Consistent management of GI assets that cross administrative boundaries.
- Partnership working and a forum for bringing partners together.
- Common framework to attract and guide investment in green infrastructure.

Table 3: Benefits of Sub-Regional Working

2.3 Partnership working at the sub-regional level

Mayor of London's Environment Strategy and All London Green Grid

2.3.1 The Mayor of London's emerging Environment Strategy, a draft of which has been published for consultation²⁰, is wide ranging in terms of its coverage. In this Strategy, the Mayor has a legal duty to set out policies and proposals relating to the natural environment and biodiversity. In addition to green infrastructure and biodiversity, the Draft Strategy includes coverage of the cross cutting issues of water, waste, energy, climate change mitigation, noise and air quality. In order to protect and enhance London's natural environment and green infrastructure the following actions are highlighted:

- Increasing London's green cover making over half of London green by 2050 and increasing canopy cover by 10%;
- Conserving and enhancing wildlife and natural habitats; and
- Valuing London's natural capital as an economic asset and encouraging greater investment in green infrastructure.

The Mayor's Strategy also has an aim for London to become a National Park City where more than half of its area is green; where the natural environment is protected and the network of green infrastructure is managed to benefit all Londoners²¹.

2.3.2 As London grows it becomes ever more important to protect and improve green spaces to secure the benefits provided by green infrastructure. Consequently, the city must become greener while it also becomes denser and more compact. In his 2016 A City for all Londoners consultation document²² the Mayor has signalled that his forthcoming London Plan will give continued protection of the Green Belt and Metropolitan Open Land and publicly accessible green space. In addition, consideration will be given to policies that ensure development outside the protected green space network does not lead to an unacceptable loss of existing local green infrastructure benefits. Therefore, it is expected that developments should avoid reducing the overall amount of green cover and the benefits this provides. The Draft Environment Strategy also states that the Mayor will provide advice to householders about how gardens can contribute to improving green infrastructure at a local level. Also anticipated in his forthcoming London Plan, a consultation draft of which is expected later this year, is the Mayor's stated intention to develop a new 'Urban Greening Factor' that provides a methodology and metric that can be used to

²⁰ Ibid

²¹ The National Park City was inspired by the Greater London National Park City Initiative <http://www.nationalparkcity.london/>

²² https://www.london.gov.uk/sites/default/files/city_for_all_londoners_nov_2016.pdf

determine how much urban greening should be incorporated into new high density development. Examples given of what this might include are greener public realm (green streets), publicly accessible roof gardens, green roofs and space for growing food.

- 2.3.3 The Mayor's Draft Environment Strategy includes reference to the All London Green Grid (ALGG)²³, a city-wide scheme to create green corridors between the capital's open spaces for people and wildlife. The ALGG creates opportunities for people and wildlife to travel safely between the capital's parks, nature reserves and waterways; the objective being to create a 'green infrastructure'; network of corridors and links that join many of these places together. The protection of these green areas is documented in the All London Green Grid Supplementary Planning Guidance comprising 11 green and open spaces Area Frameworks that make up the ALGG and includes areas of Barnet (Finchley Ridge and Barnet Plateau). In his Draft Strategy²⁴ the Mayor has committed to working with stakeholders to review and update the framework provided by the All London Green Grid, identifying priority areas for green infrastructure investment. With increased recognition of the potential economic benefits of investing in green infrastructure the Mayor, in seeking to ensure financial support for strategic green infrastructure projects, has stated that he will work with others in exploring new approaches to investment. Regarding the existing network of Sites of Importance for Nature Conservation (SINC), the Mayor seeks to strengthen wildlife corridors and the creation of new landscapes that in a London context deliver the most valuable green infrastructure. .



Green Arc

- 2.3.4 Having the objective of reinvigorating the original Green Belt vision of a publicly accessible and interconnected arc of land surrounding London, the Green Arc is an initiative based on cooperative partnership working for enhancing the Green Belt in Hertfordshire and Essex creating opportunities for recreation and new wildlife habitats. At the pan-London level the London Green Belt Council, a grouping of about 80 organisations, campaigns to support protection of the Green Belt. As opportunities arise for increasing connectivity between London's green spaces, the Council will continue to work with partners to deliver projects which further the initiatives and aspirations set out in the Mayor's Draft Environment Strategy, including the All London Green Grid and Green Arc objectives.

²³ Set out in Supplementary Planning Guidance to the London Plan

²⁴ Ibid p.178

Watling Chase Community Forest

2.3.5 The Watling Chase Community Forest forms part of Barnet’s GI. Established in 1991, the Community Forest extending from the north of the Borough into south Hertfordshire covers an area of 188 sq km. The aim of the Community Forest as set out in the Watling Chase Community Forest Plan (WCCFP) is to see much of the area under positive and appropriate management by 2025 entailing a substantial increase in trees and woodland. The WCCFP and Greenway Strategy were both produced around the turn of the century and Hertsmere Council subsequently in 2011 produced a Green Infrastructure Plan.²⁵ However, over the intervening period it is understood that the Greenways Strategy was effectively wound up following resource cuts and the associated WCCFP is now less frequently referenced given that individual section 106 planning obligation contributions are rarely collected following introduction of CIL.

Hertfordshire County Council and Hertsmere Council

2.3.6 Within Hertsmere, Hertfordshire County Council is the lead body for the majority of GI work including Rights of Way. There are no GI related schemes close to Barnet’s boundary with Hertsmere and Hertfordshire. Most of the Greenways routes are located further north into Hertsmere including routes heading out of Borehamwood or Shenley. Other than implementing a limited number of pedestrian / cycling improvements within their parks, there appears to be little GI related activity taking place within Hertsmere at present.



²⁵ Hertsmere Borough Green Infrastructure Plan – Prepared by Land Use Consultants March 2011

London Borough of Enfield

- 2.3.7 Enfield Council are understood to be interested in providing guidance on green infrastructure but have not yet progressed as far as the production of a draft document.

Other neighbouring London Boroughs

- 2.3.8 None of the other neighbouring London Boroughs (Brent, Camden, Harrow and Haringey) have expressed an intention to produce guidance on green infrastructure in the near future. The Council will however continue to keep the GLA and all neighbouring authorities fully apprised of progress made in relation to GI matters.

Section 3: Barnet’s Green Infrastructure Network and related Plans and Strategies

- 3.1.1 In its response to the CLG Select Committee’s report on the future of public parks²⁶ the Government, commenting on the value of parks in planning for their future, recognises, “the range of important services provided by parks and from having good access to them, such as health and wellbeing, air quality improvement, urban cooling, carbon sequestration, sustainable urban drainage, noise attenuation, and a more sustainable local economy.” The GI network is one of the Borough’s most distinctive features and valued assets with over 200 parks and open spaces owned and managed by Barnet Council which, together with public gardens and natural landscapes, provides a wealth of valuable wildlife habitats threaded through the urban areas. In terms of current Sites of Importance for Nature Conservation in Barnet²⁷ the southern part of the borough includes the Welsh Harp Reservoir SSSI; there are 8 Sites of Metropolitan Importance; 10 Sites of Borough Importance (Grade I); 25 Sites of Borough Importance (Grade II) designated Sites of Importance for Nature Conservation and 22 Sites of Local Importance. The Welsh Harp, together with the River Brent, Silk Stream and Pymmes Brook, form part of the Blue Ribbon Network for London that has policy recognition within the London Plan.



²⁶ Government Response to CLG Select Committee Report: The Future of Public Parks, September 2017 (recommendation one)

²⁷ Listed in Table 17.2 Sites of Importance for Nature Conservation in Barnet, Development Management Policies DPD, September 2012

3.1.2 The following documents play a key role in enhancing and protecting Barnet's open spaces and leisure activities:

- Playing Pitch Strategy 2017
- Tree Policy 2017
- Parks and Open Spaces Strategy 2016
- Health and Wellbeing Strategy 2015-20
- Sport and Physical Activity (SPA) Strategy 2014
- Sport and Physical Activity (SPA) Needs Assessment 2012
- Open Space, Sport and Recreational Facilities Needs Assessment 2009

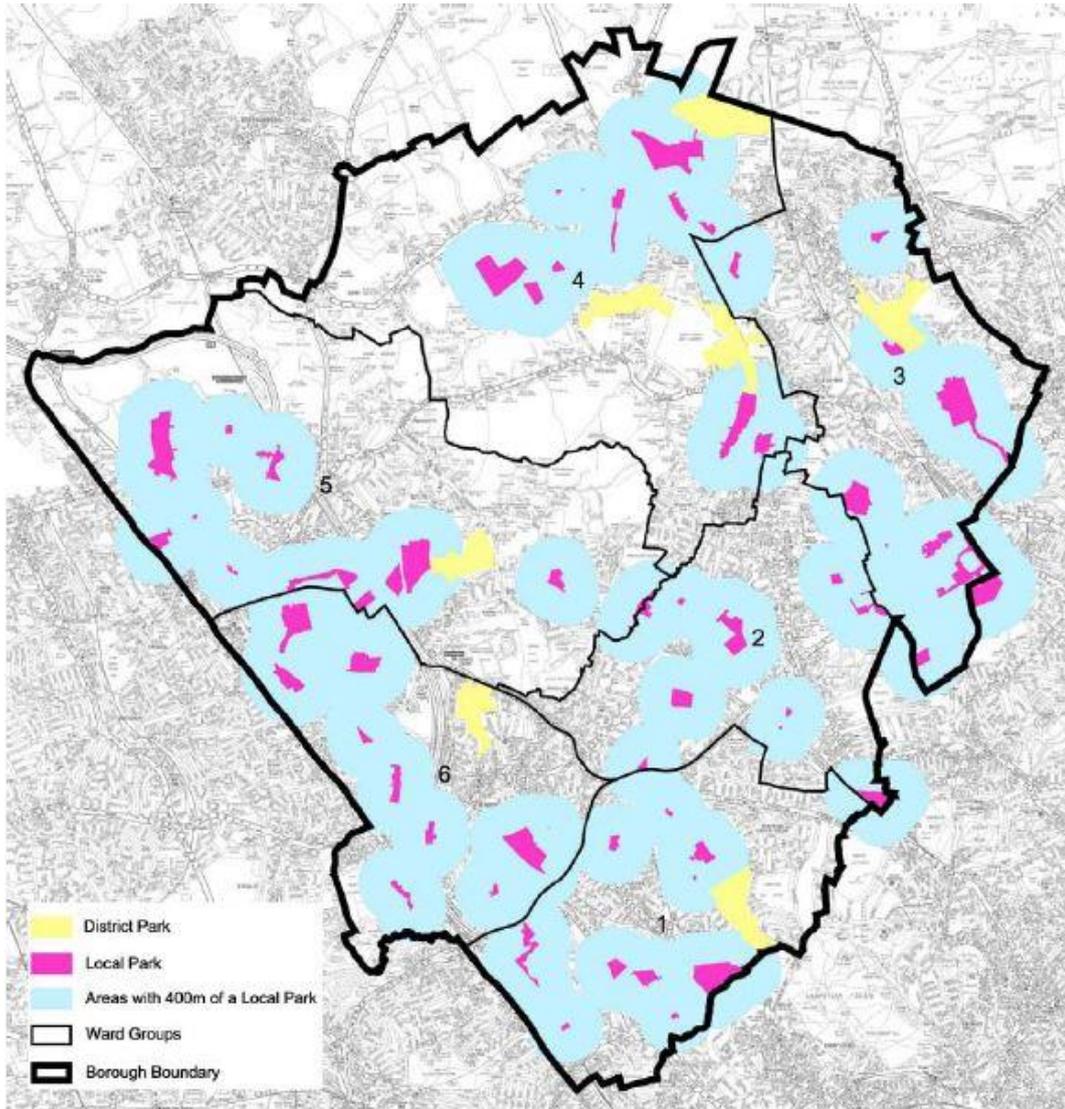
3.2 Parks and Open Spaces Strategy

3.2.1 In May 2016 Barnet adopted a new Parks and Open Spaces Strategy (POSS). This strategy, in considering the role that parks and open spaces play within the Borough, recognises that they have the potential to support a wide range of other cross-cutting strategic priorities including the environment, biodiversity, education, employment, community safety, regeneration and community engagement.

3.2.2 Barnet has a total of 73 public parks and commons accessible to the public ranging in size from a 0.04ha playground up to the 74ha Monken Hadley Common²⁸. Local planning policies, in taking account of the needs for public parks and opportunities for new provision, need to be based on robust and up-to-date assessments of those needs and opportunities. Within Barnet's Local Plan these have been categorised in accordance with the public open space hierarchy set out in the London Plan. There are seven parks and commons of 20ha or more classified as District and the remaining 66 Local Parks provide a total area of 488ha. Map 10 in the Core Strategy²⁹ reproduced below highlights parts of the Borough that are deficient in public open space. An updated assessment of park catchment areas included within the 2016 POSS, showing the deficiency in access for either Local or District Park, will provide the basis for updating the new Local Plan.

²⁸ Monken Hadley Common, maintained by volunteers, comprises an approximately 2.5km long tract of land extending from Monken Hadley to Cockfosters tapering in width from about 0.5km to approximately 300m.

²⁹ Barnet's Local Plan Core Strategy, September 2012 p.83



Map 2: Public open space deficiency

3.2.3 The POSS identified the need to create new parks to address deficiencies in provision and developing of distinctive parks that reinforce the identity of neighbourhoods. It states that c£20m investment in new high quality green spaces will be incorporated within seven of the Council's eight regeneration and intensification areas (Dollis Valley, Mill Hill East, Granville Road, Brent Cross / Cricklewood, West Hendon, Colindale, Stonegrove / Spur Road and Grahame Park). It is anticipated that more of this investment will be spent in the south and west of the Borough where the population growth will be greatest over the next 20 years.

3.2.4 The POSS also includes reference to Green Belt in the context of the All London Green Grid and the aspiration for the establishment of a new regional park within Barnet by 2026.

3.3 Playing Pitch Strategy

3.3.1 The Playing Pitch Strategy (PPS), developed in accordance with current Sport England Guidance, quantifies the present and future need for outdoor pitch provision

in the Borough. Taking account of multi-functionality and provision in neighbouring authorities, the PPS allows for proper planning of the delivery and playing of future outdoor pitch sport as well as informing proposals for the development of new parks and open spaces and improvements to existing sites.

3.4 Barnet Tree Policy

- 3.4.1 Barnet Council is responsible for around 30,000 street trees, one of the highest in London, and 848 hectares of green spaces including 164 hectares of woodland. Council owned trees are situated in a variety of different environments, all of which require a tailored approach to management options. Effective tree management taking into account the needs of all people in Barnet is crucial in continuing the character of the Borough.
- 3.4.2 The Council uses its powers under section 197 of the Planning Act 1990 to make Tree Preservation Orders to protect trees and, where appropriate, require the planting of trees. Wherever possible, existing trees should be retained as part of any new development proposals. In accordance with the London Plan, any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s. If it proves necessary to remove an existing tree there should be adequate replacement planting to compensate for the loss of canopy cover with the replacement of trees being secured by condition. It is essential that the design of new development considers existing trees as well as the space trees require for growth. Tree protection, planting and maintenance should follow current arboricultural best practice, such as that produced in the relevant British Standards and the guidance produced by the Trees and Design Action Group, including *The Canopy*, *Trees in the Townscape* and the forthcoming *Trees in Hard Landscapes*.



3.4.3 The Tree Policy³⁰ has been produced to ensure that there is a consistent approach to the management of trees in the Borough. This includes trees owned and directly managed by the Council in different locations including parks, woodlands and street trees. The Tree Policy includes a five year action plan to help deliver its vision and aims and also supports the Environment Committee's Commissioning Plan 2015 – 2020.

3.4.4 The Tree Policy includes the following:

- Introduction and overview covering detail on the importance and benefits of trees, subsidence, biosecurity and funding.
- Specific Tree Policies, including;
 - i) Tree planting, management of the current tree stock and established maintenance programmes. Refusal of works, vehicle crossovers and tree removal.
 - ii) Policies for trees in a number of different locations and environments; street trees, parks and open spaces, woodlands, cemeteries and closed churchyards, privately owned trees and trees on land which is subject to planning and development.
- Barnet's vision for trees in the Borough and a five year action plan.

³⁰ The Barnet Tree Policy was approved by the Environment Committee September 2017.
<https://barnet.moderngov.co.uk/documents/s42011/Appendix%20A%20Draft%20Barnet%20Tree%20Policy.pdf>

Section 4: Green Infrastructure Benefits Analysis

4.1.1 In seeking to ensure that this is the first generation to leave the environment in a better state than when we inherited it, the Government has stated³¹ that it will shortly be producing a comprehensive 25 year Environment Plan charting how improvements to the environment will be made. Funding and delivery of GI is becoming increasingly difficult and there is a need to better understand the costs and benefits provided by the GI and review the way that it is managed. It is therefore necessary to ensure that investments made in open spaces deliver positive outcomes, protecting parks and open spaces for the future. Delivery needs to be targeted where there is the greatest need and the greatest benefit can be secured by projects. This requires smarter and more efficient working, reducing duplication and wasted resources.

4.2 Mechanisms for Green Infrastructure delivery

4.2.1 There is an increasing reliance on partnerships to meet the challenges of sustaining GI; also increasing recognition of the need to incorporate the benefits of the environment into decision making using a natural capital approach. In his Draft Environment Strategy³² the Mayor of London has signalled his intention to establish a London Green Spaces Commission to develop models for delivery and management of London's green infrastructure. He will also publish a London natural capital accounting framework, encouraging its use by boroughs. A Natural Capital Account for London's public green spaces will also be published alongside the final version of the Environment Strategy. This will demonstrate the economic value of public green spaces, supporting the business case for investment in these spaces. The Council recognises that co-ordinated approaches leading to production of robust and compelling evidence at the sub-regional scale can be successful in unlocking larger funding sources which may not be available at a more local level. Partnerships can help to share precious resources; overcome obstacles and build wider ownership around providing a GI that better meets local needs, is better protected, and is maintained for future generations. Therefore, this GI SPD seeks to strengthen existing partnerships and foster new collaborations with a widening range of organisations to secure the future of Barnet's GI.

4.2.2 There is a growing recognition of the economic value of the services derived from GI assets - for example flood alleviation and management, air quality and urban cooling. Demonstrating how multiple benefits of GI can be derived to organisations that have not traditionally been engaged in GI funding or delivery, for example health trusts are becoming aware of the benefits of GI for physical and mental health and well-being. The management, delivery and on-going maintenance of GI is less dependent upon the cyclical nature of grant funding. The London i-Tree Eco project reported in 2015³³ on the economic benefit to London as a whole of some of those benefits, specifically related to canopy cover. Capital Asset Value for Amenity Trees (CAVAT), which provided the structural value as part of that survey (and which was first given a borough-wide trial in Barnet), has planning uses which include placing a monetary

³¹ Government Response to CLG Select Committee report: The future of public parks, September 2017 (recommendation nine)

³² Ibid p.173

³³ [https://www.forestry.gov.uk/pdf/LONDONI-TREECOREPORT151202.pdf/\\$FILE/LONDONI-TREECOREPORT151202.pdf](https://www.forestry.gov.uk/pdf/LONDONI-TREECOREPORT151202.pdf/$FILE/LONDONI-TREECOREPORT151202.pdf)

value on public trees affected by a development and therefore to set a realistic cost for the compensatory planting required if existing trees were to be removed, or damaged.

4.2.3 The sustainable delivery of Barnet's GI requires:

- Clear links with strategic planning policy, economic regeneration and the built development, e.g. through allocation of CIL monies;
- Increased engagement, policy and funding links to the wide range of organisations that derive benefits from GI;
- Systems for evaluating GI projects that focus on their multiple benefits, outcomes, outputs and values;
- A long-term commitment to support the on-going revenue costs of GI management and maintenance; and
- A flexible approach to partnership working.



4.3 Corporate Natural Capital Account

4.3.1 The economic benefits of GI are not easy to measure; the complexity of GI and the linkages with many different areas presents a particular challenge in devising an approach to record and evaluate information in a systematic way that enables the value open space provides to be demonstrated. This needs to identify who receives the benefits derived and how these can help delivery of the Council's statutory services, as well as improving decision making by making clearer the link between environmental management and economic performance of natural capital assets.

