Hillingdon Local Plan

Integrated Impact Assessment
Scoping Report

Preliminary Consultation Draft

March 2024

HILLINGDON
LONDON

www.hillingdon.gov.uk

If you would like us to translate information about this project into another language, or require an interpreter, please call 0800 9949323.

1 Introduction

1.1 Background

Hillingdon Council is in the process of reviewing its Local Plan. As a Local Planning Authority, Hillingdon Council has a duty to prepare a Local Plan that sets its strategy for development within its area and the policies that will be used to direct development and determine applications for planning permissions across the borough. The new Local Plan will replace:

- Hillingdon Local Plan Part 1: Strategic Policies,
- Hillingdon Local Plan Part 2: Development Management Policies and
- Hillingdon Local Plan Part 2: Site Allocations and Designations.

This Scoping Report represents the first stage of the Integrated Impact Assessment (IIA) of the Local Plan review. The IIA process is carried out alongside the plan production process and will make recommendations to enhance the potential positive outcomes and minimise the potential negative impacts of a policy.

1.2 Integrated Impact Assessment

The IIA combines the assessments of the social, economic and environmental impacts of planning policies into a single framework. It includes the following processes: Strategic Environmental Assessment (SEA); Sustainability Appraisal (SA); Equalities Impact Assessment (EqIA); Community Safety Impact Assessment (CSIA); and Health Impact Assessment (HIA). Integrating these different types of assessment into a single framework ensures issues are not considered in isolation and this helps produce a more comprehensive assessment. It simplifies the assessment process too, as many of the same issues are covered by these different assessments. The IIA process also allows for more detailed assessments of topics where required.

Sustainability Appraisal and Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a process of identifying and evaluating the environmental impacts of a plan or programme, as well as the identification of mitigation measures for dealing with negative effects. Assessment of effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects. The SEA Directive came into force in the UK on 21 July 2004 and applies to a range of English plans and programmes including Local Plans. The SEA legislation identifies certain topic areas which should be covered in an assessment. These are listed below in Table 1 below:

Table 1. SEA topics

Biodiversity
Population
Human health
Fauna
Flora
Soil
Water
Air
Climatic factors
Material assets
Cultural heritage
Landscape
The interrelationship between the above factors

SA is a process of assessing the likely significant social, economic and environmental impacts of a plan and aims to ensure that sustainable development is considered at each stage of the plan-making process.

Under section 19(5) of the Planning and Compulsory Purchase Act 2004, Local Plans are legally required to undergo an SA. This Act stipulates that the SA must comply with the requirements of the SEA Directive which was transposed directly into UK law through the SEA Regulations. This means that the environmental assessment included in the SA process must be conducted in accordance with the requirements of the SEA Directive.

Sustainability Appraisals as a whole should be carried out in accordance with Government Guidance A Practical Guide to the SEA Directive (ODPM, 2005) and the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG). Sustainability Appraisal, as defined under the Planning and Compulsory Purchase Act, fully incorporates the requirements of the SEA directive. The term SA is therefore used to refer to the combined assessment and will be used to refer to this for the rest of the report.

Health Impact Assessment

The purpose of a Health Impact Assessment (HIA) in this instance is to provide information on the likely health effects of the Local Plan. It ensures health and wellbeing impacts are considered at each stage of the plan-making process.

While carrying out a HIA is not a statutory requirement, it is an important tool in assessing the effects of the Local Plan on health and well-being in the borough and identifying ways to enhance positive health effects and reduce negative health effects.

The NPPF recognises the role planning can play in the creation of healthy and healthier communities and the PPG also recognises the usefulness of HIAs.

While there is no statutory framework or recommended guidance, the Council will use the NHS London Healthy Urban Development Unit (HUDU) "Rapid Health Impact Assessment Tool" published in 2019 as a guide[1].

HIA will be undertaken as an assessment within the IIA.

Equality Impact Assessment

The Equality Act 2010 includes a public sector equality duty which requires public organisations and those delivering public functions to show due regard to the need to:

- Eliminate unlawful discrimination, harassment and victimisation and any other conduct prohibited by the Act,
- Advance equality of opportunity between people who share a protected characteristic and people who do not share it,
- Foster good relations between people who share a protected character and people who do not share it, and
- Identify and seek mitigation for health inequalities and disparities that pre-exist, or at risk of emerging as a result of this plan.

An Equalities Impact Assessment (EqIA) helps identify the likely effects that a policy or objective may have on the key protected characteristics (see Table 2 below) covered by the Equality Act, as well as any groups which may not be covered by the Equality Act. Integrating the EqIA into the overall assessment of the Local Plan Review helps ensure the different effects of policies are not considered in isolation and that environmental issues, for example, are considered alongside equality issues.