4.3.2 Drawing on the review of the sites considered in the Parks and Open Spaces Strategy, Barnet's Corporate Natural Capital Account³⁴ (CNCA) provides an analysis

³⁴ London Borough of Barnet Corporate Natural Capital Account (2017), Jon Sheaff and Associates

of the social, economic and environmental benefits generated by GI. It gives a system for judging the effectiveness of GI projects and the multiple benefits that they can be expected to deliver. Natural capital refers to the stock of natural assets and the CNCA provides a framework for collating information about those assets. It entails recording natural assets owned, managed or responsible for and the condition of each; provides a measurement of the value of the benefits these assets bring and establishes the on-going costs of maintaining the assets. In this way the process can be used to provide:

- A high level comparative estimate of the multiple benefits that might be generated by GI assets and/or GI project proposals;
- A more detailed benefits analysis of specific GI assets; and
- A 'before-and-after' style evaluation which can be used to predict the benefits of new GI projects.

- 4.3.3 The final output of a CNCA is production of a natural capital balance sheet that quantifies the benefits of natural capital assets under 'assets' and the maintenance costs under 'liabilities'. The information is critical to making informed decisions concerning CNCA used as a tool for identifying and articulating the impacts of different investments, enabling cost benefit analysis, and justifying investment. Following the creation of the initial CNCA baseline for open space, against which subsequent gains and losses can be calculated, the CNCA will provide an evidence base for future investment in the maintenance of natural capital assets and serve to support the taking of a joined-up approach to planning, regeneration, health provision, education, climate change adaption and leisure.
- 4.3.4 The CNCA does not take account of all natural assets, (e.g. parts of the green belt and agricultural land were not included within the scope of the POSS), nor of all the benefits that might be delivered. As the CNCA report acknowledges, further research might usefully cover matters such as: air quality regulation provided by habitat through pollution absorption; flood risk reduction benefits provided by natural habitats, mental and psychological health benefits and the impact open spaces and green spaces have on property uplift. The CNCA report explains that it should be noted that recreational values are likely to be a significant underestimate as values do not include benefits derived by tourists and children. It is also recognised that many of the services provided are co-dependent or intrinsically linked and that estimates of values provided by the same spaces / habitats risks double-counting.
- 4.3.5 The ability to monitor changes in the extent and quality of GI assets using an agreed set of data for describing Barnet's GI network could be included within the annually produced Authorities' Monitoring Report so that changes and trends can be reviewed on a rolling basis. The use of consistent categories of data to describe GI benefits would be likely to improve communication between the many organisations involved in planning and delivering GI. Through emphasising multiple benefits, the GI benefit evaluation can be used to inform planning decisions about changes in land use, masterplans for new development and the detailed design of sites for schools and housing.

4.4 SWOT Analysis of Previous Current and Proposed GI Management Arrangements

<p>Strengths</p> <ul style="list-style-type: none"> ➤ The number of partnerships and organisations actively engaged in GI delivery demonstrating local commitment and interest ➤ Barnet Council’s strong record of GI delivery and the management arrangements ➤ The number and condition of the GI assets within the Borough ➤ Willingness of relevant organisations to engage in GI delivery ➤ Sense of ownership and engagement of various voluntary groups ➤ Tree management practices 	<p>Weaknesses</p> <ul style="list-style-type: none"> ➤ Confusion over who has responsibility for various element of GI strategy and delivery ➤ No single partnership with overall responsibility or control over GI strategy or delivery at sub regional level crossing London borders ➤ Opportunistic approach to GI funding and delivery leading to delivery and management legacy issues ➤ Reliance on voluntary groups for management ➤ GI assets crossing administrative and operational borders with inconsistent management approaches ➤ Low profile of GI assets and their multiple benefits
<p>Opportunities</p> <ul style="list-style-type: none"> ➤ Actively promote multiple benefits of GI to all ➤ Provide new long term approach to GI including the development of Corporate Natural Capital Account analysis of GI assets ➤ Establishment of a new GI management and delivery structure ➤ Coordinated approach to Section 106 and CIL delivery ➤ Coordination and partnership working across administrative and operational borders ➤ Provide stronger link between economy and environment ➤ Economic Regeneration ➤ CIL & S106 funding approach ➤ Green Belt review informing more efficient and effective use of GI 	<p>Threats</p> <ul style="list-style-type: none"> ➤ Political changes and decision making ➤ Funding cuts ➤ Population and development pressures

Table 4: SWOT Analysis of GI Management Arrangements

Section 5: Green Infrastructure Themes and Guidance

- 5.1.1 As highlighted in the previous sections of this SPD, consideration of GI and the benefits it can bring must be viewed in a holistic way. People need a variety of open spaces for relaxation, play, socialising and sporting activity close to where they live. Barnet's open spaces must therefore be multi-functional in order to meet the needs of the Borough's communities and neighbourhoods. In addition to providing habitats for wildlife and the creation and enhancement of green corridors, GI can provide a range of environmental benefits including flood water storage, sustainable drainage, urban cooling and outdoor shade.
- 5.1.2 The diagram below illustrates health and wellbeing in a wider context. It emphasises environmental influences and identifies how planning and policy impacts health outcomes.



Barton & Grant (2006)³⁵

- 5.1.3 In relation to GI this section of the SPD identifies the cross cutting themes and policy areas. For ease of coverage guidance is provided in turn on each of the following:
- Natural Environment, Nature Conservation and Biodiversity
 - Health, Sport and Recreation
 - Climate Change Resilience and Adaptation
 - Economic Regeneration and Social Cohesion

³⁵ A health map for the local human habitat. *The Journal for the Royal Society for the Promotion of Health*, 126(6). Pp., 252-253.

- E. Green Transport and Accessibility
- F. Air and Water Quality
- G. Cultural Heritage

5.2 A) Natural Environment, Nature Conservation and Biodiversity

5.2.1 Barnet's 743 ha of publicly accessible natural space and habitats were historically created and maintained by methods such as grazing, wood-cutting and hay-cutting. The wood-pasture landscape includes rivers, open water, grassed areas, forest / woodland, natural heath, scrubland, common, grasslands and heathlands, lakes, bogs and ponds. Some of these habitats are rare and fragile. The Welsh Harp Reservoir, created in 1835 and into which the River Brent and Silk Stream flow, is designated a Site of Special Scientific Interest and comprises Barnet's largest expanse of water. As well as providing recreational uses it is a rich wildlife resource that is an important location for over wintering birds as well as affording other biodiversity benefits.

5.2.2 In addition to its parks, open spaces, rivers and green corridors, the richness of Barnet's biodiversity is also dependant on private gardens. The wildlife value of gardens and other private green spaces can be enhanced by for example growing nectar rich plants and trees and introducing ponds. Taken together this mosaic of natural habitats allows essential interconnection between the wildlife sites within the Borough and beyond. The Council is working to ensure measures to promote biodiversity and enhance the ecological quality and inter-connectedness of the Borough's green spaces in capital investment projects. The borough-wide Local Biodiversity Action Plan will serve to inform biodiversity interests.

5.2.3 Loss of irreplaceable habitats such as ancient woodland and aged or veteran trees will, by definition, always entail net loss. Developments should therefore be sensitively designed so that there is no net loss in the quality and quantity of habitat across a development site, to enhance biodiversity and increase connectivity between patches of urban habitat. London Plan priorities³⁶ stipulate that:

- i) There is no net loss in the quality and quantity of biodiversity.
- ii) Developers make a contribution to biodiversity on their development site.
- iii) Any loss of public assets (trees, greenspace) is adequately compensated for by the developer to the Council.

5.2.4 In his Draft Environment Strategy,³⁷ the Mayor of London has signalled his intention to implement a biodiversity offsetting approach for London. Biodiversity offsets are explained as being conservation outcomes resulting from actions designed to compensate for residual adverse biodiversity impacts arising from a development.

i) Protecting and enhancing statutory and non-statutory sites for nature conservation

Woodlands and Trees

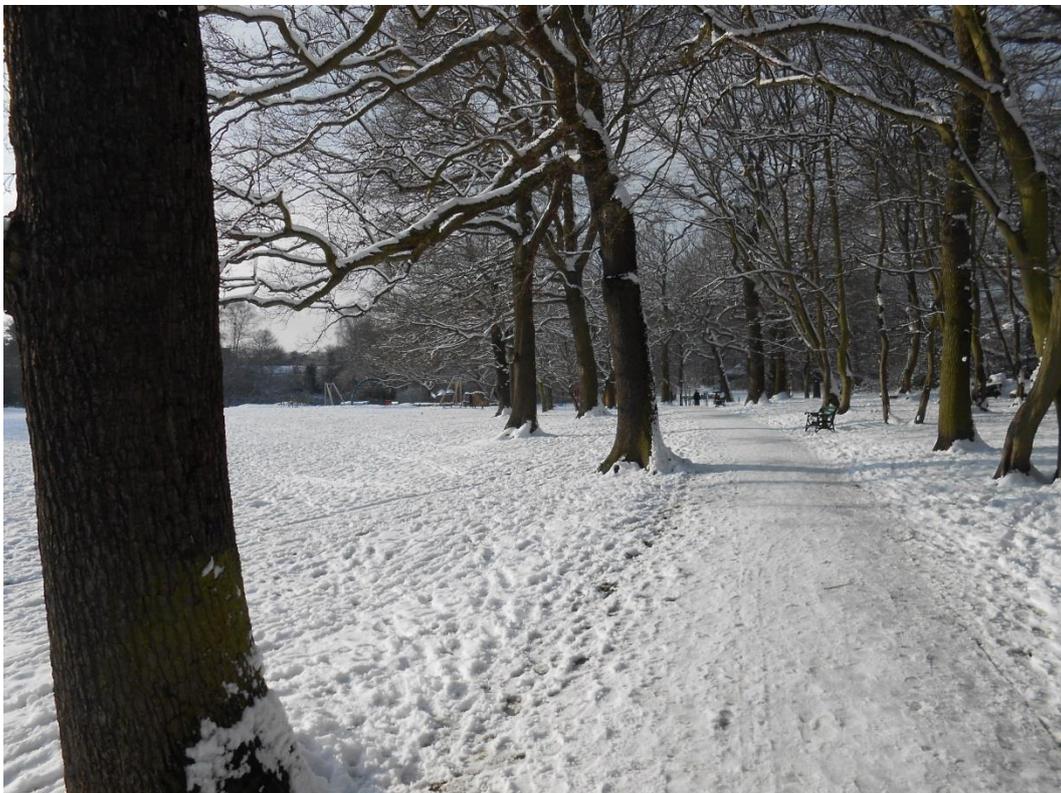
5.2.5 Forests and woodlands provide many environmental, social and economic benefits to society; to continue to provide these benefits the creation of new woodland is

³⁶ London Plan policies 5.3 and 7.19

³⁷ Ibid p.161

essential. Trees and woodland form an essential part of London’s design and landscape character, helping to cool the urban environment, (along with other green infrastructure), reduce air pollution and provide important health and social benefits. The ability of trees to intercept heavy rainfall, retain moisture and return water to the atmosphere through evapotranspiration is becoming increasingly important in helping reduce surface water runoff and therefore flood risk; rainfall can also be absorbed in tree pits where permeable surfacing has been installed. The Woodland Trust’s 2015 report³⁸ provides more details on the broad range and nature of the benefits associated with woodlands which it also seeks to quantify.

- 5.2.6 Earlier this year the Environment, Food and Rural Affairs (EFRA) Committee published a report "Forestry in England: Seeing the wood for the trees", calling for the Government to take action to increase woodland creation in England. Whilst private landowners clearly have the right to decide what they do with their land; the Government can provide incentives to use land for forestry.



- 5.2.7 The Mayor of London is committed to embarking on a major tree planting programme. The GLA’s *Preparing Trees and Woodland Strategy SPG*, states that trees and woodland across London should be considered as a whole, as an urban forest. It set a target to increase tree cover across London with the expectation that new developments will contribute to meeting this target. This means, rather than managing trees in a fragmented and ad hoc manner, ensuring that they are planned, cared for and protected in a truly co-ordinated way, for the benefit of all. In his draft Environment Strategy³⁹ the Mayor re-states the intention to expand London’s ‘urban forest’ including a major tree planting programme that supplements tree planting by boroughs, environmental organisations and other land managers. In London, there

³⁸ The Economic Benefits of Woodland, Europe economics, March 2015
<http://www.woodlandtrust.org.uk/publications/2015/03/the-economic-benefits-of-woodland/>
³⁹ *ibid* p.155

are approximately 8 million trees covering 20% of London’s land area which the Mayor is seeking to increase 10% by 2050 through protecting the existing resource and accelerating the current rate of tree planting to create new woodlands for recreation and wildlife habitat. Identified benefits of increasing the tree canopy include helping to mitigate the urban heat island effect, support biodiversity, reduce surface water flood risk and improve air quality. Barnet’s Tree Policy Action Plan includes an ambitious tree planting programme in Barnet.

5.2.8 Much of Barnet’s woodlands are of comparatively recent origin having grown on fields, commons and other previously open land over the last 200 years. This is woodland that has grown up or been planted on land previously cleared for agriculture or some other purpose. There is, however, some areas of surviving ancient woodland within the borough; defined as such as these have probably been continuously wooded since 1600 and generally considered to have never been cleared from prehistoric times. The best examples being Scratchwood, Oak Hill Woods, Hadley Wood, Big Wood and Little Wood. Several smaller pockets of old woodland have survived within the built-up areas; Turners Wood in Hampstead Garden Suburb and Cherry Tree Wood in East Finchley being relics of the once much larger Bishops Wood which formed part of the Bishop of London’s Estate. Barnet Gate Wood, near Moat Mount, is also ancient although like many other woods in the area, much of its under-storey has been replaced by rhododendron. These old woodlands on London Clay with pedunculated oak forming the prevalent tree canopy interspersed with hornbeam often together with ash, wild cherry, field maple, crab apple and the less common wild service tree. Below the canopy the under-storey typically comprises hazel, hawthorns, holly and grey willow.



5.2.9 As recognised in the Government’s Housing White Paper,⁴⁰ areas of ancient woodland and aged or veteran trees are irreplaceable habitats that should be

⁴⁰ Fixing our broken housing market DCLG Cm 9352 February 2017

afforded commensurate national policy protection. Therefore, the White Paper proposes that the presumption in favour of sustainable development specifically identifies that policies relating to sites comprising ancient woodland or containing aged or veteran trees provides a strong reason for development to be restricted. In 2014 the Communities and Local Government Select Committee in their investigation of the Operation of the National Planning Policy Framework⁴¹ recommended that paragraph 118 of the NPPF be amended to state that any loss of ancient woodland should be “wholly exceptional”. The EFRA Committee also concluded that ancient woodland⁴² is not being adequately protected in the planning system and expressed concern about the rate at which irreplaceable ancient woodland appears to be disappearing. Therefore, calling on the Government to implement the proposal in the Government's Housing White Paper to clarify protections afforded to ancient woodland and veteran trees in the NPPF. The Committee also recommended that the Forestry Commission and Natural England maintain an up-to-date, readily available public register of ancient and veteran trees and an inventory of ancient woodland annually.

5.2.10 All parts of the Borough benefit from the presence of trees and woodland and the Council will therefore take appropriate action to encourage continuity and enhancement of the tree cover on both public and private land. The Council has a duty under the Town and Country Planning Act 1990 to:

- a) Ensure, wherever it is appropriate, that in granting planning permission adequate provision is made for the preservation or planting of trees by the imposition of conditions; and
- b) Make Tree Preservation Orders, where appropriate, in connection with any permission.

Additionally, the Hedgerow Regulations 1997⁴³ give the Council responsibilities which may allow it to prevent the removal of important hedgerows.

5.2.11 There are many economic, environmental and social benefits to managing areas of woodland. Habitats such as woodland will change overtime and therefore without appropriate management plans in place can deteriorate. Active woodland management is the process by which landowners intervene to sustain the best features of a woodland. This has included coppicing of trees by which trees are cut down to ground level at regular intervals to stimulate growth and/or provide timber and firewood⁴⁴. Coppicing as an alternative to pollarding can rejuvenate woodland flora and is also beneficial in terms of biodiversity in encouraging regrowth of a thicker structure as shelter for nesting birds and habitats for feeding insects. Therefore, actively coppiced sites can support diverse woodland bird and butterfly communities, as birds like thick regrowth in which to nest and butterflies benefit from newly cut areas with sunny glades and flowers. It is important to preserve this special biodiversity through active management, particularly since many butterfly and bird species have declined drastically over the last 30 - 40 years.

5.2.12 Active woodland management is important to protect ancient trees and specialist flora and fauna; not only in helping monitor and protect against disease, but also to increase the biodiversity within woods by allowing in light to enable other plants, insects and woodland species to thrive. Wood-pasture habitats are also adversely

⁴¹<https://publications.parliament.uk/pa/cm201415/cmselect/cmcomloc/190/190.pdf> - paragraph 27

⁴² Defined as any wooded area (including its soil) that has been wooded continuously since at least 1600 AD.

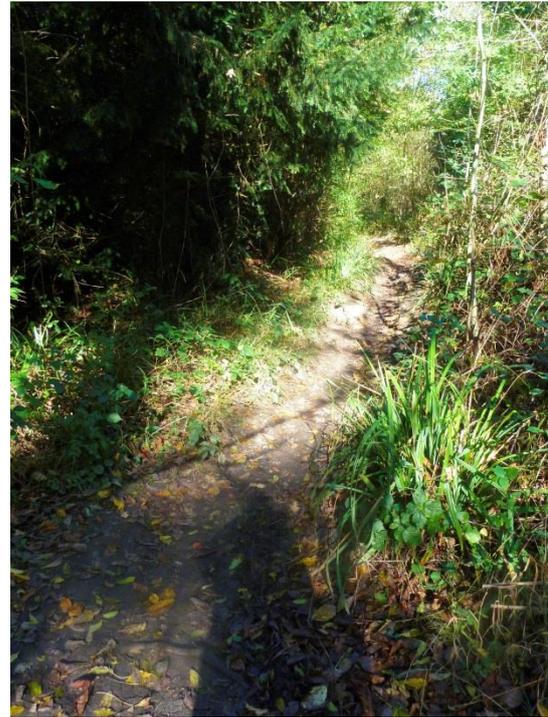
⁴³ Enacted under Section 97 of the Environment Act 1995

⁴⁴ Forestry Commission England, Practice Guide: Managing native and ancient woodland in England, 2010

affected by increased air pollution, which has a direct impact on tree health and growth, as well as fungi and flora; plant pests and diseases; and climate change and extreme weather.

- 5.2.13 Other vestiges of old woodland plant communities exist in parts of Barnet in the form of green lanes; one of the best examples being Arkley Lane. These lanes are flanked by very old hedgerows on top of banks generally supporting woodland flora with oak standards providing a linear canopy. Hornbeam, ash and field maple are often also present, especially in older hedgerows, whilst hazel, grey willow and blackthorn are typically interwoven with hawthorns in the shrub layer.
- 5.2.14 Across large areas of suburban Barnet, mature oaks are scattered along streets and in private gardens, many survivors from the area's agricultural past or former country estates. Affording significant wildlife value in providing a canopy element of woodland habitat within the urban fabric, woodland birds such as nuthatch, great spotted woodpecker and jay make frequent use of this resource for feeding.⁴⁵ Without careful planning, planting and management the spread of diseases such as chalara dieback of ash and oak processionary moth, together with future development pressures, could intensify existing problems and result in significant damage to the health and character of these ancient woodland, ancient hedgerows, green lanes and older woodland fragment GI sites. Biosecurity has been addressed in the Tree Policy and all trees planted in Barnet are recommended to spend a calendar year in the nursery to reduce the risk of imported pests and disease.
- 5.2.15 Secondary woodlands tend to have a lower diversity of native trees and shrubs than ancient woodlands. Oak often dominates the tree canopy in rural areas with birch frequent on more acidic soils. The shrub layer typically comprises hawthorn, blackthorn grey willow and holly with non-native species such as garden privet and snowberry also often present.
- 5.2.16 In the more urban areas a different type of secondary woodland is likely to develop with sycamore and ash typically the dominant tree species, often associated with goat willow, hawthorn and elder in the shrub layer together with "garden-escape" shrubs. The most characteristic locations for this type of woodland being along the river corridors and alongside railways. Areas of riparian woodland, such as those flanking the Dollis Valley, have been able to develop a varied structure comprising crack-willow, oak and sycamore with scrub of hawthorn and blackthorn. Ground flora in these damp shady riverside locations contains a mixture of common nettle, cow parsley, bramble and ivy. Sycamores, (a species towards which people's attitude has always been ambivalent – viewed by some as an 'urban weed'), being fast growing with prolific seed production and dense foliage, can prove problematic in land management terms suppressing the growth of other tree saplings. However, in urban areas sycamores provide an important source of early spring nectar for bees and other insects and often host large populations of aphids which are a valuable food source for small birds.