Table 2. Protected equalities characteristics as identified in the Equality Act 2010

Protected characteristics as identified in the Equality Act 2010
Age
Disability
Sexual orientation
Gender reassignment
Marriage and civil partnership
Pregnancy and maternity
Race – this includes ethnic or national origins, colour or nationality
Religion or belief (including lack of belief)
Sex (i.e., gender)

The EqIA will be undertaken as an assessment within the IIA.

[1] http://www.healthyurbandevelopment.nhs.uk/wp-content/uploads/2019/10/HUDU-Rapid-HIA-Tool-October-2019.pdf

Community Safety Impact Assessment

Under the provisions of the Crime and Disorder Act 1998, the Council has a duty, when undertaking its functions, to consider how it can prevent crime and disorder (including anti-social behaviour) as well as the misuse of drugs, alcohol and other substances.

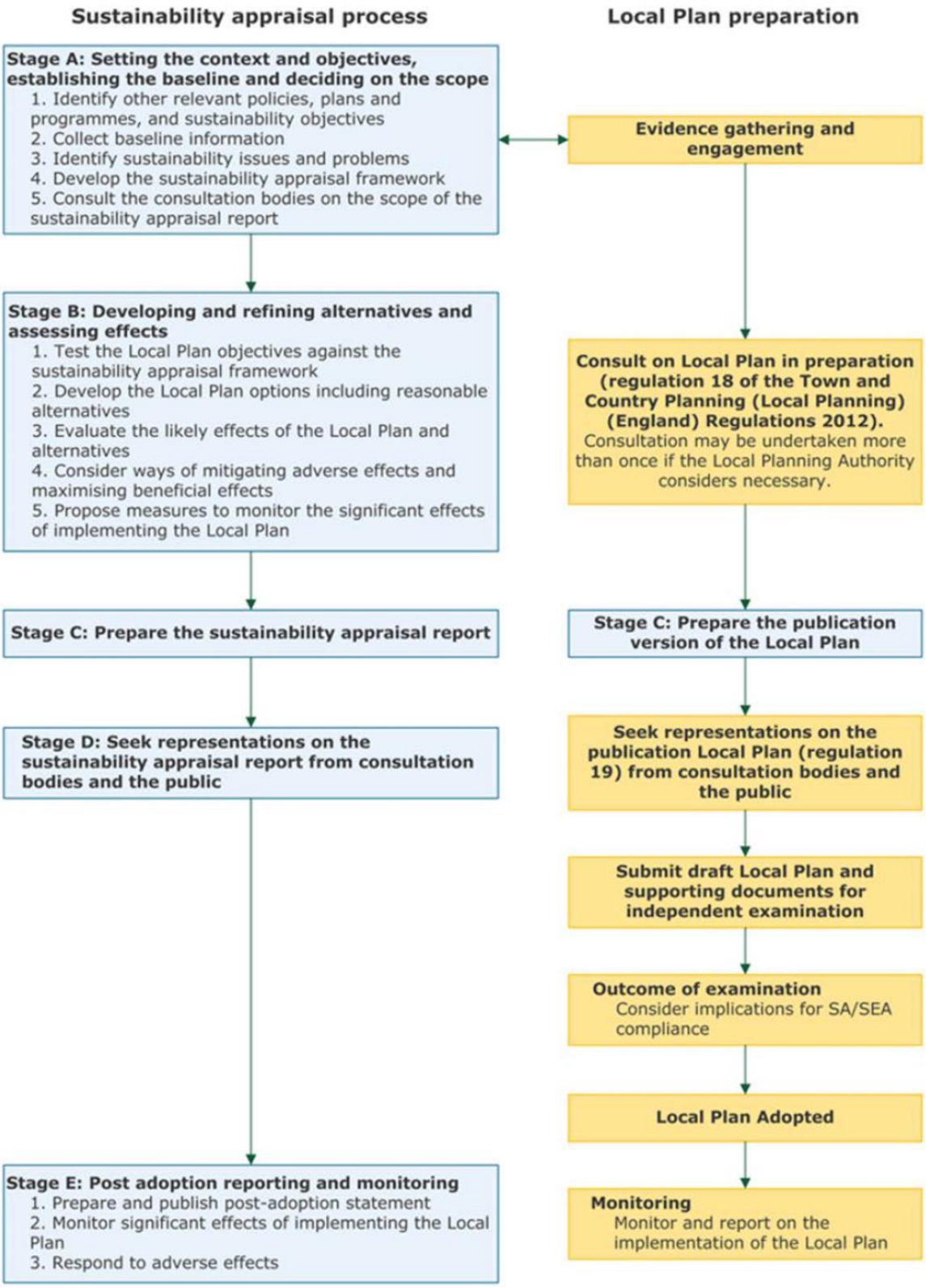
The Community Safety Impact Assessment (CSIA) is used to ensure that the Local Plan objectives and policies do not have a negative impact on community safety, and also, identify opportunities to improve community safety where possible. Crime and safety impacts will be assessed through the IIA process.