⁴⁵ Ibid.



5.2.17 The Barnet Tree Policy⁴⁶ will ensure a consistent approach to the management of trees in the Borough. The Council is committed to identify appropriate locations for tree planting and a programme that provides a net gain of trees across the Borough; strengthening landscape quality (through the planting of avenues, tree groups, woodlands and along park boundaries); addressing urban heat islands (achieved by concentrating tree planting in the south of the Borough), and tackling nitrogen dioxide levels by planting next to major roads.

River Corridors

5.2.18 The Welsh Harp (or Brent Reservoir) SSSI forms part of a regionally important network of wetlands that supports a wide range of wildlife. This large water body is the main focus for a significant number of visitors providing a place to view wildlife and a gateway into the Dollis Valley. The Council is currently delivering improvements to the Brent Reservoir in association with the West Hendon Regeneration Scheme and improvements to the West Hendon Playing Fields.

5.2.19 Streams brooks and ponds support a great diversity of animal and plant life. Each needs to be understood both as part of a network and as a separate entity, with its own individual management requirements. Climate change, encroachment by scrub and vegetation and silting up are all increasingly likely to become significant issues in the future. Measures such as clearance of vegetation and de-silting are expensive.

⁴⁶ London Borough of Barnet Tree Policy September 2017, Place Services Essex County Council
<https://barnet.moderngov.co.uk/documents/s42011/Appendix%20A%20Draft%20Barnet%20Tree%20Policy.pdf>

5.2.20 The Council is working with partners to adapt river valleys in the Borough to limit the impact of flooding and improve access for educational and leisure activities. Naturalising and de-culverting rivers and streams is important in seeking to restore watercourses. The Council is therefore working with partners such as the Brent Catchment Partnership to adapt, restore and enhance natural river habitats and processes. Work to complete the ALGG Dollis Valley Project is also underway. In conjunction with the Environment Agency opportunities for flood risk management are being assessed and the intention to also enhance biodiversity in river valleys as well as other parks and open spaces. These initiatives will bring sustainable and long-term benefits of limiting fluvial flooding, as well as improving access for educational and leisure activities.



ii) Protecting quality and character and promoting access to areas of open space

5.2.21 Social and environmental pressures, such as invasive species, pollution and increase in the number of visitors and competing uses, combined with budgetary and resource constraints, make habitat management more complex and increasingly challenging. Careful balance needs to be struck between welcoming users / visitors and preventing environmental damage and the disturbance of wildlife. Whilst seeking to encourage a site's popularity and public access, unless carefully managed, visitor numbers can place pressure on natural habitats.

5.2.22 Added pressures of urbanisation, development, the number of vehicles on roads that pass through, fragmented sites and site misuse all impact on the health and well-being of the GI and present a challenge to habitat management. The introduction of invasive non-native species has also had a negative effect on certain habitats.

- 5.2.23 Many grassland sites used to be grazed, maintaining a variety of 'sward' heights and allowing a wide range of insects from butterflies to grasshoppers to thrive. However, as the numbers of grazing animals declined during the 20th century, many areas became overgrown by scrub and trees.



- 5.2.24 There are also many fragmented, peripheral and small grassy areas in the Borough, including town and village greens, which can present a management dilemma. Through regular mowing, grass is kept neat and tidy and enables recreational and amenity uses; taller grass, on the other hand, looks more natural, is of greater wildlife value, but may not fit with the image of 'a green'. People are often divided on the issue of mowing with members of the public commenting on cut or uncut grass, depending on whether they want to see more sustainable, ecologically-valuable grasslands, or neater, more accessible areas. Frequent mowing is expensive and, in the current economic climate, increasingly hard to justify. Longer grass creates the right conditions for many species to thrive, providing a home for a range of insects, animals and invertebrates. However, in the more suburban areas of the Borough uncut grass can look untidy; attract litter and dog fouling, giving the impression of an unmanaged and neglected site.

- 5.2.25 Barnet Gate Woods, Moat Mount Open Space, Scratchwood Open and Stoneyfield Park are all Green Belt sites situated in the north west of the borough that were assessed in the 2016 POSS as being of low quality / high value and, as such, are priorities for investment. The requirement to improve the sites is emphasised by the levels of anti-social behaviour taking place in some of them and the poor condition of some infrastructure and facilities. The Council recognises the need to improve these sites and is to undertake a feasibility study/options appraisal exercise to identify proposals following consultation with the public, stakeholders and partners.



iii) Ensuring protected species and habitats are not adversely affected

Nature Conservation and Protected species

5.2.26 The natural landscape of many open spaces is rich in wildlife and one element of preserving its natural aspect is to conserve the native species that live in its various habitats. Certain wildlife species are statutorily protected under UK and European legislation. Natural England provides a list of protected species as well as guidance relating to these protected species. The London Biodiversity Action Plan (BAP) identifies important habitats and species, categorised under birds, fungi, invertebrates, vertebrates and plants, as well as setting targets for improvement in both quality and quantity. The most commonly found protected species in Barnet include bats and great crested newts which all have strong legal protection as European Protected Species; and also grass snakes, the common lizard, common frog, toad and native newts and slow worms, all of which are protected against injury and/or commercial sale under UK legislation⁴⁷. All nesting birds are also legally protected under the same legislation and the Conservation of Habitats and Species Regulations 2010 because of their vulnerability to disturbance and population levels. Ground-nesting species, such as Skylarks, are amongst the most vulnerable. Other bird species are listed for extra protection (under the same Act) from impacts like disturbance, including birds like Kingfishers and Barn Owls that breed or for which the GI provides important feeding areas. Other species in decline such as bumble bees, whilst not afforded legal protection, are still vital to protect as they play a key

⁴⁷ The Wildlife and Countryside Act 1981

role in the ecosystem. The Council is currently preparing a local Barnet BAP which will provide more detail and guidance on biodiversity interests.



- 5.2.27 Lichens are sensitive natural indicators of air pollution and therefore used to monitor pollution. Where species numbers have increased it is invariably not the same ancient woodland species that are recovering. Instead, many of the species that have re-colonised are those that are tolerant to the prevailing nitrogen pollution. Lichens are particularly reduced close to roadsides with only the most pollution-tolerant species able to survive in these areas.
- 5.2.28 In addition to air pollution, it is also necessary to deal with spills of harmful pollutants, such as oil and asbestos, as well as light pollution which can disrupt animal behaviour and damage the natural aspect of the GI.
- 5.2.29 There is a need to control the spread of certain species of plants and animals; failure to do so may result in established native species becoming threatened and, in some cases, disappear altogether. Whilst new controls have come into effect requiring the statutory notification of imports of specified species, an increase in the number of new pests and diseases mean that the UK's trees and plants face unprecedented threats. Non-native species are foreign plants and animals that have been introduced to the UK - either deliberately or accidentally - by humans. Some cause no significant harm, while others damage the environment by affecting the ecological balance and appearance of our natural habitats. These non-native invasive species compete with, and often displace, important local native species, leading to losses in biodiversity. Therefore, as stated in the Barnet Tree Policy, it is very important that when planting trees bio security guidelines are followed so as to prevent or reduce the risk of the transmission into the Borough of emerging pests, diseases and invasive species detrimental to the health of trees.
- 5.2.30 A number of non-native species have either already impacted negatively on the local biodiversity, or have the potential to do so. The introduction and spread of non-native invasive species e.g. the grey squirrel, Japanese Knotweed, Himalayan Balsam or

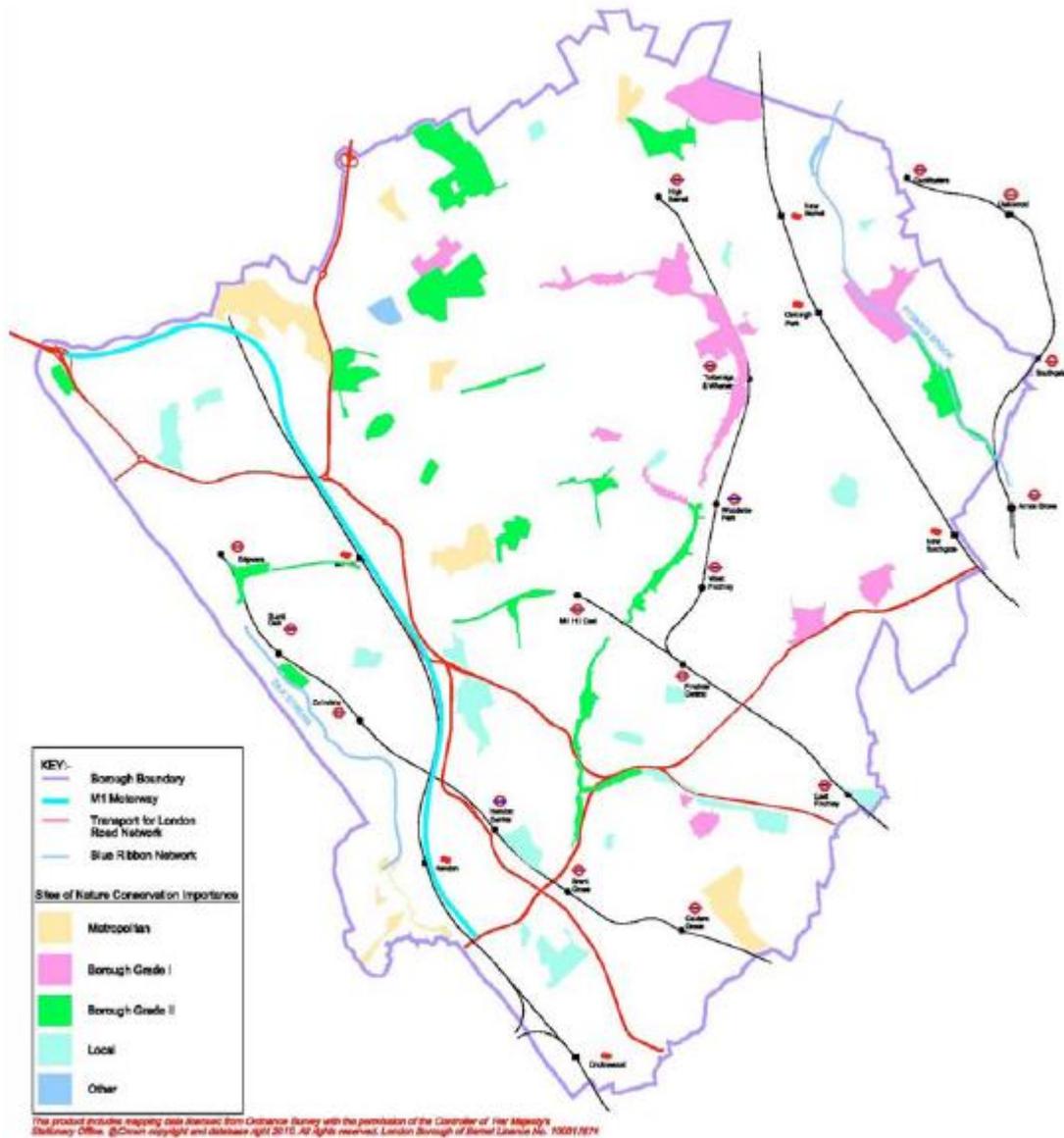
the Box Tree Moth can prove very difficult to prevent or control. The grey squirrel preys on native birds, occupies bird nesting sites and strips bark, causing widespread and in some cases fatal damage to trees. These species represent major management challenges and costs. Monitoring and control measures can be difficult and expensive. Some invasive species cause problems for indigenous flora and fauna. Turkey oaks, for example, can displace or hybridise native oak species and act as a host for the Knopper Gall Wasp, which reduces the fertility and regeneration of new native oak trees.



- 5.2.31 Within the Borough there are a number of recognised sites of importance for nature conservation (SINC) that have been identified in a hierarchy of importance.⁴⁸ Protecting valuable habitats from development, these are areas⁴⁹ of particular importance to nature conservation where public understanding of nature conservation issues is encouraged. The SINC network also seeks to ensure that people are able to access wildlife rich spaces close to where they live. In line with standards set out in the London Plan, most of the Borough is within 1km of Metropolitan or Borough Grade Nature Conservation Sites and 500m of any nature conservation site. An assessment undertaken to inform the 2012 Local Plan documents identified 15 nature conservation sites having poor accessibility by foot, cycle or public transport and also highlighted that access more generally would be enhanced by improved signage. Consideration needs to be given to the ability of species to move between different types of habitat along rivers / streams and green corridors. The Council's objective is to maintain and enhance existing networks by avoiding fragmentation and seeking to address any identified missing links.

⁴⁸ Development Management Policies DPD (2012) - Table 17.2 Sites of Importance for Nature Conservation in Barnet refers.

⁴⁹ Designated under the National Parks and Access to the Countryside Act (1949)



Map 3: Barnet Sites of Nature Conservation

5.2.32 Ponds and lakes provide a vital habitat for plants, wildlife and fish, and a very valuable resource for anglers of all abilities and ages. The Council aims to manage fishing ponds and lakes to high standards, providing ecologically healthy habitats that offer a great fishing experience. The Darland's Lake Nature Reserve in Totteridge includes a lake which is not currently maintained. Assessed as low quality / low value within the POSS, it is understood that local residents would like to see the lake brought into use for educational visits. However, this would require improvements to the maintenance regime for which the Council has no budget provision. The Nature Reserve is also in need of improvements to pathways and tree management. Therefore, the Council is currently exploring the scope for alternative arrangements to be established to take over responsibility for the operation and management of the site. The Council is considering the possibility of alternative management arrangements for other sites too. The Hampstead Garden Suburb Trust has, for example, approached the Council, requesting that the freehold of the Central Square site, assessed as low quality / low value within the POSS, be transferred back to the Trust.



iv) Allotments and Community Food Growing

5.2.33 The London Plan⁵⁰ states boroughs should protect existing allotments and also identify other potential spaces to use for commercial food production or community gardening. Barnet has the largest number of allotment sites per person of any London borough. Allotments have many benefits for health and wellbeing. Additionally, they can increase the access to affordable and sustainable, fruit and vegetables. As well as providing a sustainable local provision of food, allotments also have significant benefits for wildlife. Creating an important green oasis in an otherwise urban environment, allotments are able to provide a linking corridor or stepping stone between other green and blue habitats that together make up the GI network across the Borough.

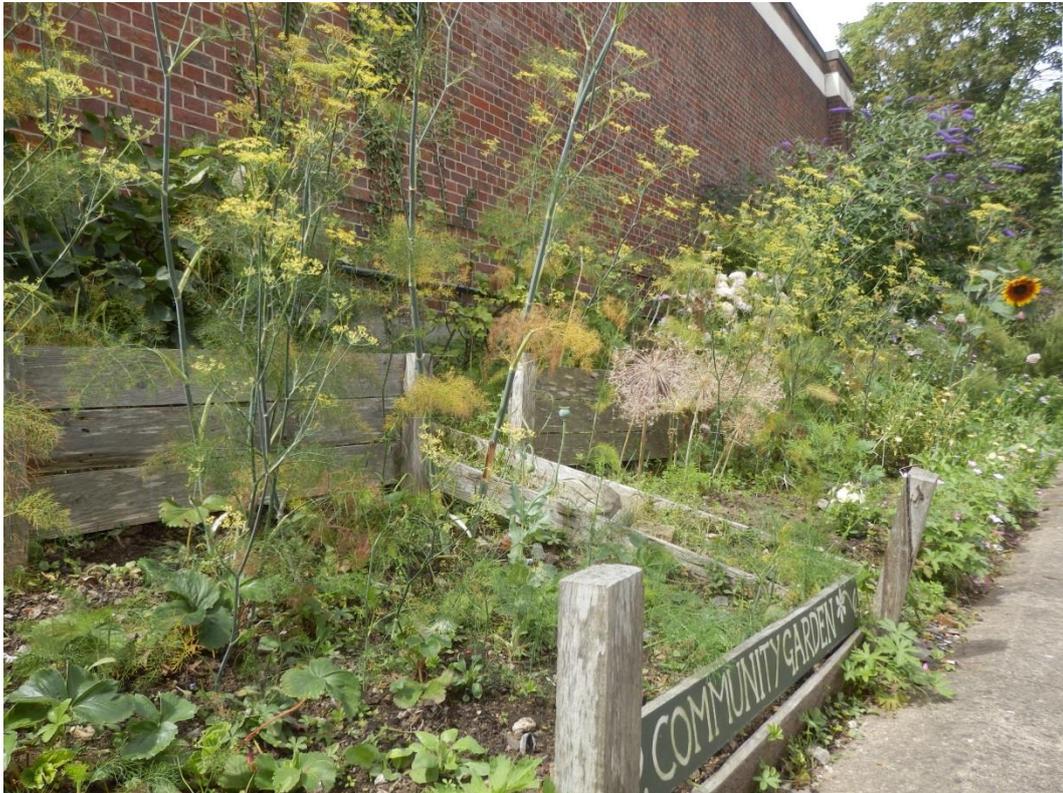
5.2.34 The Core Strategy⁵¹ includes reference to enhancing local food production through the protection of allotments and supporting community food growing including the Mayor of London's Capital Growth Initiatives. In 2015 there were over 300 people on allotment waiting lists in Barnet, demand that could be met through regeneration projects creating additional community gardens or allotment sites. As recognised by the Mayor in his Draft Environment Strategy,⁵² in recent year's initiatives promoting food growing and community managed pocket parks have become increasingly popular as local projects make better use of underused or neglected local green spaces. Growing food as close to the point of consumption as possible contributes to climate change targets by reducing emissions associated with the food supply chain. Additionally, it increases access to fresh food and provides physical activity opportunities, leading to improved health outcomes. A report by the Royal Institute

⁵⁰ Policy 7.22 Land for Food

⁵¹ Policy CS7

⁵² Ibid. p157

of British Architects⁵³ found that areas that performed worst for child obesity, and diabetes and physical activity in adults, had a fifth less public green space than the b



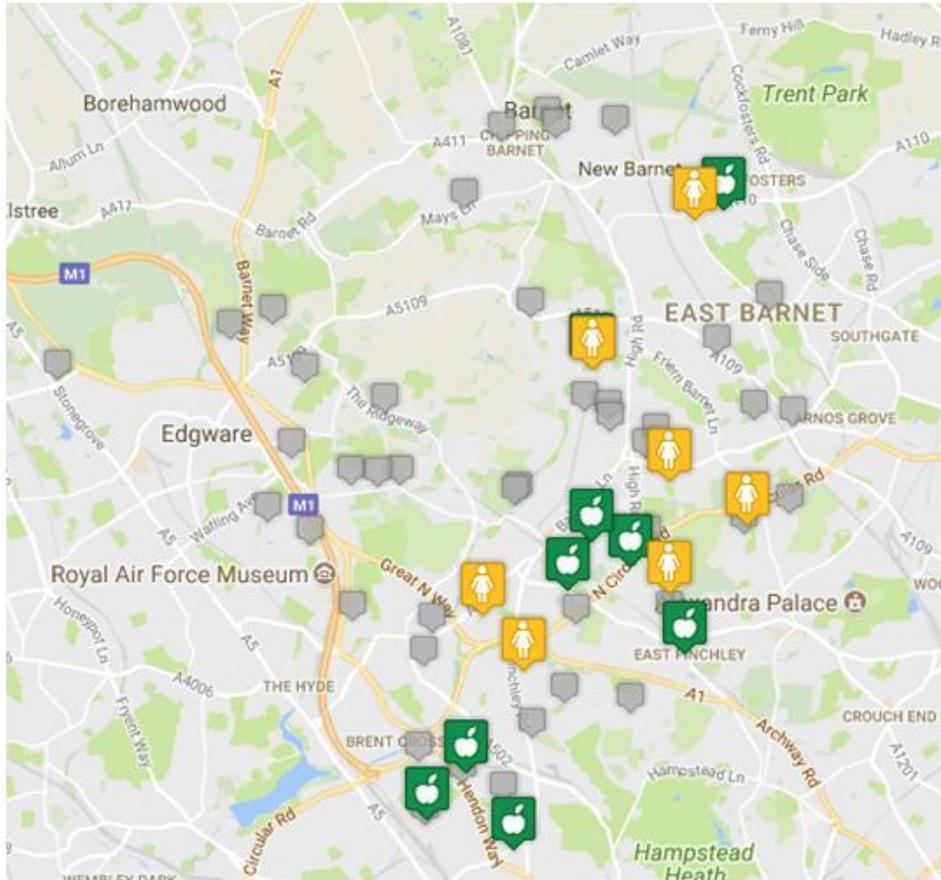
5.2.35 Local food growing space in Barnet ranges from agricultural use of the Green Belt, communal gardens in amenity space, school grounds, community centres and orchards. With climate change and developing technologies the type and range of food that can be grown locally is likely to increase over coming years. A significant number of the 2,553 food growing spaces across London⁵⁴ are in Barnet. The Capital Growth network in London, run by Sustain, provides training and opportunities to learn about food growing, often leading onto formal training or employment as a result of involvement in a Capital Growth project. The map below shows community food growing spaces in Barnet that are registered with Capital Growth⁵⁵. Increasingly schools too are promoting food growing on their land as an educational resource for children⁵⁶. Food growing in schools has been shown to help children and young people achieve learning, skills, health and well-being outcomes. Martin Primary School in East Finchley has an orchard comprising apple, pear and cherry trees has been established in recent years.