1.3 IIA process

The IIA will be carried out in broadly the same way that a standalone SA would be carried out, in accordance with the Government's Planning Practice Guidance (PPG), and incorporating the EqIA and HIA into this process. Figure 1 below summarises this process from the start to finish of the Local Plan preparation process.

This scoping report represents Stage A of the process and is structured to easily identify stages A1 to A5 of the process in this document.

Figure 1. Sustainability appraisal process to be followed by the IIA



Source: Planning Practice Guidance

1.4 Purpose of the scoping report

The Scoping Report represents the initial stage in the IIA process for the review of the Local Plan. It establishes a scope of issues and objectives which will be the focus of successive stages of assessment in the IIA. It should set out the context, objectives and approach of the assessment; and identify relevant environmental, economic and social issues and objectives. It does through the following:

- Setting the scope and level of detail of the IIA.
- An analysis of the context in which the plan is being prepared – this includes assessing other policies, plans programmes, strategies and initiatives which could have an influence on the content of the plan. This process helps identify objectives/constraints which the Local Plan can incorporate/plan for at a local level.
- Identifying relevant baseline information (i.e., the existing environmental, economic and social characteristics of the LPA likely to be affected by the plan). This together with the previous stage will help provide the basis for developing IIA objectives.

Carrying out these processes leads to the identification of key issues that affect the Borough and helps provide an IIA Framework which consists of objectives and guide questions, against which the emerging Local Plan objectives and policies can be assessed in successive stages of assessment. The IIA will assess the likely impacts of the Local Plan in terms of how it will contribute to resolving these key issues and contribute to achievement of the IIA objectives. The IIA process will help guide the Local Plan to the most sustainable, healthy and equal options.

This Scoping Report aims to provide sufficient information to key stakeholders on the proposed approach to the IIA for the Local Plan review. An IIA will be carried out at successive stages of the local plan process, as show in Figure 1, and through this process policies will be developed and refined.

1.5 Consultation

In accordance with the Strategic Environment Assessment Directive the Council has undertaken consultation on this IIA scoping report with key consultation bodies prior to the full public consultation at Local Plan Regulation 18 stage.

The Council consulted with Historic England, Natural England and the Environment Agency in accordance with Regulation 4 of the Environmental Assessment of Plans and Programmes Regulations 2004.

In addition, at this stage the Council also consulted with a range of other relevant stakeholders including the Department of Levelling Up, Housing and Communities, the Mayor of London, Homes England, neighbouring Local Planning Authorities, utilities, water and telecommunications providers, the NHS, Network Rail, Transport for London, the Canal and Rivers Trust, and Heathrow Airport Ltd.

Feedback from this consultation was considered and modifications were made in response to these representations prior to Regulation 18 stage consultation.

A full public consultation will also be carried out at each of these stages, alongside the publication of draft policies, and this will provide the public with the opportunity to comment on the IIA Report.

2 Stage A1: Identifying Other Policies, Plans, Programmes and Sustainability Objectives

2.1 Purpose of Stage A1

The Local Plan could be influenced in various ways by other plans, programmes, policies, legislation or objectives which operate at an international, national, regional or local level. The purpose of Stage A1 of the IIA process is to consider the effect of these on the Local Plan and its contribution to environmental, economic, health and social objectives. Some issues may already have been dealt with in other plans and programmes, and do not need to be addressed further in the Local Plan, while some plans/programmes may place requirements on the local authority that must be addressed through the Local Plan. This stage also identifies the cumulative effects of these plans/programmes on achieving the IIA objectives.

Many of the aims and objectives set out in international and national plans, programmes, policies and legislation, which local planning authorities must contribute to achieving, have already been transposed into national and regional planning policy, namely the National Planning Policy Framework and London Plan.

As the new Local Plan must conform with the London Plan and be implemented alongside it as part of the Development Plan, many, if not all, international and national obligations and objectives will have previously been considered. The NPPF and London Plan may however place additional requirements on Hillingdon Council which need to be addressed in its Local Plan Review.

This process will help identify sustainability or other objectives which should form part of the IIA Framework and identify issues that need to be addressed through the Local Plan.

2.2 Review of relevant plans, programmes, policies and legislation

National

Town and Country Planning Act 1990
Planning and Compulsory Purchase Act 2004 (as amended 2008)
Planning (Listed Buildings and Conservative Areas) Act 1990
The Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended)
Localism Act 2011
National Planning Policy Framework (NPPF)
National Planning Practice Guidance
Planning and Energy Act 2008
Health and Social Care Act 2012 and 2022