⁵³ City health check, How design can save lives and money, (2013) Royal Institute of British Architects architecture.com/TheRIBA/AboutUs/InfluencingPolicy/ CityHealthCheck.aspx#.UvlZmiWYbs1

⁵⁴ Capital Growth: London's food growing network: www.capitalgrowth.org/

⁵⁵ <http://www.capitalgrowth.org/spaces/>

⁵⁶ <http://www.foodgrowingschools.org/blog/tag/barnet/>



Map 4: Community food growing spaces registered with Capital Growth

- 5.2.36 It is important that higher density developments built over the current plan Local Plan period up to 2026 are planned so as to take the opportunity to ensure that healthy environments are created for residents. This includes ensuring residents' access to fresh food, particularly for flatted developments with limited or no private gardens. In addition, incorporating space for community gardens into the design, including adapting temporary spaces for food growing, (sometimes referred to as "meanwhile spaces") provides opportunities for all ages horticultural education and social interaction thereby supporting physical and well-being of residents. It also improves the local area, creating places where residents, feeling greater involvement, take more care of their environment. This all helps to create distinctive identity and community spirit for an a development, thereby contributing to successful regeneration.
- 5.2.37 Applications for new developments should also identify opportunities to create innovative spaces for growing food, including green roofs; ensuring the construction of structurally suitable green roofs for food growing able to accommodate both growing beds and greenhouses. Through careful design balconies can also provide small spaces for individuals to grow a limited selection of plants and are particularly suited to high density residential developments. It is however critical to consider aspect as north facing balconies overshadowed by other high density buildings are unlikely to be suitable for food growing. Vertical growing on external and internal walls, the latter usually in atriums or courtyards, can also be adapted for food production. Landscaping proposals should therefore integrate community food growing spaces, productive trees and plants as part of the cohesive design of the development.

v) Cemeteries

- 5.2.38 In terms of biodiversity the London Plan⁵⁷ highlights the important role that cemeteries and churchyards play. Regional Enterprise, the Council's Joint Venture Company with Capita, are responsible for the management of Hendon Cemetery and Crematorium. There are four other crematoria in Barnet three are located within cemetery grounds one of which, Golders Green, has its own large memorial garden. Of the four crematoria, one is jointly operated by Camden and Islington Councils and the others owned and operated by private companies. Hendon Cemetery in Mill Hill is reaching capacity with it is estimated between 2 and 3 years of new burial space available. Measures are in place to increase this by possibly 1-2 years by using other areas not traditionally used for burial. In January 2017 the Council approved the reclamation of graves at least 75 years old, subject to meeting strict legal requirements.
- 5.2.39 Hendon Cemetery, bordered by residential properties and established in 1899, has an open mature parkland appearance and was widely planted with trees in its early years. Occupying 42 acres it provides a tranquil oasis in the heart of this busy suburb. The cemetery has mapped out walks welcomes visitors and permits dogs. There are two streams running through the cemetery that attracts wild fowl and water bird. The following birds can be seen in the cemetery grounds: blackcap; sparrow-hawk, grey wagtail, common magpie, nuthatch, grey spotted woodpecker and the Eurasian jay. A colony of honey bees was also very successfully introduced in 2016.



⁵⁷ Policy 7.23

5.3 B) Health Sport and Recreation

- 5.3.1 Planning has a key enabling role to play shaping places that support people’s ability to make healthier choices easier through ensuring that facilities and infrastructure exist to give everyone the opportunity to live in a healthy-weight environment. The OECD Better Life Index⁵⁸ outlines the relationship between GI and health holistically, “An unspoiled environment is a source of satisfaction, improved mental well-being, allows people to recover from the stress of everyday life and to perform physical activity.” Inactivity is a major cause of health problems; according to the NHS, around a quarter of adults are now classified as obese, representing a marked increase in obesity over the past decade.



- 5.3.2 The Commons Select Committee for Health in a follow-up report on childhood obesity published in March 2017 drew attention to the importance of the out-of-home sector (restaurants, takeaways, etc) in efforts to reduce childhood obesity because it now accounts for a large proportion of the food we eat. Following publication of the Government’s Childhood Obesity Plan in August 2016, promising to ‘significantly reduce’ childhood obesity within the next ten years, the Committee repeated an earlier call for changes to planning legislation making it easier to limit the proliferation of unhealthy food outlets and for health to be included as a material planning consideration.
- 5.3.3 A recent review undertaken by Public Health England⁵⁹ has considered the relationship between the built and natural environment and health outcomes. It identified the following five aspects as the main characteristics that can be influenced by local planning policy to promote certain health outcomes:

⁵⁸ <http://www.oecdbetterlifeindex.org/topics/environment/>

⁵⁹ Spatial Planning for Health – An evidence resource for planning and designing healthier places, Public Health England, June 2017

- Neighbourhood design
- Housing
- Healthier food
- Natural and sustainable environment
- Transport.

5.3.4 The consultation draft of the Mayor’s Health Inequality Strategy 2017-2027⁶⁰ set out five aims (with accompanying objectives) for reducing health inequalities across London. These are; healthy children, healthy minds, healthy places, healthy communities and healthy habits. The way that green infrastructure is planned and delivered in Barnet can contribute significantly to achieving these aims both directly and indirectly. For example:

- Objective 3.3, “*London is a greener city where all Londoners have access to good quality green space*” outlines the inequalities across London in both availability and use of quality green space. It is acknowledged that greener neighbourhoods may reduce the impact of deprivation health as differences in health between wealthier and poorer people appear smaller in places with the greenest environments.
- Objective 4.1, “*It is easy for all Londoners to participate in community life,*” also directly refers to the role that accessible parks, open spaces, and play provision have in building community cohesion.

Indirectly, green infrastructure can also help reduce child obesity (objective 5.1) and improve air quality (objective 3.1).

5.3.5 The Council has a range of key objectives in the sphere of Public Health and the Built Environment; the Health & Wellbeing Board is responsible for preparing a joint strategy based on priority health needs identified through the Joint Strategic Needs Assessment (JSNA). The environment directly contributes to the population’s health with poor health outcomes, (including chronic conditions associated with obesity and sedentary lifestyles), often driven by multiple and cumulative determinants. Lack of open space, fear of crime, poor air quality, lack of (good) employment, and low quality housing mutually reinforce against social cohesion and uptake of healthy lifestyle behaviours, thereby contributing to poorer physical, mental and social wellbeing. The Council therefore recognises that stronger links need to be forged between planning and public health, exploring opportunities for closer joint working to help tackle key public health priorities such as obesity. Obesity has become a public health crisis to the extent that unless improvements are made current trends indicate that one in three people in England will be obese by 2034 and one in ten developing type 2 diabetes. In 2014 in England 61% of adults and 30% of children aged between 2 and 15 are classed as overweight or obese.⁶¹ It is predicted that by 2050 60% of men and 50% of women will be obese.⁶² Also, it has been predicted that children born today will be the first generation where, on average, they will die at an earlier age than their parents.

5.3.6 Obesity evidence can be used to strengthen the case for achieving a range of planning policy objectives including sustainable transport, adapting to and mitigating climate change, sustainable design, local economic growth and better place-making.

⁶⁰ <https://www.london.gov.uk/health-strategy>

⁶¹ Planning healthy – weight environments – a TCPA reuniting health with planning project – TCPA & Public England, 2014.

⁶² Tackling Obesities: Future Choice. Foresight. Government Office for Science, 2007.

The Town and Country Planning Association document⁶³ on Planning Healthy-Weight Environments, in setting out the link between health and planning, emphasises the need for a collaborative approach and outlines the following 6 themes and elements for a healthy weight environment:

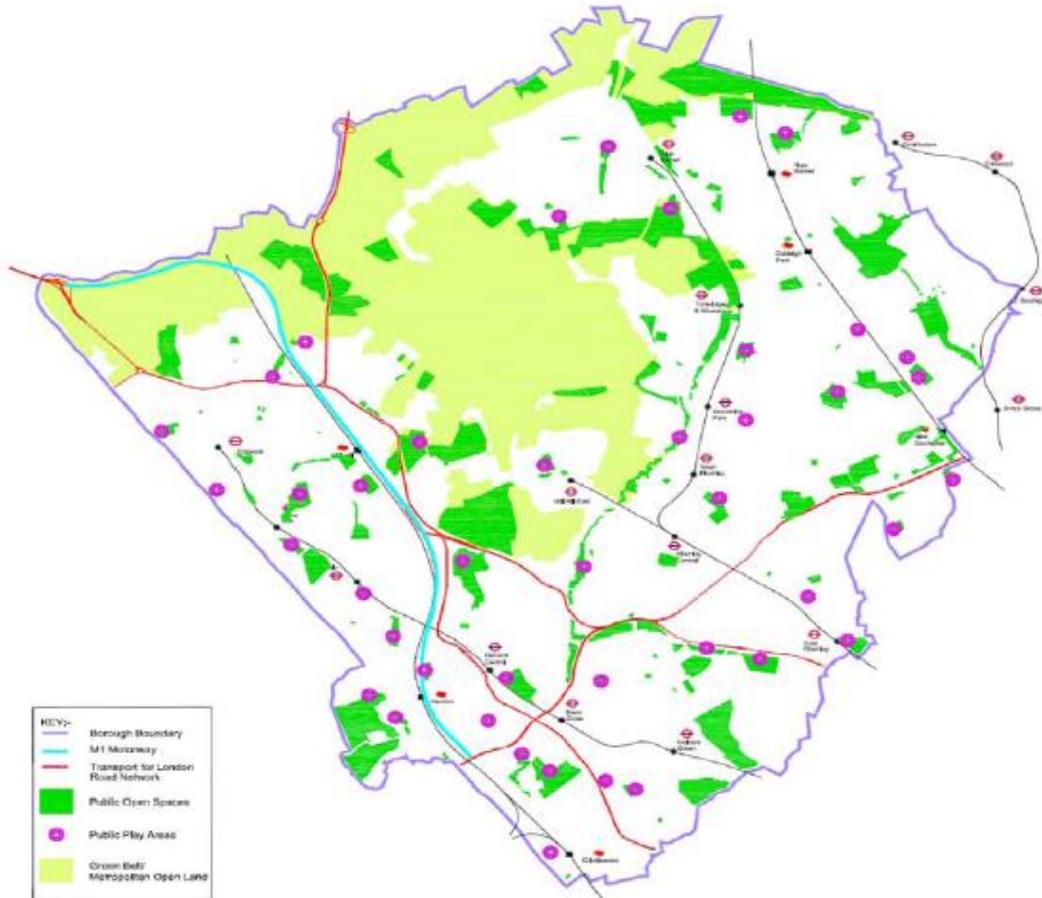
- i) **Movement and access** – walking, cycling and local transport services.
- ii) **Open spaces, recreation and play** – open space; natural environment; leisure and recreational spaces and play spaces.
- iii) **Access to healthy food** – food retail (including production and supply) and food growing.
- iv) **Neighbourhood spaces** – community and social infrastructure and public spaces.
- v) **Building design** – homes and other buildings.
- vi) **Local economy** – town centres and high streets; job opportunities and access.

These six themes, all of which are considered in this SPD, can be used as a framework for developing healthier places and environments in Barnet together with TfL's 10 Healthy Streets Indicators, included as part of the London Mayor's Draft Transport Strategy for London⁶⁴.

- 5.3.6 The success and value of the open space network is dependent on the quantity, quality and accessibility of open green spaces. These factors are used to assess the level of need. The quality and accessibility of green spaces are particularly important for physical activity, community and social inclusion amongst older adults; having an impact on the physical, mental, and psychosocial wellbeing of nearby residents. A sports and physical activity consultation in 2013 found that half of Barnet's physically active residents use parks and green spaces for their physical activity and exercise; perhaps unsurprisingly making them the most popular locations for exercise in the Borough and demonstrating their significance for health.

⁶³ Ibid

⁶⁴ <https://www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017>



Map 5: Barnet's Green Spaces and Play Areas

- 5.3.8 The Council is working to promote the involvement of residents in the management of open spaces to develop a sense of local ownership. The development of a stronger volunteering culture associated with local parks and open spaces is considered desirable to create a framework to encourage communities to take an active role and thereby develop a feeling of ownership in their local parks and open spaces. This might be facilitated by removing barriers to the planning of local events in parks and enhancing recognition of volunteering.
- 5.3.9 An accessible, attractive outdoor environment is important in encouraging physical activity which in turn improves physical and mental health, thereby reducing the public cost burden. Such health improvements increase productivity as well as allowing health expenditure to be invested elsewhere. There is strong evidence that the quality of the outdoor environment is an important factor in encouraging daily exercise, which improves health. Access to green space also has a positive impact on mental health and stress. Such health improvements lead to increased productivity as well as allowing expenditure on health interventions to be invested elsewhere to support economic growth. With a growing elderly population as people live longer it is increasingly important to provide and maintain appropriate facilities to enable older people to continue to access the open environment and remain physically and socially engaged for as long as possible. In addition to green spaces needing to be easily accessible by public transport or by walking to encourage use, the World Health Organisation's checklist for age-friendly cities advises that parks

provide places to stop and rest, adequate shade and shelter, provision of public toilet facilities, and clear labelling of services. The need for public toilets is more prevalent amongst certain groups such as the elderly, disabled, children and those suffering from bladder or bowel conditions; lack of provision can deter people going out in the community, increasing the risk of social isolation and poor mental health.



- 5.3.10 Accessibility however is variable across the borough with 61% of children's play space not on or adjacent to the Public Rights of Way Network and 73% not on or adjacent to cycle paths. This significantly reduces the likelihood that a child will access play areas from their home, (even if accompanied by an adult), therefore negatively affecting levels of informal play. Green open spaces provide children opportunities through outdoor play to develop healthy bodies, active imaginations and an enduring love of nature. In terms of the accessibility of green spaces impacting on the health and wellbeing of children, Transport for London found that children burned the most calories through walking and outdoor play. However, increasingly, children who live in urban environments need to be guided and introduced to opportunities for outdoor play.
- 5.3.11 Research from Play England has shown that only 10 per cent of today's children play in woodland, compared to 40 per cent of their parents' generation, and that 32 per cent of children have never climbed a tree. Research also indicates that outdoor play may be one the best forms of physical activity for children, delivering clear and lasting psychological and social benefits. Outdoor play can also have an important role in developing new generations of visitors to, and champions for, green spaces and natural heritage. Ensuring that we draw in children and young people who may not generally have access to natural outdoor environments will be a priority.

Supporting initiatives such as Forest Schools, the Council will explore ways to provide opportunities for imaginative, physical and educational play in the period ahead.

i) Sports and Recreation Provision

5.3.12 Physical inactivity is a major preventable health risk; by accessing green spaces for example the benefits of physical activity can be achieved through exercise and sporting activities. Barnet Council therefore strongly supports and encourages the use of GI for public sports and activities, while also seeking to preserve the natural environment for the enjoyment of future generations. Research indicates that people tend to be more likely to continue activities in which exercise becomes secondary to environmental or social benefits e.g. gardening, green gym or walking in green spaces, appear to be more sustainable than activities in which exercise remains the primary driver.⁶⁵ Some adults, including older people, also enjoy and benefit from outdoor exercise equipment, and the Council will explore options for installing appropriate adult fitness equipment in the period ahead.



5.3.13 Barnet is relatively well provided for in terms of playing pitches having over 270 pitches covering 160ha. The completion and recent adoption of the PPS facilitates the development of individual sport, site and area based development proposals, in partnership with National Governing Bodies of Sport and Sport England. Although having good geographical coverage, (almost the entire Borough being within 1.2km of a playing pitch), there is demand for additional provision arising from the accessibility and quality - mainly due to poor drainage - of some existing pitches. Barnet has a good distribution of tennis courts and bowling greens, mainly within parks, with provision for basketball and netball courts concentrated in the west of the Borough.

5.3.14 Golf courses need to adopt new approaches to ensure their environmental and financial sustainability. The Council will work with golf club management teams to ensure that golfing has a viable future - courses have clubhouses, catering facilities or restaurants and operate a commercial charging policy. While the green spaces provide an open scenic setting, golf courses require careful management and are relatively sterile environments in terms of biodiversity. Traditional management of golf

⁶⁵ Natural Fit – Can green space and biodiversity increase levels of physical activity? (2004) Dr William Bird

courses involves high levels of fertiliser and pesticides, with the potential to interfere with trees, plants and wildlife in the surrounding woodland as well as raising health and safety concerns in the case of some pesticides such as glyphosate⁶⁶. Best practice requires using the minimum amount of chemicals to maintain healthy turf and optimum playing conditions. The mown landscapes of golf courses are also popular with walkers which can lead to user conflict.

ii) Long Term and Current Proposals

5.3.15 Improvement and enhancement of the Brent Cross and West Hendon sites identified below will provide further support to the regeneration of the Borough. Longer term objectives in the POSS include planning the development for the creation of at least one new District park and 13 new local parks in the Borough.

5.3.16 Both the POSS and PPS for Barnet recommended designation of the following sites as Sports Hubs:

- Copthall;
- West Hendon Playing Fields and associated sites, and
- Barnet Playing Fields and associated sites.

All three were assessed within the POSS as being of low quality but high value; consequently considered by the Council as priorities for improvement, and for which the successful development will depend on match funding.

Copthall

5.3.17 The Copthall site constitutes a significant resource which already delivers sports activities and opportunities for residents of, and visitors to, Barnet. The Council has commenced work on the provision of a new leisure centre and greenspaces operational depot within the site and Saracens RFC have received planning consent to develop the West Stand at Allianz Park.

5.3.18 The Council is undertaking an appraisal of the options for the future development and operation of the site and is developing a masterplan for the delivery of the preferred option. The developments at Copthall create a catalyst for a comprehensive review of the facilities and, together with adjoining green spaces such as Arrandene Open Spaces, present an opportunity to link into the ALGG and contribute to other POSS initiatives; including the creation of a new District Park.

West Hendon Playing Fields

5.3.19 The regeneration of the West Hendon Estate will provide a number of contributions for the delivery of off-site improvements to neighbouring parks to provide play and sports facilities including the provision or enhancement of facilities within the Welsh Harp, Woodfield Park and/or West Hendon. The Playing Fields are considered to be a priority for improvement with the intention being to develop a master plan leading to the creation of a sports hub utilising agreed Section 106 contributions.

⁶⁶ <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0117-0>

Barnet Playing Fields

- 5.3.20 It is proposed that section 106 funding contributions received in relation to the Dollis Valley Estate Regeneration and the land off High Road / Chandos Avenue N20 Brethren Meeting Hall and Wellgrove School be used to support the development and improvement of Barnet Playing Fields and proposals for the High Road / Chandos Avenue Public Open Space. To facilitate this a master plan is proposed leading to the creation of a sports hub utilising agreed Section 106 contributions.

Victoria Park

- 5.3.21 Victoria Park, assessed within the POSS as high quality / high value, has a recently formed Friends of Victoria Park Group that is looking to work with the Council on the development of proposals for the park improvements.