Growth and Infrastructure Act 2013
Infrastructure Act 2015
Housing and Planning Act 2016
Strategic Environmental Assessment, Sustainability Appraisal: Historic England Advice Notes 8 (2016)
Climate Change Act 2008 (amended in 2019)
Environment Act 2021
The Energy Efficiency Strategy: The Energy Efficiency Opportunity in the UK (2012)
DEFRA Environmental Improvement Plan 2023
Energy Performance of Buildings (England and Wales) Regulations 2012
UK Sustainable Development Strategy: Securing the Future (2005)
Reuniting health with planning: healthier homes, healthier communities (2012)
Office for Health & Improvement Disparities, OHID London Business Plan 2023/24
Health Impact Assessment in Spatial Planning, PHE 2020
Biodiversity 2020: A Strategy for England's wildlife and ecosystem services (2011)
UK Post-2010 Biodiversity Framework
The Conservation of Habitats and Species Regulations 2017
Flood Risk Regulations 2009
Water Environment (Water Framework Directive) (England and Wales) Regulations 2017
Air Quality Standard Regulations 2010
Clean Air Strategy 2019
Clean Growth Strategy 2017
Planning Policy for Traveller Sites (2015)
Noise Policy Statement for England (DEFRA 2010)
Conservation 21: Natural England's conservation strategy for the 21st century
The Historic Environment in Local Plans: Historic Environment Good Practice Advice in Planning 1 (Historic England 2015)
Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning 2 (Historic England 2015)
The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning 3 (Historic England,
Historic England Advice Note 1 Conservation Area Appraisal, Designation and Management (Historic England, 2019)
Historic England Advice Note 3: Site Allocations in Local Plans (2015)
Historic England Advice Note 4 Tall Buildings (2022)
Easy Access to Historic Buildings (Historic England, 2015)
Energy Efficiency and Historic Buildings: How to Improve Energy Efficiency (Historic England 2018)
Ancient Monuments and Archaeological Areas Act 1979
Council of Europe Landscape Convention (amended 2016)

Convention for the Protection of the Architectural Heritage of Europe (1985)
European Convention on the Protection of Archaeological Heritage (1992)
DfT Circular 01/2022: The Strategic Road Network and The Delivery of Sustainable Development
Inclusive Transport Strategy (2018)
National Design Guide (2019)
National Model Design Code (2021)
Equality Act 2010
Public Sector Equality Duty 2010
Planning for Sport Guidance (Sport England 2019)
Playing Fields Policy and Guidance (Sport England 2021)
Assessing needs and opportunities guide for indoor and outdoor sports facilities (Sport England 2014)
Land Contamination Risk Management LCRM (Environment Agency on www.gov.uk)
The Environment Agency's Approach to Groundwater Protection 2018
Guidance on sustainable remediation – SuRF UK (claire.co.uk)
National Planning Policy for Waste (2014)
Waste (England and Wales) Regulations 2014
Waste (Circular Economy) (Amendment) Regulations 2020
Waste Management Plan for England 2021
Green Infrastructure Framework 2023

Regional

London Plan 2021
London Plan Guidance
Mayor of London's Health Inequalities Strategy 2021
The Mayor of London's Healthy Streets for London
Mayor of London's Transport Strategy 2018
London City Resilience Strategy 2020
London Environment Strategy 2018
London Housing Strategy 2018
The Mayor's Economic Development Strategy for London 2018
The Mayor's Cultural Strategy 2018
The London Food Strategy 2018
The Mayor's Equality, Diversity and Inclusion Strategy 2018
The Mayor's Smarter London Together 2018
The Mayor's Strategy for Social Integration 2018
The Mayor's Strategy for Sport and Physical Activity 2018
Zero carbon London: A 1.5 degrees Celsius compatible plan 2018

Thames River Basin Management Plan 2019
Securing London's Water Future: The Mayor's Water Strategy 2011
West London Strategic Infrastructure Delivery Plan
Hillingdon Strategic Infrastructure Plan (2017)
West London Waste Plan (2015)
Hillingdon Air Quality Action Plan 2019-2024
West London Strategic Flood Risk Assessment (2018)
Surface Water Management Plan (2014)
London Infrastructure Plan 2050
Affinity Water – Water Resources Management Plan 2024
Thames Water – Drainage and Wastewater Management Plan 2025-2050

Local

Hillingdon Local Plan Part 1 (2012)
Hillingdon Local Plan Part 2 (2020)
Hillingdon Council Strategy 2022-2026
Hillingdon Housing Strategy (2021)
Accessible Hillingdon SPD (2017)
RAF Uxbridge SPD (2009)
Hillingdon Third Local Implementation Plan (2019-2041)
Joint Strategic Needs Assessment 2022-2025
Hillingdon Health and Wellbeing Strategy 2022
Hillingdon Partners Sustainable Community Strategy 2011
Hillingdon Strategic Climate Action Plan 2021
Hillingdon Electric Vehicle Infrastructure Strategy 2023
Uxbridge Town Centre Masterplan (2024)
Hillingdon Pharmaceutical Needs Assessment (2022-2025)
Hillingdon Digital Connectivity Strategy (3 Year Plan) 2021-2023
Hillingdon Air Quality Action Plan 2019-2024
Hillingdon Local Flood Risk Management Strategy (2024)
Hillingdon Third Local Implementation Plan 2019-2041

3 Stages A2 and A3: Baseline information and sustainability issues and problems

3.1 Overview

An important part of the IIA scoping process is to set out the current conditions in Hillingdon in relation to the SEA topics listed in Annex 1 of the SEA Directive, as well as other relevant topics related to the SA, HIA, EqIA and CSIA. These broad topic areas are listed in Table 3 below. The aim is to outline characteristics of topic areas likely to be affected by the new Local Plan. This information is a starting baseline to help identify the key sustainability issues and problems, establishing the current economic, social and environmental context. Baseline information provides the basis for predicting and monitoring environmental effects of policies and the reasonable alternative ways of dealing with them. Future monitoring of the plans policies, once adopted, will also assess how things have changed from this baseline. Many of these topic areas are interrelated.

This section of the report provides an overview of the baseline information that is considered most relevant to the Local Plan Review – i.e. baseline conditions most likely to be affected by the Local Plan Review. The review of relevant plans, policies and programmes will be used together with this baseline information to identify the key sustainability issues affecting the Borough, which will be followed by the development of IIA objectives against which the Local Plan Review will be assessed.

Table 3. Topics to be covered in an SEA

Spatial context
Demographics
Crime and community safety
Economy
Housing and social infrastructure
Land use and landscape
Health and wellbeing
Historic environment
Air quality
Climate change mitigation
Climate change adaptation
Flood and water management
Waste
Soil and geology
Water quality and water security
Biodiversity
Green infrastructure
Transport

Energy infrastructure
Digital connectivity
Education infrastructure
Emergency services
Noise and vibration
The interrelationship between the above factors

The SEA Directive requires information on the evolution of baseline conditions to help identify whether conditions are already improving or worsening, and the rate of such change. As well as the baseline conditions, set out by issue, this section also therefore includes information on projections and trends - 'the likely future conditions'- where this information is available. It is important to note however that there are currently some gaps in the baseline evidence, either because the information is not collected and therefore not available or because the information is out of date. The Council intends to update this scoping report continuously as more information becomes available.

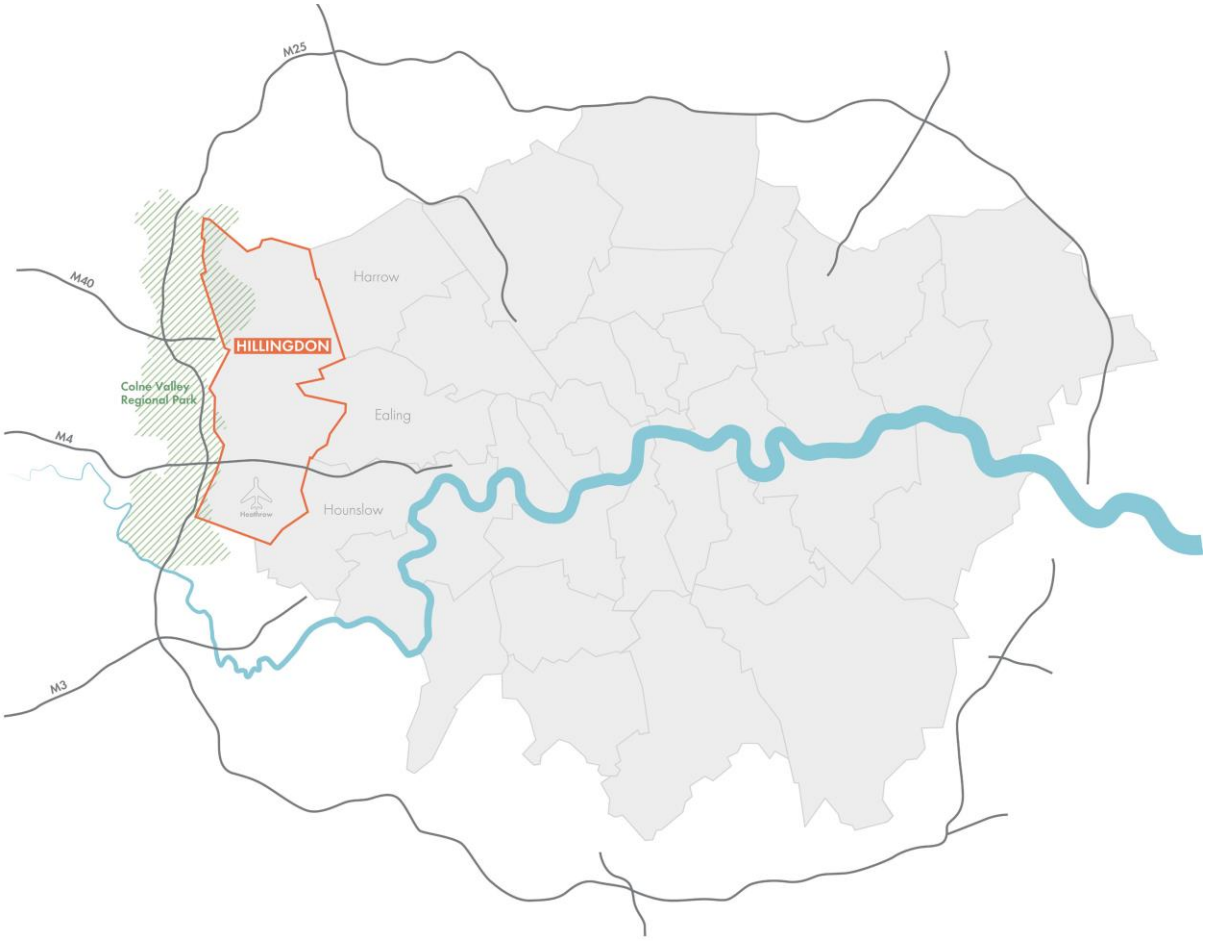
It is also important to note that the Covid-19 pandemic will have significantly affected a number of baseline conditions and data to highlight these changes to their fullest extent is not yet available as some of these changes are still playing out and will continue to evolve. This includes, among other things, changes to economic conditions and the floorspace needed to meet economic needs, changes to the retail habits and local high streets and where people choose to live. The scoping report will be updated with new evidence as it becomes available.