Brent Cross

- 5.3.22 Preparatory work has commenced to deliver the approved parks and open spaces improvements planned for Brent Cross; including re-naturalisation of the river corridor, transformation of Clitterhouse Playing Fields, delivery of new town squares and re-landscaping of local parks.

Colindale Parks Improvement scheme

- 5.3.23 The improvement and enhancement of parks in Colindale will deliver significant support to the Council's regeneration initiatives in that area. In support of the Council's regeneration area policies new investment in the parks and open spaces of Colindale and Burnt Oak includes improvements to Montrose Playing Fields, Silkstream Park, Heybourne Park and Colindale Park to be completed by 2021. The application for planning consent for the Silkstream Valley Park project has been submitted and work has commenced on the development of proposals for improvements to Colindale and Rushgrove Parks.

5.4 C) Climate Change Resilience and Adaptation

- 5.4.1 Our climate is changing; 2016 was the warmest year on record. Since the early 1900s our climate has changed at a rapid rate due to persistent changes in atmospheric composition and land use, for which humans are responsible. World temperatures hit a record high for the third year in a row in 2016, at around 1.1°C higher than before the Industrial Revolution ushered in wide use of fossil fuels. Many projections indicate that they will likely rise by 3°C or more by 2100 if trends continue. Keeping global warming below 2°C would limit the worst effects of sea-level rise, melting of Arctic sea ice, damage to coral reefs and acidification of oceans, according to the UN's Intergovernmental Panel on Climate Change. Cities are vital to that effort because of the number of people living in them now, and those who will move there in coming decades.
- 5.4.2 At present, it is difficult to say if the weather events experienced in recent years and starting to become normal, have been caused directly by climate change, or by some other climatic variation. It may be several decades before we know if these changes are temporary or part of a newly established pattern; it is important to distinguish between short-term weather variability and long-term change in atmospheric

conditions. However, recent changes experienced have been extreme and present major challenges, altering the balance and abundance of different species and threatening natural habitats.

- 5.4.3 Climate change is also a major long-term threat to the economy. Areas vulnerable to the effects of climate change include real estate, infrastructure, timber, agriculture and tourism. The Stern Review⁶⁷ estimated that the impacts of climate change were equivalent to losing at least 5% of global GDP each year, indefinitely. Greener cities are the most important element in the fight against climate change and sticking to temperature rises agreed upon in the Paris Agreement, according to climate experts. Signed at the end of 2015 and ratified last year, the deal intends to limit global temperature rise to 1.5°C above pre-industrial levels.
- 5.4.4 Greater resilience is needed to protect species and habitats from the effects of climate change. Action is required to make GI better adapted to deal with the high rainfall events, droughts, warmer temperatures and increased storm frequency likely to be associated with global climate change. Additionally, through helping to manage high temperatures green infrastructure can reduce the energy demand for cooling in buildings. Carbon sequestration rates differ for different types of habitats of which there are three main types in Barnet (woodland, amenity grassland and neutral grassland). Land management decisions can either maintain or increase carbon storage or net emissions.
- 5.4.5 Infrastructure should be provided where it will reduce the impact of climate change and retain, enhance or create green corridors that improve, and where necessary create, linkages between rural, urban fringe and urban green spaces. Climate regulation includes reducing greenhouse gas emissions and/or their concentrations in the atmosphere. Mitigation is a vital response to a changing climate and enhancing greenspaces can assist in mitigation through:
- Carbon storage and sequestration in soil and vegetation;
 - Fossil fuel substitutes such as increased biomass resource;
 - Provision of space for local food production, and
 - Reducing the need to travel to access green space.

i) Impacts of Climate Change on the Existing Green Infrastructure

- 5.4.6 The main climatic changes anticipated are high rainfall across short periods of time, droughts, warmer winters and summers, increased storm events and an increase in temperature of 2 to 3 degrees Celsius above the long-term average. These climatic changes present a range of challenges including: an increase in the incidence and severity of plant pests and diseases; warmer and wetter winters will provide the perfect conditions for the spread of diseases and pests in plants.
- 5.4.7 An increase in non-native invasive species (particularly from mainland Europe), will be encouraged by our increasingly warmer climate. Oak trees seem to be vulnerable to these climatic changes already and it is predicted that the future climate will not be suitable for shallow-rooted Beech trees. Also, restrictions on habitat management may result due to wet soils and warmer temperatures in winter and summer; when

⁶⁷ The Stern Review on the Economics of Climate Change – October 2006 http://www.hm-treasury.gov.uk/stern_review_report.htm

grounds are saturated, machinery cannot access certain parts of the GI for routine management and maintenance.

5.4.8 Increased pressure is placed on the drainage system arising from high rainfall and rising water levels. GI can positively contribute to the resilience, and sustainability, of economic growth through reducing key risks, such as flooding and temperature extremes. Sustainable Drainage Systems (SuDS) and green roofs, for example, bring economic as well as environmental benefits. Not only does GI reduce damage costs, it often provides more cost-effective solutions. These risks, and costs to society, will increase with projected climate change.

5.4.9 Ways that GI can support climate change mitigation and adaptation include:

- Differing land uses can either reduce or increase the rate of carbon emissions and the land's ability to sequester carbon. Planned green infrastructure can maximise land uses which provide carbon mitigation.
- Trees and plants can improve energy efficiency by reducing the need for heating and cooling of buildings.
- Climate change will increase the threat of flooding. Natural environmental interventions can help to reduce this risk, and at less cost than some more 'engineered' solutions.
- Some of the impacts of dangerous heat and air pollution in urban centres may be reduced by investment in the natural environment (particularly trees).

5.4.10 Key habitats that may also be adversely affected include:

Water bodies

- Higher summer temperatures could lead to oxygen depletion, which would affect aquatic habitats, especially in small ponds.
- Algal blooms.
- Storms could create surges as water runs off the land, which in turn could increase turbidity, reducing light levels below the surface.
- Flooding may lead to aquatic animals becoming stranded when waters subside.
- More frequent droughts would mean that small ponds could dry out.
- Greater pressure on large raised reservoirs.

Grassland

- Grassland may become less tolerant of cutting when summers are hot, leading to potential grass burn-off.
- Generally warmer, wetter weather in winter and autumn is likely to lead to increased grass growth throughout the year. This will increase the dominant grasses at the expense of the scarcer, slower-growing flowering plants, reducing the biodiversity of the grassland plains.
- Drought periods could enhance an already high category incidence of fire risk.

Heathland

- Wet heath habitats could dry out and fires could become more prevalent.

- Drier soils could enable different plant species to succeed, meaning that the composition of heathland could change, possibly becoming less species-rich.

Woodland

- Changes in soil moisture may promote different tree species which might out-compete native woodland species, changing the character of the woodland.
- Drought periods could enhance an already high category incidence of fire risk.



5.5 D) Economic Regeneration and Social Cohesion

5.5.1 Green infrastructure planning can uphold the environmental and social ‘pillars’ of sustainable development. This helps to ensure that economic growth does not have a negative impact on the environment and society and, ideally, results in improvements. Especially relevant to the housing and economic growth agendas and regeneration areas, effective green infrastructure planning and delivery has an essential role in underpinning sustainable economic growth; it should therefore no longer be viewed as a ‘nice to have’ option. GI is an essential component of building communities where people want to live, in attracting and retaining businesses, in tackling obstacles to economic growth in ways which enhance the environment and quality of life, and in supporting improvements in health and well-being. Green infrastructure planning can also resolve issues which directly impede the delivery of sustainable development and economic growth. For example, playing a positive role in improving traffic congestion or poor transport connections, which costs business, reduces quality of life and causes air quality issues; or water quantity (too little to meet growing demand or too much in the form of flooding).

5.5.2 In his draft Environment Strategy, the Mayor states that there is a significant opportunity to increase the amount of new green infrastructure in parts of London

subject to major regeneration programmes. This can be achieved through improving existing and planning new green infrastructure that is better connected and integrated into the built environment. The Council recognises that investment in GI can be the catalyst for and supporting factor in the wider regeneration of an area. Economic growth resulting from investment in GI can lead to higher levels of employment and lower levels of crime. The economic benefits of green infrastructure are becoming increasingly known with a growing body of evidence demonstrating the links between sustained economic growth and green infrastructure. GI projects that are integrated with other projects or strategies, such as urban regeneration, are likely to provide more benefits, faster, in addition to being more likely to be well maintained in the future. Well-designed and maintained green space or GI can add to the aesthetic setting of an area impacting on its attractiveness and local distinctiveness to prospective residents and businesses. This in turn leads to more inward investment, as well as attracting employees and customers. This is vital for the health of Barnet's many District and Local Centres and contributes to the economic prosperity of the wider area.

- 5.5.3 The NPPF⁶⁸ states that LPAs should work with public health leads and health organisations to understand and take account of the health status and needs of the local population, including expected future changes, and any information about relevant barriers to improving health and well-being. With the rapid growth of regeneration areas and some of Barnet's town centres it is important that economic success does not have an adverse impact on the health of residents. Undertaking Health Impact Assessments (HIAs) as advocated in the London Plan, Policy 3A.20⁶⁹ provides the policy context to ensure appropriate dialogue and engagement is undertaken between developers, the planning process and health providers. The proactive engagement of Barnet Council Public Health in planning proposals is therefore important in helping justify the inclusion, and ensure effective implementation of, policies that give the best chance of negotiating development that promotes the population's health and wellbeing.
- 5.5.4 The requirement for a standalone or integrated HIA to be undertaken by developers for large and complex proposals, can determine whether the physical infrastructure of regeneration work is contributing to healthier places. The Healthy Urban Development Checklist (London Healthy Urban Development Unit, 2015) also provides guidance for HIAs.
- 5.5.5 The 'Place-Making' function of the Council includes approval of building and landscaping designs as well as the commissioning and design of proposed streetscape improvements, town centre regeneration projects and proposals linked to the design and management of quality open spaces. The experience of being on the street should also provide pedestrians with things to see and do. Journeys needs to be interesting and stimulating with attractive views, buildings, planting and street art. By prioritising the pedestrian travel experience this will benefit the environment, the economy and provide increased opportunities for increased physical activity, which is central to the 10 healthy street indicators. Social infrastructure also influences health through the types of services available. According to the Royal Society of Public Health's 'Health on the High Street Report', Barnet has 3 of the healthiest high streets in London with Whetstone receiving the overall healthiest high street award.

⁶⁸ National Planning Policy Framework (2012) – paragraph 171

⁶⁹ <https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-chapter-3/policy-32-improving-health>

- 5.5.6 The potential to design in healthier environments is particularly significant in growth and development locations; good design can improve the accessibility of services which promote health. Active design strategies provide guidelines for architects and builders, ensuring that health promotion is considered in their developments. Active design is environmental design which helps to create environments which integrate physical activity into everyday life. This includes, clearly labelling stairwells to increase stair use among the able bodied, making them safe and visually pleasing, providing office cycle bays and the provision of showers within office buildings, active recreation and healthy eating facilities.
- 5.5.7 In building new communities people need access to nature and the benefits of a green environment. Learning from public health research into the benefits of regeneration activities and specific successful regeneration scheme such as Kings Cross, the role of ‘meanwhile uses’ (the temporary use of space, buildings or retail facilities for community led activities, such as community led food growing projects) or engagement, within areas that are the focus of regeneration, short term and temporary uses of space particularly where this promotes healthier living and positive health outcomes.



- 5.5.8 The provision of open spaces and other GI can provide significant value in terms of property premiums within a local area. Proximity of populations is a key driver of the value provided by urban greenspace. Higher density development not only allows more homes to be delivered on less land but also if designed well can result in walkable neighbourhoods that can sustain public transport and local shops.

i) What is Needed?

- 5.5.9 Section 6 of this SPD provides guidance on effective ways to factor in GI at the initial planning stages of individual schemes. In terms of wider considerations, the Council is committed to working towards:

- Providing more greenspace in areas of deficit, especially those areas which are also suffering from poorer health or higher levels of deprivation;
- As an absolute, avoid creating further disadvantage in areas already lacking in greenspace where there is also social and economic need;
- Ensuring that new housing development adequately contributes to the provision of greenspace (at a scale appropriate to the development) to build communities not just housing;
- Increasing the benefits and quality of existing greenspaces in areas of deficit, for example by seeking access to additional land to make better use of urban fringe land, incorporating more wildlife interest, improving paths, increasing play space, and ensuring high levels of maintenance;
- Bringing nature into the urban areas – more wildlife in existing parks and greenspaces, better urban connections, naturalising and de-culverting rivers and streams;
- Using GI in a planned way to combat environmental detractors – to reduce noise pollution and improve air quality;
- Encouraging the public to walk, cycle and horse ride more often;
- Providing attractive, mainly circular, routes of varying lengths suitable for families and other users of varying abilities for leisure and recreational purposes;
- Better linking urban areas to the countryside;
- Providing areas, or links to areas, to facilitate enjoyment of the countryside for other activities such as fishing, bird watching; and
- Helping Watling Chase Community Forest reach its full potential as a readily accessible ‘green lung’ for Barnet’s residents.

5.6 E) Green Transport and Access

i) Promoting Green Transport

5.6.1 Given the importance of creating healthier places and the need to protect natural habitats and green spaces, the Council strongly promotes sustainable transport to protect the environment - alleviating congestion, pollution and pressure on car parking facilities whilst increasing public awareness of accessibility. An important part of this is ensuring all people are encouraged to walk or cycle. This includes children, the elderly, people with mental health issues and people with disabilities. The Department for Transport published a Cycling and Walking Investment Strategy in April 2017 with the aim to make walking and cycling the natural choice for shorter journeys by 2040. Identifying improvements required at the local level, it is recommended that plans are prepared that ideally cover a ten-year period; reviewed and updated periodically, providing guidance to assist a wide range of organisations involved in creating, modifying and managing the built environment. The key output should be a walking and cycling network plan that identifies preferred routes and core areas for further development and a prioritised programme of infrastructure improvements for future investment. In his draft Transport Strategy⁷⁰ the Mayor seeks to change London’s transport mix and advances the Healthy Streets Approach that prioritises walking, cycling and public transport which will improve air quality and create a greener and better public realm.

5.6.2 Within Barnet the Council is working to promote the interconnectedness of the Borough’s parks and open spaces; as an alternative to the car identifying

⁷⁰ Mayor’s Transport Strategy – Draft for public consultation June 2017, <https://www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017>

opportunities to develop and promote the Borough's walking and cycling network, including school travel. The Capital Ring is a key green route that encircles London with sections 10 (South Kenton to Hendon Park) and 11 (Hendon Park to Highgate) running respectively east-west and north-south through Barnet. The Dollis Valley Green Walk and the London Loop strategic walking routes cross Barnet. The 17km Dollis Valley Green Walk incorporating Brent Park, Hendon, Windsor Open Space Finchley, Riverside Walk / Gardens, North Finchley and Brook Farm / Wyatts Farm Whetstone, provides an important green corridor for wildlife and recreational use through the heart of Barnet. To provide legal protection and the widest publicity for the network of routes, it is important that all historic and new connections are properly recorded. Therefore, working with local organisations, the Council will seek to improve the Definitive Map of Rights of Way to ensure that footpaths throughout the Borough are appropriately recorded as public rights of way. Appearing on Ordnance Survey maps and illustrating the interconnectedness of the Borough's footpath network will encourage greater use of footpaths and GI across the Borough.



- 5.6.3 While it is not possible to easily reach all the GI destinations via public transport, a large portion of the Borough is within fifteen minutes' walking distance of either underground or over-ground stations, as well as benefiting from numerous bus routes. It is anticipated that the Borough's Transport Strategy, when it is produced in 2018, will consider the need to balance provision of access by car and public transport. Prioritising pedestrians requires a reduction in the volume and dominance of motor traffic, (currently, 49% of journeys in Barnet are made by private vehicle). Walking and cycling for just 10 minutes a day can contribute towards the 150 minutes of physical activity for adults per week, as recommended by the UK Chief Medical Officers. To facilitate an increase in walking and cycling as alternatives to private car use the Council is working to promote the interconnectedness of the Borough's parks and open spaces. Opportunities will therefore be sought to develop and promote the Borough's walking and cycling network including school travel.

5.6.4 Local networks connect people to the places they need to get to, be it parks, schools or shops; and attractive and safe routes can encourage a modal shift from cars to more sustainable and healthy forms of transport. Establishing a 'green travel' network that prioritises pedestrians and cyclists can bring positive economic impact. It is hoped that people will be more inclined to leave their cars at home, therefore reducing congestion and pollution and walking or cycling more. Properly planned, and building on the routes that already exist, an enhanced network will provide a safer and healthier alternative way of getting about for people of all abilities, be it for a leisurely outing into the countryside, jogging / running or for getting to school, work or the shops. Access networks can provide primary routes connected to secondary networks, linking into local communities, to railway stations and 'visitor hubs'.

ii) Addressing Access and Accessibility Issues

5.6.5 In terms of access and accessibility there are two distinct aspects to be considered. Firstly, to enhance the ability of all sections of the community to benefit from green open spaces, irrespective of age or any physical or mental disability or impairment. The second aspect relates more to working with landowners to remove any physical barriers and, through improved design and signage, enhance access to open spaces. It is recognised however that even if it were possible to achieve, it will often not be appropriate or desirable to open up access to many areas of green open space that are in private ownership. Whilst not open to the public these areas, including private gardens, do of course provide a wide range of the GI benefits identified elsewhere in this SPD.

5.6.6 The Council is committed to ensuring that everyone - including individuals who may have disabilities, older people, children and families, and disadvantaged groups - can enjoy access to the GI that is in public domain. This commitment to 'access for all' is at the heart of the Council's vision and the objective is to interpret the heritage, ecology and wildlife and amenities of the Borough's GI so that everyone can enjoy them. This might be achieved by, for example, constructing easy access paths for wheelchairs and buggies in readily accessible sites with seating and resting places. A current example of a scheme within the Borough is the Welsh Harp SSSI where access is being improved as part of the West Hendon regeneration proposals with the creation of a footpath around the Reservoir including the provision of two new footbridges.

5.6.7 Ensuring car parks have designated disabled and family parking is an easy and practical way to make parts of the GI more accessible for wheelchairs and buggies, together with the construction of fully accessible trails with seating and resting places, surfaced shared-use and waymarked trails. In providing accessible routes and signage it is very important to be mindful of the need to maintain the natural aspects of the GI. Whilst many paths across GI are 'desire lines', part of a dynamic network, it is also necessary to recognise that some areas cannot be readily adapted and will therefore always remain inaccessible for some users; as well as being mindful about the impact on the natural environment, it is also necessary to be practical about visitor safety in decision making about access.

5.6.8 Green infrastructure, appropriately planned, can create a connected network which is essential for both people and wildlife. Promoting non-motorised transport and accessing wider areas, routes must have a purpose if they are to be used. To increase physical activity levels the route / space should be accessible, (within 2 km of home), have a good surface with no obstructions such as stiles and crucially be safe. Wear and erosion also requires that, particularly for well-used multi-accessible

routes, regular inspection and resurfacing is needed; also with in many cases overhanging vegetation cut back as well as drains and culverts being kept clear and repaired when necessary.

- 5.6.9 Routes will need to be perceived as safe to ensure use, particularly for families, the elderly, people with disabilities and novice cyclists and riders. There is a need for imaginative ways to promote a wildlife-rich green space, and for it to be marketed to different age groups. The green space should appear attractive; being natural, but access routes and facilities must be well maintained. It is possible to have sensitive wildlife-rich areas visible from smaller well-kept areas, without promoting physical access to them, as the view of nature is a main motivator. The objective therefore is to create routes for travel and for recreation where the local community needs them; including routes for users of all abilities and sections of the community to access.



- 5.6.10 Town centres and regeneration areas should be fully compliant with the social model of disability. For example, physical barriers such as narrow or uneven pavements, gradients sloped at greater than 8%, insufficient or inappropriately positioned dropped kerbs / pedestrian refuge islands / controlled and uncontrolled crossing points, street furniture and heavy traffic can all make streets difficult to cross and manoeuvre. The Street Mobility Toolkit from UCL can be used to measure the barrier effect of busy roads. To implement appropriate physical infrastructure, data on the travel habits of Barnet residents needs to be routinely collected. Additionally, the World Health Organisation's (WHO) HEAT tool, the London PTAL model, and access to opportunities and services (ATOS) tool can all be used to identify areas of high priority. Not only will these tools ensure that developments are targeting those most in need, they can also maximise economic return.