3.2 Spatial context

Hillingdon is at the western edge of Greater London and has a pattern of development that transitions from the rural to urban (Figure 2 below).

With an area of 115.3km^2, Hillingdon is the second largest borough by area in London. With a population density of 26 people per hectare it is the third least populated borough in London.

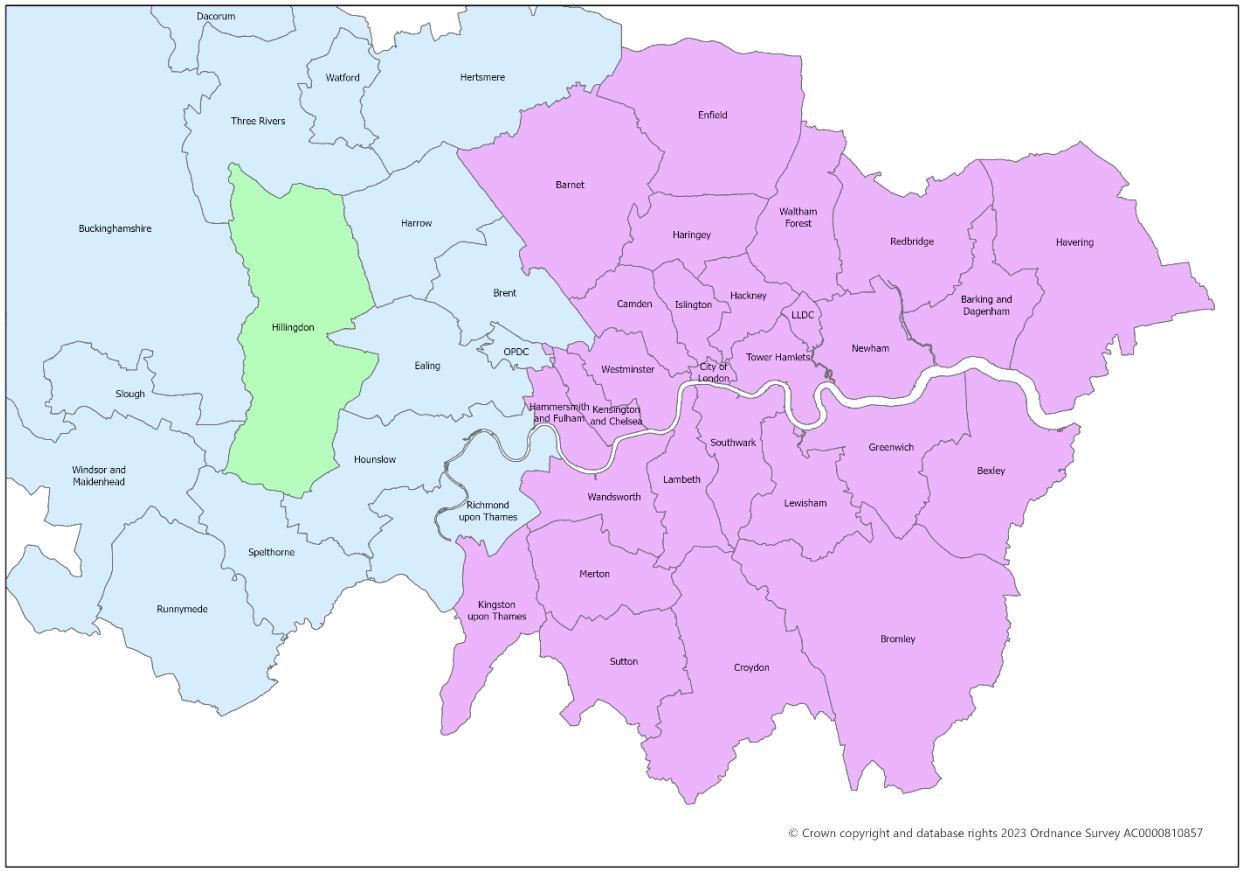
Figure 2. Hillingdon borough in the context within London



Source: Hillingdon Townscape and Character Study 2023

The Borough borders the London Boroughs of Ealing and Harrow to the east, Hounslow to the south-east, Spelthorne to the south. Buckinghamshire Council is located along the western boundary and Three Rivers District Council is located along the northern boundary and Slough District Council along the southwest (see Figure 3 below).

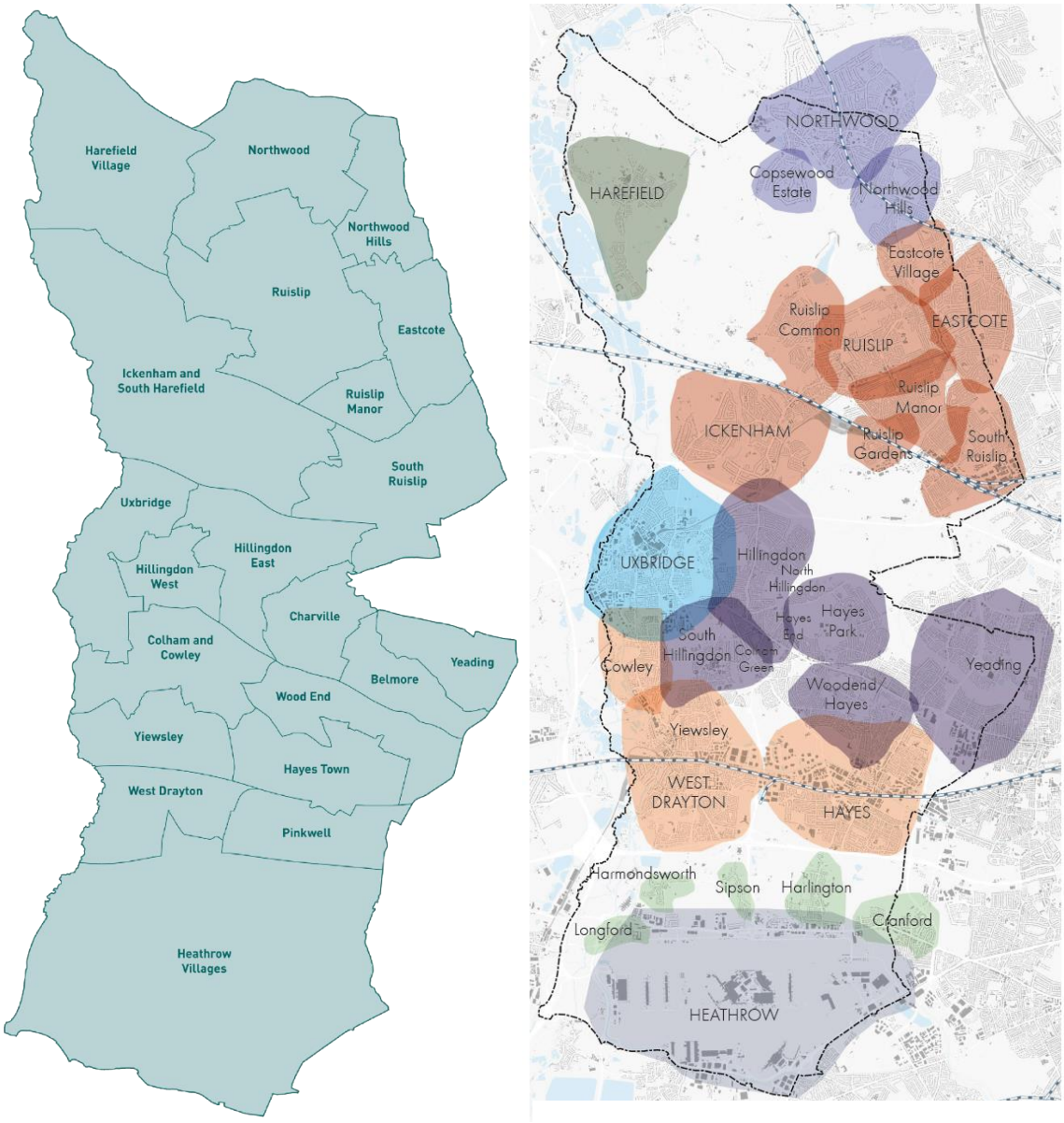
Figure 3. Hillingdon Borough within the context of its neighbouring boroughs



Within the context of Greater London Hillingdon lies on western edge as shown in Figure 3, above. The Borough contains a mixture of urban and open space land uses and is approximately 11 miles from north to south and 4 miles east to west. It is made up of 22 wards as shown in Figure 4, on the following page.

Hillingdon is comprised of 22 Wards (see Figure 4 below, left). Hillingdon has evolved from a series of places with their own history and identify, which have coalesced over time (Figure 4 below, right).