- 5.6.11 Accessibility to open space can be improved through provision of cycle parking in car parks, pedestrian and cycle links as well as bus routes where practicable. Without a

map, it can be sometimes be challenging to find GI assets from stations and bus stops when there is limited signage. The installation of legible London interpretation panels is therefore encouraged.

iii) Reconciling Tensions Between Different Users

5.6.12 A balance needs to be struck between encouraging visitors to the GI and preventing habitat damage and the disturbance of wildlife. Whilst committed to enhancing the visitor experience, it is also necessary to monitor the impacts that activities such as horse riding, mountain biking and dog walking might be having in causing ecological change in some areas. It is difficult to properly understand the carrying capacity of individual sites. A site's threshold depends on the wildlife it supports, its soil type, hydrology, topography and vegetation, and the type of visitor activity taking place. It is not only the activity at any particular time but rather the cumulative effects that can be damaging. Consequently, it can be difficult to gauge the amount of activity an area can withstand before it starts to deteriorate and therefore to have a defined policy or process for dealing with sites once they start to become damaged.



5.6.13 The Council is supportive of cycling as a fun and sustainable activity which is valued by many and affords significant health benefits. It can also be a great social activity and good way to discover the GI. However, cycling can also damage the landscape and sometimes creates tensions with other visitors. It is necessary to review the impacts of cycling so that we can develop a balanced and sustainable approach to its future management. In general, considerate cyclists who respect the fragility of some parts of the GI, keep to designated trails, and minimise potential disruption to walkers, horses and wildlife, are viewed positively by other users of the GI. Some routes through the GI particularly popular to mountain bikers attract higher cycling speeds. To reduce potential conflicts with other users the Council seeks to promote considerate cycling, similar to that used on London's South Bank.

5.6.14 In terms of walkers the various footpaths, trails and areas of woodland across the Borough entice walkers, ramblers and dog walkers. The Council seeks to develop a more responsive and strategic approach to meeting the needs of different types of walkers; maintaining easy access whilst protecting unspoiled habitats and improving signage and publicity about walking routes and events. Also, investment in online resources, (e.g. maps and route planners showing facilities available), is likely to increase awareness of GI opportunities, further complimenting infrastructure

changes. At the national level the Government has funded a project with Ordnance Survey that will provide free online maps of greenspace with the intention of making it much easier for people to locate and access greenspaces for people to locate and access greenspaces⁷¹.

iv) Range of Measures to Enhance Network of Green Transport Routes

5.6.15 The Mayor's Draft Transport Strategy⁷² states that for people making local trips, particularly in outer London where car use is high and public transport links relatively poor, the provision of new and better public transport services is required. Providing reliable bus services and improving rail services are seen as essential to avoid reliance on cars. Working with partner organisations, including Transport for London, neighbouring authorities and local organisations, the Council seeks to enhance public transport linkages and improved signage as part of increasing awareness and visitor access to the GI. Projects delivering access improvements can help to:

- Improve access and choice of means of getting about other than by private car; promoting the use of sustainable and public transport options integrating as appropriate with other forms of transport.
- Ensure that the GI landscape is considered when transport developments are planned with the aim to reduce fragmentation for visitors and wildlife.
- Create distinctive gateways to welcome visitors and make drivers aware that they are entering GI areas of open space.
- Improve air quality - excessive air pollution from traffic around most roads is damaging native trees and plants, likely to adversely impact on the health of soil, vegetation and water, with potential knock on effects on wildlife.
- Vehicle speed and road noise impacting on tranquillity that, together with air pollution, reduce the enjoyment and easy access to the GI for visitors on foot, bicycle or horse, as well as presenting a safety risk to visitors and wildlife alike.
- Reduce the impact of traffic through lowering speeds and controlling access of HGVs along minor roads.
- Develop and maintain a range of routes that cater for the needs of a range of purposes and users. (Whilst most routes are likely to fulfil more than one journey purpose, circular routes for example are likely to be more favoured for leisure and direct linear routes for commuting).
- Provide routes to a variety of destinations including work, school, sports and leisure facilities, shops, bus stops, train stations and to access social and community facilities.
- Facilitate shared use of off-road routes, 'quiet roads/lanes' and busier roads, where appropriate, by non-motorised traffic.
- Provide highway and personal safe routes into/out of urban areas.
- Work in partnership with others who have similar aims or who can benefit from improvements to existing and establishment of new green transport routes.
- Establish links to existing GI networks beyond Barnet, for example bridleway and cycle networks in Hertsmere and Watling Chase Community Forest.
- Assist with the improvement, more effective use and extension of the current provision of the rights of way network, (ensuring footpaths are added to the Definitive Map), and the safe use of suitable parts of the road network.
- Link towns with the countryside and vice versa, creating a continuous 'connected' network with routes that are in harmony with different types of land use.

⁷¹ Government Response to CLG Select Committee Report: The Future of Public Parks – recommendation 6 refers

⁷² Mayor of London – Mayor's Transport Strategy Draft for public consultation – June 2017

- Clarify responsibility for tree safety and vegetation maintenance obligations in relation to highway structures and carriageways.



5.6.16 For routes to be used to their full potential they need to be developed to an agreed consistent standard; recognising that this will vary according to location. It is important that the materials used maintain a balance between ensuring usability and preserving the natural environment. Routes in urban areas, for example, being more likely to be surfaced with tarmac such as Whetstone Stray – part of a green corridor Dollis Valley Green Walk comprising meadows and a brook - which would not generally be appropriate for a route in a more rural setting. Shared-use trails, way-marked trails and easy access paths create a network within and between areas of GI for visitors, but to maintain them in good condition, they require upkeep at significant cost. Footpaths that are designated rights of way need to provide safe access for walkers and be protected from deterioration with softer surfaces and good drainage. Wear and tear on the trails, especially in wet conditions, can demand that the surfaces require frequent maintenance at significant cost. Alongside these trails, there will be a need to retain more remote paths, often formed by people and wildlife exploring the GI that as a result are dynamic and ever-shifting but not requiring the resources to maintain these to the same level as trails. Signage for trails also varies across the Borough and in places the designation of trails for shared use by walkers, cyclists and riders is unclear. Additionally, consideration might be given for Public Health to work with officers responsible for rights of way to improve existing walking routes and networks, including funding the creation of any missing links e.g. footbridges to help form more contiguous walking networks in the more rural parts of the Borough.

5.6.17 In terms of cost, it is recognised that routes will vary in the amount of funding needed to develop, improve and maintain them. Some may be more expensive than others and not demonstrate as good value for money in terms of satisfying the criteria for selection. Consideration of the materials used should be agreed with engineers to ensure that maintenance costs can be kept to a minimum, to avoid the routes falling into disrepair. The aim is to encompass the needs of all users (including pedestrians, cyclists, horse riders and those with impaired mobility), whilst recognising their needs are not necessarily the same and that it may therefore not always be possible, or desirable, to try to meet all their needs on the same stretch of pathway. Calculating on-going maintenance costs for each element of the GI is required so that any improvements can be secured long-term and maintained to a good standard.

5.6.18 Factors and considerations important to quality of provision are likely to include providing:

- A surface and gradient that is appropriate to the surroundings and likely use;
- Adequate width to minimize conflict between users;
- Consistent and continuous signage;
- Enhanced network facilities, e.g. crossings, lighting, gates, seating, public toilets, picnic areas and secure storage for bicycles as appropriate;
- An attractive environment through landscaping and planting;
- Good information with leaflets, route information, maps etc, and on site via interpretation boards;
- Ensuring arrangements for the on-going maintenance of the route; and
- Introduction at appropriate locations of traffic calming measures and segregated traffic.

5.7 F) Improving Air & Water Quality

i) Air Quality

5.7.1 The air quality of urban areas has a significant impact on people’s health. The Marmot Review⁷³ report found that “poorer communities tend to experience higher concentrations of pollution and have a higher prevalence of cardio-respiratory and other diseases. Sixty-six per cent of carcinogenic chemicals emitted into the air are released in the 10 per cent most deprived wards.” Earlier this year the Government consulted on and then published a UK plan for tackling roadside nitrogen dioxide concentrations⁷⁴ outlining a range of measures and proposed actions to be taken to improve air quality by reducing nitrogen dioxide levels in towns and cities.

5.7.2 Improving air quality is also an objective in the Mayor of London’s consultation Draft Health Inequalities Strategy⁷⁵. Objective 3.1 states that: “Poor air quality has been associated with many health problems including lung and heart diseases. It affects the health of all Londoners but some parts of the city and certain groups are affected more than others. People in the lowest socioeconomic groups are more likely to be exposed to poor air quality and that exposure is more likely to result in poor health.” Although air quality has improved significantly over recent decades through action

⁷³ <http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-full-report-pdf.pdf> - page 80

⁷⁴ <http://www.airqualitynews.com/2017/07/26/air-quality-plan-published/>

⁷⁵ <https://www.london.gov.uk/talk-london/healthstrategy> - p.63

taken and newer technologies, levels of pollution - particularly in urban centres - are still too high. The principal sources of air pollution are:

- Traffic emissions from vehicles;
- Air pollutants arising from industrial activities;
- Emissions from boiler and mechanical plant within buildings;
- Dust emissions from demolition and construction activities; and
- Emissions from construction traffic and plant supporting construction activities.

- 5.7.3 Local authorities already have the powers to implement Clean Air Zones and the Government's plan states that, where the evidence shows persistent air quality exceedances, local authorities must develop plans to achieve compliance within the shortest time possible.
- 5.7.4 Poor air quality is a major public health issue in London with the Capital suffering disproportionately from poorer air quality compared to other parts of the country. It is critical that the exposure of the public to air pollutants is minimised and the contribution to atmospheric pollution from activities within the built environment reduced. A GLA commissioned report estimated that over 9000 Londoners are dying prematurely from long-term exposure to air pollution and the London Health Commission stated 7% of all adult deaths in London as being attributable to poor air quality. Over 440 schools and 360 other educational institutions in London are located in areas currently exceeding safe legal pollution levels.
- 5.7.5 Since the Clean Air Acts of the 1960s, sulphur pollution has been replaced by nitrogen pollution resulting from increased traffic levels. Within Barnet, emissions from traffic have by far the most severe and pervasive impact on the reduction of local air quality. Busy main roads creating traffic pollution leads to noise, fumes and dirt being generated that are highly detrimental to the GI and its wildlife. Concentrations in the air at roadside locations often exceed the internationally recommended limits above which both human and plant health is threatened.
- 5.7.6 The major pollutants affecting London are particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO2), for which London along with a number of other UK and European cities, is failing to meet the legal limit. An excess amount of nitrogen can alter soil chemistry, plant nutrition and biology as well as encouraging pests and pathogens. Although meeting the limits for particulate matter this pollutant is damaging to health at any level. Therefore Barnet, together with the other London boroughs, has an important role to play in addressing pollution at the local level by implementing targeted measures at pollution hotspots, reducing pollution from new developments, developing an infrastructure that encourages walking and cycling along with ultra-low emission vehicles (ULEVs) and working with communities to increase awareness and resilience.
- 5.7.7 The Council is updating its Air Quality Action Plan 2017-2022, a draft of which was consulted on over the summer. Building on the previous plan, the new plan outlines the steps the Council will take from 2017 to 2022 to improve air quality across the Borough. The plan gives details on how the Council will:
- Continue to meet its statutory obligations for managing air quality;
 - Work across many Council services and with partners to minimise emissions from transport, existing buildings, and new developments, including Brent Cross and other regeneration projects within the Borough;

- Continue to raise awareness of air quality issues to the public and encourage residents to do their bit to reduce levels of pollution and raise awareness of the importance to reduce their exposure to poor air quality; and
- Work in partnership with others to press for more action to be taken at all levels of government.

The consultation responses received are currently being analysed with the intention of providing feedback and producing the final plan before the end of this year.

- 5.7.8 The Council is committed to working to ensure that Barnet's growth will be met by minimising and mitigating any adverse impacts upon air quality; reducing the number of people, especially the vulnerable and school children, exposed to pollutants. London Plan standards for cycle parking and electric vehicle charging points are applied to increase the uptake of vehicles that are zero emission. Also sought is an increase in hydrogen refuelling infrastructure and ensuring that energy (heat and power) generation meets air quality and zero carbon commitments.
- 5.7.9 Helping to address NO₂ pollution the Council actively encourages tree and hedge planting adjacent to major roads. Trees can make a significant contribution to improving air quality by reducing air temperature, (thereby lowering ozone levels), directly removing pollutants from the air by absorbing them through the leaf surfaces and intercepting particulate matter such as smoke, pollen, ash and dust. Trees can also indirectly help in reduce energy demand in buildings leading to reductions in emissions from gas and oil-fired burners, excess heat from air conditioning units and demand from power plants. Targeted street tree planting has been in place for several years and a five year plan specifically addressing areas with pollution levels forms a major part of the Tree Policy. Cooling strategies, in particular the planting of trees and other vegetation, can be very effective in reducing the urban heat island effect. By providing immediate shade locations during the day and restricting direct sunlight on road and building surfaces they reduce the raised temperatures experienced during the night. Initiatives to increase the planting of green barriers and vegetation have included in January 2017, £80,000 of LIP funding being used to plant 216 trees in areas affected by poor air quality. Prior to that, £80,000 was secured from the Mayor's Air Quality Fund to plant 220 trees in 2015 and 2016. The Council also secured funding to install a 40m "green wall" made of ivy along a school playground close to the A41.
- 5.7.10 The Sustainable Design and Construction SPD outlines air quality principles relating to the location, siting and design of new development. These include consideration as to how new or existing trees and planting can be used to help provide a barrier to air pollutants. Improvements to air and noise quality are sought by requiring Air Quality Assessments and Noise Impact Assessments from development in line with the Sustainable Design and Construction SPD. In addition, developers are required to design schemes to meet the air quality neutral emission benchmarks for buildings and transport set out in appendix 5 and appendix 6 of the Mayor of London's Sustainable Design and Construction SPG. There is also a need for requirements for revenue measures to fund on-going monitoring / equipment needed to measure air and water quality

ii) Water Quality and Retention

- 5.7.11 Water is an essential and precious resource, the quality for which is a key measure of the overall quality of the local environment. The water quality in London's rivers

and lakes mostly ranges from ‘moderate’ to ‘poor’ with only a handful classed as ‘good’⁷⁶. Surface water run off can result in sewers over flowing and untreated sewage going straight into the Thames and its tributaries. Climate change predictions indicate more intense rainfall events during summer months, and generally wetter conditions through winter months which will intensify these problems. Urban areas are particularly at risk because the coverage of impermeable surfaces such as buildings, roads and the paving over of front gardens for car parking areas prevents rainwater being able to permeate into the ground, absorbed by plants and trees or stored in ditches and ponds. This runoff can quickly become polluted as the rain effectively washes urban streets and buildings carrying high concentrations of hydrocarbons, metals, dust, litter and organic materials into local streams and rivers where the concentration can cause serious pollution to those watercourses.



5.7.12 The Council intends working with partners to:

- Identify opportunities to address water quality in Barnet’s river valleys and develop a programme of targeted activities and investments;
- Assess opportunities for flood risk management in Barnet’s river valleys - discussions have commenced with the Environment Agency; and
- Enhance bio-diversity in river valleys as well as other parks and open spaces to improve awareness education and recreation.

⁷⁶ Valuing London’s Urban Forest Results of the London i-Tree Eco Project 2015

- 5.7.13 The Welsh Harp suffers from eutrophication from poor water quality. To address this, the nutrient and pollutant loading entering the reservoir via the Silk Stream and the River Brent needs to be reduced. The Council is therefore working with the Environment Agency and Thames Water to investigate and correct misconnections, polluting incidents and poor practices along the waterways that feed into the reservoir.
- 5.7.14 National standards for SuDs⁷⁷ require the Council as Lead Local Flood Authority (LLFA) to be satisfied that major development meets the minimum standards of operation and that there are clear arrangements in place for on-going maintenance over the lifetime of the development. Rather than conventional methods of drainage, SuDs aim to use drainage methods which mimic the natural environment to slow down the rate at which water flows from a site by absorbing, filtering and slowing the flow of water when it rains. Through different shapes and sizes, they need to adapt to the topography and conditions where they are located. Simple but well thought-out systems can provide diverse benefits, such as reducing floods, improving biodiversity, improving the water quality going into the drains, and ultimately providing the community with green spaces they can enjoy. SuDs can also bring educational benefits, an example of this in Barnet being the SuDS for Schools project run in partnership by the Wildfowl & Wetlands Trust, Environment Agency and Thames Water. Working with schools in the Pymmes Brook catchment this project aimed to improve the quality of water reaching the brook and the River Lea that it flows into. In addition, the project provides participating schools with a learning resource and demonstrates how sustainable drainage can be applied in a variety of retro-fit settings.
- 5.7.15 It is very important that new development uses water efficiently, seeking wherever possible to reduce consumption. Section 2 of the Council's 2016 Sustainable Design and Construction SPD outlines the design principles that should be considered for water consumption, storage and recycling.



⁷⁷ Non statutory technical standards for Sustainable Drainage Systems were published in March 2015 and apply to major developments of 10 units or more <https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards>

- 5.7.16 Retaining or incorporating existing biodiversity on a site, in particular trees, can also help regulate the rate rainfall reaches the ground. Table 2.15.1 within the Sustainable Design and Construction provides details for the following range of GI examples of SuDS: soakaways, swales, detention basins, pervious surfaces, ponds and green roofs.
- 5.7.17 The establishment and retention of riparian buffer habitats is important. For a designated river, the Environment Agency requests an 8 metre buffer zone (taken from the top of the riverbank) that is free from built development including lighting, domestic gardens and formal landscaping. Riparian buffers provide many benefits in helping to maintain natural stream functions, significantly contributing towards the improvement of the water body.

5.8 G) Cultural Heritage

- 5.8.1 This section outlines the importance the Council places on preserving the historic environment which includes parks, gardens, monuments and buildings. Historic England defines the historic environment as everything around us resulting from the interaction between people and places through time. This includes surviving remains of past human activity, whether visible or buried; as well as deliberately planted or managed flora. Many landscape features such as ancient woodlands, hedgerows, trees and water features can be identified (or contain) undesignated heritage assets. It means that the whole landscape can be considered of historical significance with a key issue being the balance struck between growth and development on one hand and safeguarding ecology and conservation interests on the other.



- 5.8.2 Cultural heritage refers to how humans have been influenced by and interacted with the landscape. It includes the aesthetic, historic, scientific, social or spiritual value of a place for past, present and future generations. Whilst natural heritage relates to the ecological and environmental value of green spaces, cultural significance can be sustained by enabling people to access and enjoy GI and find out more about green spaces, thereby making them more inclined to look after those regularly visited. An example being The Battle of Barnet fought on 14th April 1471. This was an important and decisive battle in the Wars of the Roses between Edward IV and the Earl of Warwick (called the King-maker and who lost the battle and was killed). The armies of Edward and Warwick met for the last time in Barnet at a place called Gladmore Heath. Whilst there is uncertainty where Gladmore Heath was, as the name has long ceased to be used, it is commonly believed that the battle was in and around Hadley.
- 5.8.3 Many heritage assets are protected by designations including Statutory and Locally Listed Buildings, Scheduled Ancient Monuments, Conservation Areas and Registered Parks and Gardens of Special Historic Interest. Welsh Harp SSSI also lies within the Borough. Over 100 formal green spaces including public parks, cemeteries and graveyards in Barnet are considered to have historical significance and are listed by the London Parks and Garden Trust in the London Inventory of Historic Green Spaces. It is important to ensure that the appropriate requisite notification and consultation is undertaken in respect of proposed works affecting designated heritage assets.
- 5.8.4 However, lists of protected sites are not the totality of what we consider important about the past. Heritage should be valued as a key component of character and sustainable place-making. The Council supports action to remove assets from Historic England's Heritage at Risk Register which records sites most at risk of being lost as a result of neglect, decay or inappropriate development. The Water Tower at St. Stephens House and Gardens N3 being an example of an historic asset removed from the Register following recently completed restoration works.
- 5.8.5 Many heritage assets remain undesignated and others, such as archaeological remains, may yet be discovered. The London-wide review of Archaeological Priority Areas (APAs) by the Greater London Archaeological Advisory Service presents an opportunity to better recognise the potential that undesignated assets can contribute to GI objectives. The 19 APAs in the Borough enable local groups to engage in archaeological and historical research, building on the work started by the London Parks & Garden Trust. In some cases, in order to protect cultural significance, further research may assist in defining and understanding a GI asset. Where there is believed to be archaeological evidence that might otherwise be lost this should be drawn to the attention of applicants at the planning application stage and, if necessary, an archaeological condition attached to any planning approval subsequently granted. There is also an economic dimension to cultural significance; heritage is fundamental to creating a sense of place and significant amounts are required annually in order to manage and maintain GI assets.
- 5.8.6 In relation to non-designated heritage assets, a comprehensive review is underway of Barnet Council's Local List of Buildings of Historic or Architectural interest. The Local List is a schedule of historic buildings and other structures in Barnet which have been formally recognised as having local architectural or historic merit. There are presently over 1600 heritage assets on the list, which are widely distributed

across the Borough. Local lists play an essential role in building and reinforcing a sense of local character and distinctiveness in the historic environment. They formally recognise the importance placed on the historic environment and its role in contributing to our sense of place. A review of the current Local List and updating the selection criteria will help strengthen the role of local heritage assets, which are a material consideration in the planning process. Undertaking the review will ensure that the special character and historic significance of buildings of local importance is protected and enhanced. It also provides an opportunity to consider the merits of any additional buildings that make a contribution to Barnet's historic character.

5.8.7 Major issues and challenges include:

- Maintaining the character of the Borough whilst enabling growth entailing new development.
- Ensuring the preservation, restoration of, and improved access to, heritage assets – finding innovative ways to fund the maintenance of the Borough's areas of natural and cultural heritage.
- Improving energy efficiency whilst maintaining the character of our historic buildings.
- Pressures from maintaining heritage assets in a public environment, including the risk of vandalism, age-deterioration.
- The need for more research to improve our understanding of the historic structures.
- Evaluating the impact that taller buildings and developments within the Borough can have on the skyline and long range views.

5.8.8 Possible actions include:

- Developing conservation management plans for sites.
- Conservation Statements.
- Improved interpretation signage at and access to heritage sites.

Section 6: Green Infrastructure Delivery and Guidance for Developers

6.1 National Guidance

6.1.1 With increasing development pressure it is inevitable that in Barnet, as in much of the South East of England, an increasing number of housing schemes will be in close proximity to protected habitats. In these circumstances developers are required to provide mitigation to offset the impact of development. The NPPF⁷⁸ advises that when determining planning applications LPAs should aim to conserve and enhance biodiversity by applying the following principles:

- Refuse permission if significant harm resulting from a development cannot be avoided, adequately mitigated or compensated for;
- Not normally permit proposed development on land within or outside a SSSI likely to have an adverse effect;
- Permit proposals where the primary objective is to conserve or enhance biodiversity;
- Encourage opportunities to incorporate biodiversity in and around developments;
- Refuse development resulting in loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees unless the development clearly outweighs the loss.

6.2 Existing Green Infrastructure Local Plan Policies and Guidance

6.2.1 This SPD, based on the Development Management Policies of the Local Plan, takes account of the latest national and regional planning policy and guidance relating to biodiversity. Noting that access to nature can be an important contributor to people's health, better access to both existing and new wildlife habitats is sought in the London Plan.⁷⁹ The creation of new biodiversity should be encouraged wherever possible; the extent to which the guidance in this SPD applies is likely to be dependent on the type of development, its scale and location. New developments and re-development of an existing site should therefore seek opportunities to improve existing, or create new links or corridors between, habitats. The Council recognises the importance to the GI network of private gardens, land owned by utility companies and small areas of publicly accessible open space like verges adjacent to highways. Such areas, although not classified as heritage assets, cumulatively are invaluable to wildlife and biodiversity interests. Buildings can also provide new opportunities to enhance biodiversity too with the provision of green roofs, living walls / facades and bird or bat boxes.

⁷⁸ NPPF para 118

⁷⁹ London Plan 2016 – paragraph 7.61

Local Plan Policy	Summary of GI Policy Content	Development Questions / Requirements / Considerations
<p><i>Core Strategy</i></p> <p><i>Policy CS7:</i></p> <p><i>Enhancing and protecting Barnet's open spaces</i></p>	<ul style="list-style-type: none"> • Work with partners to maximise benefits open space can deliver and create a greener Barnet. • Protect open spaces. • Enhance open spaces. • Ensure positive management to provide improvements in quality and accessibility. • Ensure character of green spaces of historical significance is protected. • Meet increased demand for access to open space and opportunities for physical activity by tackling deficiencies and under provision. • Secure additional on-site open space / open space improvements at Brent Cross – Cricklewood, Mill Hill East and Colindale. • Improve access to open spaces, particularly in areas of public open space deficiency. • Secure improvements to open spaces including children's play, sports facilities and better access arrangements. • Protect incidental greenspace, trees, hedgerows and watercourses. • Enable green corridors to link Barnet's rural, urban fringe and urban green spaces. • Protect existing Sites of Importance for Nature Conservation (SINC). • Ensuring development protects existing site ecology and makes the fullest contribution to enhancing biodiversity. • Enhancing local food production through protecting allotments and supporting community food growing. 	<p>Will the proposal serve to advance the Council's objectives in creating a greener Barnet?</p> <p>Does the proposal impact on existing open space? If yes, how does it seek to protect or enhance open space?</p> <p>Are opportunities taken to improve the quality of, and access to, open spaces?</p> <p>Does the proposal impact on an area of green space with historical significance?</p> <p>Is the proposal in an area recognised as having an existing under provision of open space? If yes, how does the proposal seek to address identified deficiencies?</p> <p>Is the proposal within one of the named regeneration areas? If yes, how does the proposal ensure additional and/or open spaces improvement?</p> <p>Will the proposal improve access to district and local parks?</p> <p>For developments creating additional demand for open space will improvements be secured including in respect of children's play, sports facilities and access?</p> <p>Will greenspace, trees, hedgerows or water courses be affected?</p> <p>Will the proposal result in an overall net loss of public or private green space?</p> <p>Will the proposal impact on linkages of the green corridor network? Is it likely to enhance or harm existing linkages?</p> <p>Will any existing SINC's be affected?</p> <p>Does the proposal protect existing site ecology?</p> <p>Is the opportunity taken to make the fullest contribution to enhance biodiversity?</p> <p>Will the proposal impact on existing allotments?</p> <p>Are there opportunities to include in the design community food growing spaces?</p>
<p><i>Development Management DPD</i></p>	<ul style="list-style-type: none"> • Development should retain outdoor amenity space having regard to its character. • Requires development proposals to 	<p>Will the proposal impact on existing outdoor amenity space?</p> <p>Does the proposal retain existing wildlife</p>

<p><i>Policy DM01: (parts g, j & k)</i></p> <p><i>Protecting Barnet's character and amenity</i></p>	<p>retain existing wildlife habitat, including trees and hedges and provide an appropriate level of new habitat including tree and shrub planting.</p> <ul style="list-style-type: none"> Proposals should adequately protect existing trees and their root systems In addition to amenity value these GI features provide biodiversity value. In some cases, a survey is required to determine the significance of any biodiversity interest. Trees should be safeguarded. When protected trees are felled they should be replaced with suitable size and species of tree as advised by Planning. 	<p>habitat?</p> <p>Will any existing trees or hedges be affected?</p> <p>Is creation of new habitat (tree and shrub planting) included as part of the proposal?</p> <p>Is the proposal likely to impact on the health of any existing trees?</p> <p>Is the biodiversity value of the GI features appropriately recognised and taken account of?</p> <p>Is a survey needed to determine the significance of biodiversity interest?</p> <p>Are all existing trees safeguarded?</p> <p>Are any protected trees to be felled? If so, are they to be replaced with an appropriate size and species of tree?</p>
<p><i>Policy DM15: (part a)</i></p> <p><i>Green Belt / Metropolitan Open Land (MOL)</i></p>	<ul style="list-style-type: none"> Development in Green Belt / MOL will be refused except in very special circumstances. Construction of new buildings within Green Belt / MOL deemed inappropriate except for a limited range of uses and circumstances as set out in parts iii) to iv) of DM16a. Replacement or re-use of buildings should not adversely impact on openness of the area or purposes for including land in Green Belt / MOL. Development on land adjacent to Green Belt / MOL should respect surrounding character and not detrimentally impact on visual amenity. 	<p>In support of the proposal has a case been advanced for very special circumstances?</p> <p>Where it has is the potential harm to the Green Belt / MOL by reason of inappropriateness and any other harm is this outweighed by other considerations?</p> <p>Does the proposal fall into any of the categories of uses set out in paragraphs 89 and 90 of the NPPF identified as being not inappropriate development?</p> <p>If the development proposal is on land adjacent to Green Belt / MOL does it respect the surrounding character and not impact detrimentally on the visual amenity and openness?</p>
<p><i>Policy DM15: (part b)</i></p> <p><i>Open spaces</i></p>	<ul style="list-style-type: none"> Protects open space from development. In exceptional circumstances loss of open spaces may be acceptable if the development proposal: <ul style="list-style-type: none"> i) Is a small scale ancillary use that supports use of the open space, or ii) Equivalent or better quality open space provision can be made. Any exception does not create further public open space deficiency and has no significant impact on biodiversity. On-site provision expected in areas of public open space deficiency as 	<p>Will the proposal impact on open space? If yes, has a case been advanced for exceptional circumstances?</p> <p>Are the exceptional circumstances provided sufficient to justify the loss of open space?</p> <p>Is the development proposed on the open space small scale and ancillary to use of the open space?</p> <p>Will the proposal compliment the function of the open space?</p> <p>Will the proposal respect or harm the open character?</p> <p>Is equivalent or better quality open space to be provided?</p> <p>Will an existing open space deficiency</p>

	defined and identified in the plan policy.	be exacerbated? Will there be a significant impact on biodiversity?
<p><i>Policy DM16:</i></p> <p><i>Biodiversity</i></p>	<ul style="list-style-type: none"> Retention and enhancement or creation of biodiversity sought. Proposals which may affect a site of importance for nature conservation (SINC) should avoid adverse impact on the nature conservation value of a site. Where this is not possible minimise impact, and seek mitigation of any residual impacts. Exceptionally, where harm to nature conservation is judged to be outweighed by the benefits of the proposal, and development therefore allowed, appropriate compensation should be sought. Development adjacent to or within areas identified as part of the Green Grid Framework is required to contribute to the enhancement of the Green Grid 	<p>Will the proposal retain, enhance or create biodiversity?</p> <p>Is the proposal likely to affect a SINC? If yes, is there likely to be adverse impact on the nature conservation value of the site?</p> <p>Does the proposal seek to minimise any impacts on the SINC?</p> <p>Are mitigation measures outlined to address any residual impacts?</p> <p>Has a compelling case been made to demonstrate that harm to nature conservation interests are outweighed by the benefits that the proposal would bring?</p> <p>In respect of any harm, is appropriate compensation proposed?</p> <p>Is the proposal within or adjacent to areas included within the All London Green Grid Framework?</p> <p>If yes, are measures proposed to enhance the Green Grid?</p>

Table 5: Local Plan Policies – GI requirements and considerations

6.2.2 As stated in earlier sections, this SPD should also be read alongside the other Council SPDs for Sustainable Design and Construction and Residential Design Guidance, both of which were adopted in 2016.

6.2.3 In implementing Local Plan Policy DM16 the Council undertakes to do the following:

- Protect and enhance Welsh Harp SSSI and all sites of Metropolitan, Borough or Local Importance for Nature Conservation. Planning permission for development that adversely affects any of these sites will not be granted unless the economic or social benefits of the proposals clearly outweigh the nature conservation importance of the site, and only then if adequate mitigation can be provided and no alternative site is available;
- Not grant planning permissions which would adversely affect priority species / habitats identified in either the UK or London Biodiversity Action Plans unless the economic or social benefits of the proposals clearly outweigh the nature conservation importance of the site, and only then if adequate mitigation measures to secure the protection of the species / habitat can be provided and no alternative site is available;
- Protect and actively promote the linking of habitats via wildlife corridors;
- Protect the individual quality and character of, and promote access to, areas of GI;
- Protect and enhance the biodiversity of the Blue Ribbon Network within Barnet including rivers and their associated corridors; and
- Seek enhancements to biodiversity in line with UK and London BAP targets as an integral part of new development.

6.3 Green Infrastructure Considerations in Preparing and Determining Applications

Statutory Green Infrastructure Protections

- 6.3.1 Developers and the Council need to have regard to additional species and habitats that are identified at the national, London or local level as priorities for protection and enhancement. This includes species which are of a particular conservation priority in London.
- 6.3.2 Certain development activities within the vicinity of protected species and their habitats require a licence from Natural England. It is the developer's responsibility to establish the likelihood of the presence of any protected and priority species either on, or within the vicinity of, their site. The detail and length of the survey period will depend on the suspected likelihood of the presence of protected species and what the species is. The site may only be used for part of the year by a protected species. It is also the developer's responsibility to ensure that they have complied with all legislation with regards to protected species when developing their site. The protected species most likely to be encountered on development sites in London are bats, badgers, hedgehogs, water vole, great crested newt and reptiles (grass snake, common lizard and slow-worm). Specialist advice on how to manage and protect specific species can be found on Natural England's web-site and from the London Wildlife Trust or from specialist conservation bodies for individual species such as the Royal Society for the Protection of Birds (RSPB), Buglife and the Bat Conservation Trust.
- 6.3.3 In addition to its duties with regard the protection and planting of trees in considering development proposals, the Council is empowered to make Tree Preservation Orders when expedient to do so in the interests of amenity. It will therefore use this power where it considers there to be a clear benefit to public amenity through bringing trees and woodland under planning control.

Green Infrastructure considerations included as part of a proposal

- 6.3.4 There is now a wealth of evidence on the many benefits of accessible woodland and high canopy cover including, as outlined in the SPD, improving: physical and mental health; air quality; water quality; water management (reducing flooding); shading; cooling through evapotranspiration as well as the more obvious benefit of improving biodiversity. Background research and evidence for this, together with guidance on the retention and planting of trees in new development, can be found in the report Residential Development and Trees published by the Woodland Trust.⁸⁰
- 6.3.5 The Council will support proposals which enhance and manage natural green space, protect important species, and promote public access to nature. Measures to enhance biodiversity will be sought as part of development schemes. Developers should incorporate GI into their scheme at the initial design stage to ensure that the full consideration can be given to the type of vegetation that would be appropriate in the proposed location, including allowing sufficient space to enable the vegetation to reach maturity and whether there are any watering and daylight requirements. The Council will give particular attention to the use of landscaping and tree planting to

⁸⁰ <https://www.woodlandtrust.org.uk/publications/2015/07/residential-developments-and-trees/>

enhance the public areas of a development and how the proposed landscaping relates to the immediately surrounding area. To maximise the environmental benefits of GI the preference is that it is provided in the form of vegetated landscaping (including trees and rain gardens) at ground level or as a vegetated green roof. Green roofs should meet the standards set out in GLA (2008) guidance provided in the 'Living Roofs and Walls' report⁸¹.

- 6.3.6 People are most likely to be influenced by their environment when moving to a new home but often the design elements to help them maintain or achieve a healthy weight are missing when they move into new developments. Therefore, in new schemes, to influence behaviour of residents from the outset it is important to ensure that the elements of a healthy-weight environment – such as parks, safe and legible walking routes, provision of community facilities etc are in place. However, in practice the phasing of larger scale development schemes is often designed to ensure that these elements are installed only once a prescribed percentage of the homes are already built, meaning that people can have lived in an area for a length of time before the infrastructure and services that might influence their lifestyle habits are provided.
- 6.3.7 If local healthy-weight impacts of planning policy and development schemes are systematically evaluated it is possible to demonstrate that design details can have a cumulative impact for creating healthy-weight environments. Often relatively minor design elements included as part of a scheme such as secure bike storage, direction signage, benches and ensuring sufficient space to sit and eat at home, gardens and spaces for communal food growing can influence a person's propensity to be active and eat healthily.

Supporting Green Infrastructure Information

- 6.3.8 Major and large-scale development proposals should provide an ecological statement which demonstrates how protection of biodiversity and habitat quality will be achieved. The statement should provide recommendations on where enhancements to biodiversity can be made. Developers are expected to provide a comprehensive site survey identifying the trees and other natural and landscape features of the site as part of the information provided in support of the planning application. Accurate site plans indicating the true positions and sizes of trees, hedges and other vegetation as well as physical features such as changes of level, ponds, streams, ditches, mounds etc are essential. Information provided must clearly distinguish trees or other features to be removed from those to be retained.
- 6.3.9 The Council expects development proposals to make adequate provision for the retention of GI features which it considers to be of significant or of potential amenity value. Although trees may be visually dominant, other vegetation can be of equal or greater importance ecologically as well as contributing visually to the landscape. In cases where applications are in highly visible site locations or have a potentially significant impact, the Council will expect submission of a landscape, ecological or heritage appraisal and assessment and may also require the provision of arboricultural, landscape or ecological impact studies. Even where no additional open space is being created development should replace, and seek to enhance, biodiversity for example through the provision of green roofs and green walls / facades.

⁸¹ <https://www.london.gov.uk/sites/default/files/living-roofs.pdf>

- 6.3.10 Having regard to soil conditions, all new developments need to clearly show and include descriptions of the soft landscaping at the planning application stage and also address assumptions made with regard to future maintenance responsibilities. The terms of any transfer of responsibility and/or funding from one party to another should be outlined in Section 106 Agreements.
- 6.3.11 Section 2.16 of the Sustainable Design & Construction SPD sets out biodiversity design and construction principles in relation to the following:
- Replacement and enhancement of natural environmental features;
 - Green roofs, trees and green façades and rainwater gardens – ensuring that the built form of the development can contribute to the ecological environment;
 - Low maintenance, indigenous landscaping;
 - Good site management to ensure the avoidance of pollution incidents;
 - Preservation of valuable habitat features; and
 - Protected wildlife species that receive statutory protection.
- 6.3.12 Landowners have an important role in enabling the creation of connected walking and cycling networks. Access to the countryside and rural walking / cycling networks can sometimes be disrupted by landowners who, often for understandable and justifiable reasons, refuse permission for members of the public to access and cross their land. This is likely to lead to longer less direct routes that can discourage their use. Design and Access Statements prepared by developers in support of planning applications evaluated at an early stage can be used to ascertain whether the walking and cycling distances in a proposed scheme meet thresholds suggested in good practice.
- 6.3.13 As noted in the Sustainable Design & Construction SPD, outdoor amenity space is highly valued and suitable provision will help to protect and improve the living standards of residents as well as contribute to maintaining and enhancing the wider character of the Borough. New development should make a positive contribution to the character and functions of the surrounding landscape through sensitive siting and good design, avoiding unacceptable impacts. Gardens make a significant contribution to local character, biodiversity, tranquillity and sense of space. Residential units with insufficient garden or amenity space are unlikely to provide good living conditions for future occupiers. For houses, amenity space should be provided in the form of individual rear gardens. For flats, options include provision communally around buildings or on roofs or as balconies. Whatever option is chosen it must be usable space. Table 2.3 of the Sustainable Design & Construction SPD and section 8 of the Residential Design Guidance SPD set out the outdoor amenity space standard requirements and principles in terms of size and design.
- 6.3.14 Development can impact the biodiversity or habitat value of gardens and these factors will be considered when making decisions on development which affects residential gardens. For example, it is short sighted to allow insufficient space for trees in relation to a development. New trees should be of a species capable of growth that is appropriate to their location and setting. Where mature trees are retained on site consideration should be given to succession planting so that new trees can become well established by the time that the mature tree dies. If mature trees need to be cut back or younger trees have insufficient room to grow the full extent of the existing or potential value will be lost. In designing new developments the relationship of trees to buildings must therefore take full account of the potential interception of sun / daylight, the shading of habitable rooms and gardens, the

existing and potential height and spread of particular tree species and potential safety and structural concerns. Developments will be expected to adhere to relevant British Standards in respect of retaining existing, and the planting of new, trees.⁸²

- 6.3.15 In relation to the consideration given to trees when constructing basement extensions, the Residential Design Guidance SPD (paragraph 14.45) states that nearby trees roots on or adjoining the site should not be damaged. Building operations involving basements beneath an existing garden should therefore ensure that adequate precautions are taken that existing trees and their root systems and other landscape features are protected and not damaged. The design of a basement should also take careful account of any constraints posed by nearby trees. Potential impacts on existing trees in adjoining properties or on the street should therefore be carefully considered. Where it is considered that basement development is likely to affect any tree, whether on the site itself or outside, the applicant may be requested to provide a tree survey and also submit an Arboricultural Impact Assessment in accordance with BS 5837 2012⁸³.

Promoting the creation of additional habitat

- 6.3.16 Whilst habitat provided on a building can benefit some species it cannot fully replace habitat lost at ground level. New habitat provision should however be provided as part of a development's urban greening measures. This can include ecologically sensitive landscaping, comprising water features or new habitat provided on buildings, such as in the form of green roofs and walls and roof gardens, ponds and wetlands potentially incorporated with SuDs and bird and bat boxes and insect habitats. There are numerous web-sites that provide information on how to include and enhance biodiversity on development sites.
- 6.3.17 The potential to increase biodiversity in public realm improvements should be maximised. The ecological enhancement of urban greening measures in the public realm can in particular increase the connectivity between existing areas of urban habitat. The Mayor of London's All London Green Grid identifies opportunities for improving the connectivity of green infrastructure that the Council is committed to progressing whenever opportunities arise, including the creation of corridors for nature conservation across London.
- 6.3.18 Development management engagement with urban designers, landscape architects and developers is encouraged through pre-application discussions.

⁸² BS 5837: 2012 Trees in relation to design, demolition and construction and BS 8545: 2014 Trees: from nursery to independence in the landscape

BS 8545:2014 *Trees: from nursery to independence in the landscape*
(<http://shop.bsigroup.com/ProductDetail/?pid=00000000030219672>)

⁸³ Ibid

Contacts and Additional Information

Organisations

Department for Environment, Food and Rural Affairs (DEFRA): Nobel House, 17 Smith Square, London, SW1P 3JR. (UK Biodiversity Action Plan)

Environment Agency: Apollo Court, 2 Bishops Square Business Park, St Albans Road West, Hatfield, Herts, AL10 9EX.

Greater London Authority: City Hall, The Queen's Walk, More London, London SE1 2AA.

London Wildlife Trust: Skyline House, 200 Union Street, London SE1 0LX.

Natural England: Northminster House, Peterborough, PE1 1UA.
Green Infrastructure Guidance 2009

Transport for London: Palestra 197 Blackfriars Road, London SE1 8NJ

Additional Information Sources

Advice, research and promotion of green roof systems for environmental urban regeneration see livingroofs.org and www.greenroofs.org

Biodiversity by Design: A guide for sustainable communities, Town and Country Planning Association 2004 http://www.tcpa.org.uk/data/files/bd_biodiversity.pdf

Design for Biodiversity: c/o London Wildlife Trust

Environment Agency advice on Biodiversity, flora and fauna - <http://www.environment-agency.gov.uk/research/policy/40131.aspx>

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<http://www.woodlandtrust.org.uk/publications/2015/03/the-economic-benefits-of-woodland/>

Trees in the townscape: A guide for decision makers, Trees and Design Action Group
November 2012 <http://www.tdag.org.uk/trees-in-the-townscape.html>

Trees in the Hard Landscape: A Guide for Delivery, Trees and Design Action Group 2014
<http://www.tdag.org.uk/trees-in-hard-landscapes.html>

World Health Organisation (2014). WHO/European Health Economic Assessment tool (HEAT), <http://www.heatwalkingcycling.org/>

Appendix A - Glossary

Term	Definition
Accessible transport	Transport services and vehicles designed and operated to be useable by people with disabilities and other transport disadvantaged people: such as the elderly, parents with prams and children and wheelchair users.
All London Green Grid	A green infrastructure policy framework identifying the functions and benefits of green infrastructure set out in Supplementary Planning Guidance to the London Plan.
Air Quality Management Area (AQMA)	Areas where air quality objectives are not being met are normally designated as Air Quality Management Areas. It is then a requirement that affected Local Authorities implement a plan to improve air quality – a local Air Quality Action Plan.
Ambient Noise	On-going sound in the environment such as from transport and industry, as distinct from individual events, such as a concert. Unless stated otherwise, noise includes vibration.
Amenity	Element of a location or neighbourhood that helps to make it more attractive or enjoyable for residents and visitors.
Ancient Woodlands	Woodland that is believed to have existed from at least medieval times and as such probably been continuously wooded since 1600.
Authorities Monitoring Report (AMR)	A report produced each financial year to indicate the progress of production of planning policy documents, and monitor the effectiveness of policies contained within the adopted plan. The report will outline action that may need to be taken to meet targets or if policies need to be replaced. Changes will be implemented through a revised Local Development Scheme.
Biodiversity	The variety of plants and animals and other living things in a particular area or region. It encompasses habitat diversity, species diversity and genetic diversity. Biodiversity has value in its own right and has social and

	economic value for human society.
Biomass	The total dry organic matter or stored energy of plant matter. As a fuel it includes energy crops and sewage as well as forestry and agricultural residues.
Blue Ribbon Network	A spatial policy identified in the London Plan covering London's waterways and water spaces and adjacent land.
Brownfield Land or Site	Both land and premises are included in this term which refers to a site that has previously been used or developed and is not currently fully in use, although it may be partially occupied or utilised. It may also be vacant, derelict or contaminated. This excludes open spaces and land where the remains of previous use have blended into the landscape, or have been overtaken by nature conservation value or amenity use and cannot be regarded as requiring development.
Brown Roofs	Roofs which have a layer of soil or other material which provides a habitat or growing medium for plants or wildlife.
Carbon dioxide (CO ₂)	Carbon dioxide is a naturally occurring gas comprising 0.04 per cent of the atmosphere. The burning of fossil fuels releases carbon dioxide and has increased its concentration in the atmosphere. It contributes about 60 per cent of the potential global warming effect of man-made emissions of greenhouse gases.
Carbon neutral	Contributing net zero carbon dioxide emissions to the atmosphere. (See also zero carbon)
Combined Heat & Power (CHP)	The combined production of electricity and usable heat is known as Combined Heat and Power (CHP). Steam or hot water which would otherwise be rejected when electricity alone is produced is used for space or process heating.
Community food growing	The cultivation of land by groups based on residential estates, faith premises, places of employment, schools or within neighbourhoods.

Community Infrastructure Levy (CIL)	CIL is a levy that local authorities in England and Wales can choose to charge on new developments in their area. The money can be used to support development by funding infrastructure that the council, local community and neighbourhood want.
Conservation Area	An area of special architectural or historic interest, designated under the Planning (Listed Buildings & Conservation Areas) Act 1990, whose character and appearance it is desirable to preserve or enhance. There are special rules on some development in conservation areas.
Decarbonise	To remove or reduce the potential carbon dioxide emissions to the atmosphere from a process or structure.
Decentralised Energy Network	A Decentralised Energy (DE) network produces heat as well as electricity at or near the point of consumption.
Definitive Map	The legal record of public rights of way, the map shows the status and route.
Development Management Policies DPD	A Development Plan Document setting out the detailed borough-wide implementation planning policies for development and forms the basis for local planning authority decision making.
Development Plan Documents (DPDs)	Statutory planning documents that currently form part of the Barnet Local Plan including the Core Strategy, Development Management and Area Action Plans.
Environment Agency (EA)	Responsible for preventing or minimising the effects of pollution on the environment. It also provides guidance and information on matters such as waste management, water quality and flood protection.
Environmental Assessments	Assessments providing information about the environmental effects of a project that has been collected, assessed and taken account of in deciding whether a project should go ahead.
Environmental Statement	A statement setting out a developer's assessment of a project's likely environmental effects, submitted with the application for consent for the purposes of

	the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.
Environmental Impact Assessment (EIA)	Predicts the effects on the environment of a development proposal, either for an individual project or a higher-level strategy (a policy, plan or programme), with the aim of taking account of these effects in decision-making.
Equality Impact Assessment (EQIA)	An equality impact assessment involves assessing the likely or actual effects of policies or services on people in respect of disability, gender and racial equality.
Flood Risk Assessment (FRA)	Planning applications for development proposals of 1 hectare or greater in Flood Zone 1 and all proposals for new development located in Flood Zones 2(Medium Probability) 3a (High Probability) and 3b (The Functional Floodplain) should be accompanied by a FRA. This should identify and assess the risks of all forms of flooding to and from the development and demonstrate how these flood risks will be managed, taking climate change into account. For major developments in Flood Zone 1, the FRA should identify opportunities to reduce the probability and consequences of flooding.
Flood Zones	Flood Zones are the starting point for the sequential approach. Flood Zones refer to the probability of sea and river flooding only, ignoring the presence of existing defences.
Garden Land	Including back gardens and private residential gardens, is the area within a defined dwelling curtilage used for amenity purposes from which the public is excluded.
Greater London Authority (GLA)	A strategic body constituted under the Greater London Authority Act 1999, consisting of the Mayor of London, the London Assembly and staff, which has responsibility for producing regional strategic policy in a number of areas, including transport, economic development, planning, and the environment for London.

Green Belt	A national policy designation that helps to contain development, protect the countryside and promote brownfield development. Development is strictly controlled in the Green Belt with a presumption against inappropriate development.
Green Chain / Link	These are areas of linked but separate open spaces and the footpaths between them. They are accessible to the public and provide way-marked paths and other pedestrian and cycle routes.
Green corridors	Relatively continuous areas of open space threading through the built environment which whilst linked are not always publicly accessible. They may allow animals and plants to be found further into the built-up area than would otherwise be the case and provide an extension to the habitats of the sites they join.
Green Grid	The Green Grid is a strategic framework for creating a network of interlinked, multi-purpose open spaces connecting the Green Belt, Metropolitan Open Land and open space to places where people live and work.
Green Infrastructure (GI)	The multifunctional, interdependent network of open and green spaces and green features. This network includes urban areas, the urban fringe and the countryside. It provides multiple benefits for people and wildlife. (See Section 1.3 for a fuller descriptive definition.)
Green Roofs / Walls	Planting on roofs or walls to provide climate change, amenity, food growing and recreational benefits.
Health	Defined by World Health Organisation as “a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity.
Health Impact Assessment (HIA)	An assessment undertaken where a development or plan is anticipated to have significant implications for people’s health and wellbeing. The purpose on an HIA is to identify opportunities for minimising harms (including unequal impacts) and maximising potential health gains.

Health Inequalities	Defined by the Government as inequalities in respect of life expectancy or general state of health which are wholly or partly a result of differences in respect of general health determinants.
Landscape	All that can be seen when looking across an area of land, including hills, rivers, buildings, trees, and plants.
Lifetime Neighbourhoods	Are designed to be welcoming, accessible and inviting for everyone, regardless of age, health or disability, is sustainable in terms of climate change, transport services, housing, public services, civic space and amenities making it possible for all people to enjoy a fulfilling life and take part in the economic, civic and social life of the community.
Listed Building	A building or other structure recorded on a statutory list of Special Architectural or Historic Interest. The grades of listing are Grade I, II* or II with Grade I being the highest. Listing includes the interior as well as the exterior of the building, and any buildings or permanent structures within the curtilage. A listed building is a heritage asset.
Local Plan	The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community. In law this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004. Current core strategies or other planning policies, which under the regulations would be considered to be development plan documents, form part of the Local Plan.
London Plan	The Mayor's London Plan sets out an integrated economic, environmental and social framework for the development of the capital over the next 20-25 years. London boroughs Local Plans are required to be in general conformity with the London Plan. Policies in the London Plan guide decisions on planning applications by councils and the Mayor.
Major Development (applications decided by the London Boroughs)	Major Developments are defined as these: <ul style="list-style-type: none"> • for dwellings: where 10 or more are

	<p>to be constructed (or if number not given, area is more than 0.5 hectares).</p> <ul style="list-style-type: none"> • for all other uses: where the floor space will be 1000 m² or more (or the site area is 1 hectare or more).
Mixed Use (or Mixed Use Development)	Provision of a variety of activities and uses, such as residential, community and leisure uses, on a site or within a particular area.
National Planning Policy Framework (NPPF)	<p>Sets out the Government's planning policies for England that Local Planning Authorities need to take into account when drawing up their Local Plan and other documents and how they are expected to be applied making decisions on planning applications.</p> <p>Published by the Department of Communities and Local Government, the NPPF replaced planning documents, primarily Planning Policy Statements (PPS) and Planning Policy Guidance (PPGs), which previously comprised Government policy with respect to planning.</p>
Natural Capital	Describes the economic benefits to people provided by the services the environment provides for free. These include cleaner air, cleaner water, better health, pollination of crops, contact with nature and attractive landscapes.
Nature Conservation	Protection, management and promotion for the benefit of wild species and habitats, as well as the human communities that use and enjoy them. This also covers the creation and re-creation of wildlife habitats and the techniques that protect genetic diversity and can be used to include geological conservation.
Nature Reserve	An area designated to protect and conserve important areas of wildlife habitat and geological formations and to promote scientific research.
Outdoor amenity space	Those open areas within a development which are used exclusively by the occupants for their recreation. These could be private gardens or communal open spaces.

Protected Species	Plants and animal species afforded protection under certain Acts of Law and Regulations.
Public Transport Accessibility Level (PTAL)	<p>A detailed and accurate measure of the accessibility of a point to the public transport network, taking into account walk access time and service availability. PTALs reflect :</p> <ul style="list-style-type: none"> • walking time from the point of interest to the public transport access points; • the reliability of the service modes available; • the number of services available within the catchment; and • the level of service at the public transport access points – i.e. average waiting time.
Renewable Energy	Energy derived from a source that is continually replenished, such as wind, wave, solar, hydroelectric and energy from plant material, but not fossil fuels or nuclear energy. Although not strictly renewable, geothermal energy is generally included.
Retrofitting	The addition of new technology or features to existing buildings in order to make them more efficient and to reduce their environmental impacts.
Right of Way	A path that anyone has the legal right to use on foot, and sometimes using other modes of transport.
Runoff	Runoff is the flow of water from rain or other sources over land. Greenfield run off rates are a requirement set out in the London Plan and relate to the speed of run off from an undeveloped site i.e. a greenfield.
Secure by Design	The planning and design of street layouts, open space, and buildings so as to reduce the likelihood or fear of crime.
Sites of Importance for Nature Conservation (SINC)	SINCs are areas protected through the planning process having been designated for their high biodiversity value. SINCs are classified into sites of metropolitan importance, borough and local importance for nature conservation.

Site of Special Scientific Interest (SSSI)	A SSSI is an area identified by Natural England as of special interest by reason of its fauna, flora, geological or physiographic (landform) features. Classification notified under Section 28 of the Wildlife and Countryside Act (1981 as amended).
Supplementary Planning Document (SPD)	Document providing supplementary information in respect of the policies in development plan documents and not forming part of the development plan nor subject to independent examination. Must be subject to public consultation if it is to be accorded any weight in decisions on development proposals. SPDs can be taken into account as a material planning consideration.
Sustainable Development	This covers development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Sustainable Drainage Systems (SuDS) also referred to as Sustainable Urban Drainage Systems (SUDS)	SuDS can reduce the total amount, flow and rate of surface water that runs directly to rivers through stormwater systems.
Transport for London (TfL)	One of the GLA groups of organisations, accountable to the Mayor, with responsibility for delivering an integrated and sustainable transport strategy for London.
Tree Preservation Order (TPO)	Made under the Town and Country Planning Act 1990 by the local planning authority to protect trees of importance for amenity, landscape and nature conservation. A tree subject to an order may not normally be topped, lopped or felled without the consent of the Local Planning Authority.
Urban Greening	Urban greening describes the green infrastructure elements that are most applicable. Due to the density of the built environment green roofs, street trees and soft landscaping techniques are appropriate elements of green infrastructure.
Zero Carbon	A zero carbon development is one whose net carbon dioxide emissions, taking account of emissions associated with all energy use, is equal to zero or negative across the year.

Appendix B - Local Plan Policies

Policy DM15: Green Belt and open spaces

- a) Green Belt/Metropolitan Open Land
 - i. Development proposals in Green Belt are required to comply with the NPPF (paras 79 to 92). In line with the London Plan the same level of protection given to Green Belt land will be given to Metropolitan Open Land (MOL).
 - ii. Except in very special circumstances, the council will refuse any development in the Green Belt or MOL which is not compatible with their purposes and objectives and does not maintain their openness.
 - iii. The construction of new buildings within the Green Belt or Metropolitan Open Land, unless there are very special circumstances, will be inappropriate, except for the following purposes:
 - a. Agriculture, horticulture and woodland;
 - b. Nature conservation and wildlife use; or
 - c. Essential facilities for appropriate uses will only be acceptable where they do not have an adverse impact on the openness of Green Belt or MOL.
 - iv. Extensions to buildings in Green Belt or MOL will only be acceptable where they do not result in a disproportionate addition over and above the size of the original building or an over intensification of the use of the site.
 - v. The replacement or re-use of buildings will not be permitted where they would have an adverse impact on the openness of the area or the purposes of including land in Green Belt or MOL.
 - vi. Development adjacent to Green Belt/MOL should not have a detrimental impact on visual amenity and respect the character of its surroundings.
- b) Open Spaces
 - Open space will be protected from development. In exceptional circumstances loss of open space will be permitted where the following can be satisfied:
 - a. The development proposal is a small scale ancillary use which supports the use of the open space or
 - b. Equivalent or better quality open space provision can be made.

Any exception will need to ensure that it does not create further public open space deficiency and has no significant impact on biodiversity

- In areas which are identified as deficient in public open space, where the development site is appropriate or the opportunity arises the council will expect on site provision in line with the standards set out in the supporting text (para 16.3.6).

Policy DM16: Biodiversity

- a. When considering development proposals the council will seek the retention and enhancement, or the creation of biodiversity.
- b. Where development will affect a Site of Importance for Nature Conservation and/or species of importance the council will expect the proposal to meet the requirements of London Plan Policy 7.19E.
- c. Development adjacent to or within areas identified as part of the Green Grid Framework will be required to make a contribution to the enhancement of the Green Grid.

Policy CS7: Enhancing and protecting Barnet's open spaces

In order to maximise the benefits that open spaces can deliver and create a greener Barnet we will work with our partners to improve Barnet's Green Infrastructure.

We will create a greener Barnet by:

Protecting open spaces, including Green Belt and Metropolitan Open Land;

Enhancing open spaces, ensuring positive management of Green Belt and Metropolitan Open Land to provide improvements in overall quality and accessibility;

Ensuring that the character of green spaces of historic significance is protected;

Meeting increased demand for access to open space and opportunities for physical activity, by tackling deficiencies and under provision through:

- securing additional on-site open space or other open space improvements in the identified growth areas including 8 ha of new provision at Brent Cross – Cricklewood, 5.5 ha of new provision at Mill Hill East and 5 ha at Colindale
- improving access to open spaces particularly in North and East Finchley and other areas of public open space deficiency identified by Map 10. We will seek to improve provision in these areas of deficiency with the objective of increasing the area of the borough that has access to district and local parks in accordance with the London Plan criteria
- securing improvements to open spaces including provision for children's play, sports facilities and better access arrangements, where opportunities arise, from all developments that create an additional demand for open space. Standards for new provision are set out in DM15 – Green Belt and Open Spaces
- maintaining and improving the greening of the environment through the protection of incidental greenspace, trees, hedgerows and watercourses enabling green corridors to link Barnet's rural, urban fringe and urban green spaces
- protecting existing Sites of Importance for Nature Conservation and working with our partners including the London Wildlife Trust to improve protection and enhancement of biodiversity in Barnet
- ensuring that development protects existing site ecology and makes the fullest contributions to enhancing biodiversity, both through on-site measures and by contribution to local biodiversity improvements; and
- enhancing local food production through the protection of allotments and support for community food growing including the Mayor's Capital Growth Initiative.

In supporting new Green Infrastructure we will:

- set out an approach to improving the network of green spaces within the Green Infrastructure SPD
- as part of the All London Green Grid work with neighbouring authorities to establish Area Frameworks as the basis for identification, creation and management of new green spaces as part of:
 - a. Lea Valley and Finchley Ridge Green Grid Area
 - b. Brent Valley and Barnet Plateau Green Grid Area
- reflect the policies and objectives in the Watling Chase Forest Plan when assessing development proposals in the area covered by the Community Forest.