Figure 4. Hillingdon Wards (left) Hillingdon places (right)



Source: Hillingdon Townscape and Character Study 2023

The borough has a distinctive character with its combination of suburban streets and shopping centres, industrial land, major office developments and large areas of open land, historic woodland and inland waterways and large areas of Green Belt. The majority of the urban extent is located within the north east and central portions of the borough. The land use map (Figure 5) shows the different general land uses in Hillingdon.

Hillingdon is a largely suburban borough (see Figure 5, on the following page). In the north the ‘Metro-land’ suburban development is predominant. The south has a more varied character with corridors of industrial land. Heathrow Airport and RAF Northolt are very significant land uses in Hillingdon. Heathrow Airport is among the busiest and largest airports in the world and takes up one quarter of the borough's southern area.

Figure 5. Land use in Hillingdon

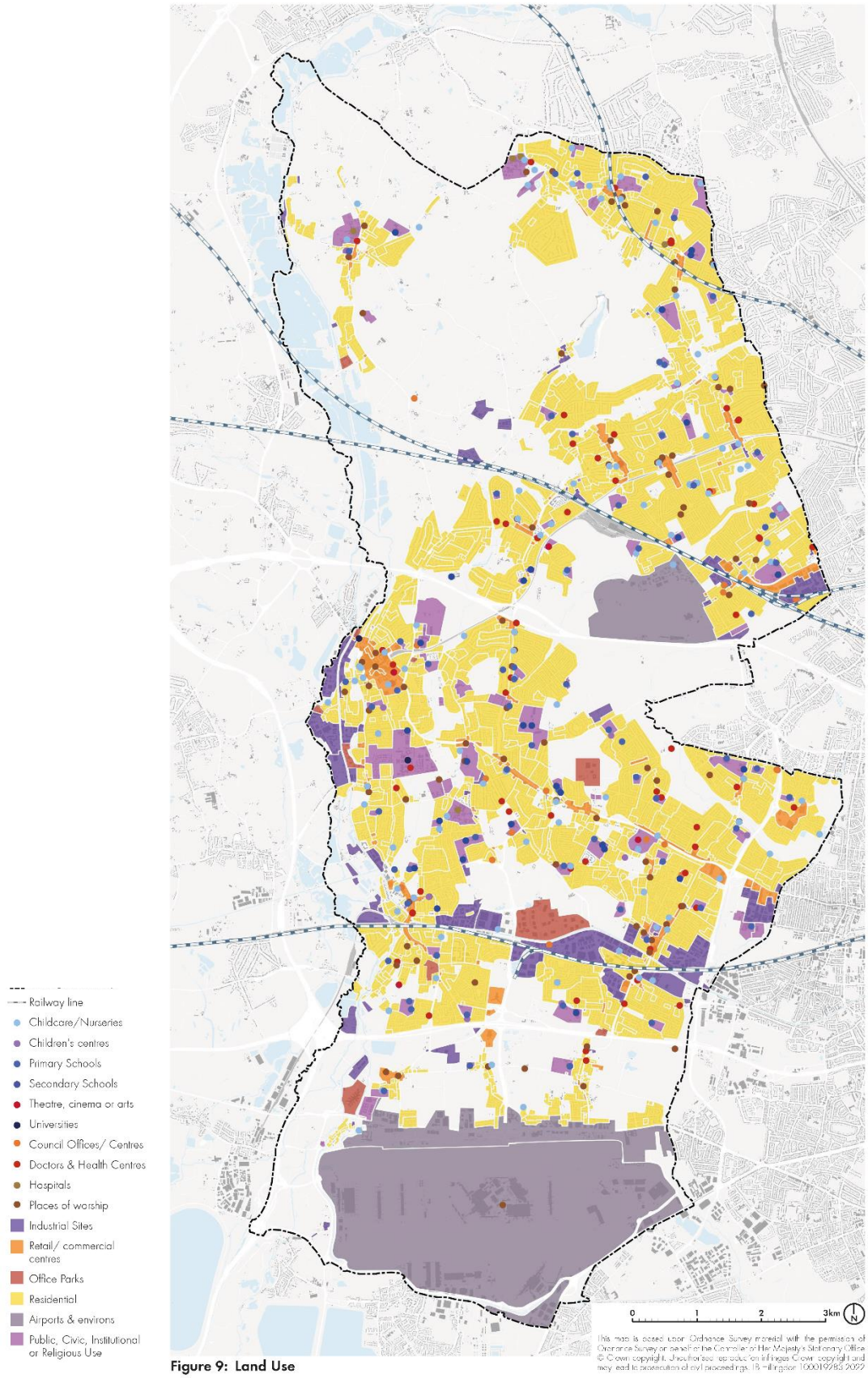


Figure 9: Land Use

Source: Hillingdon Townscape and Character Study 2023

3.3 Demographics

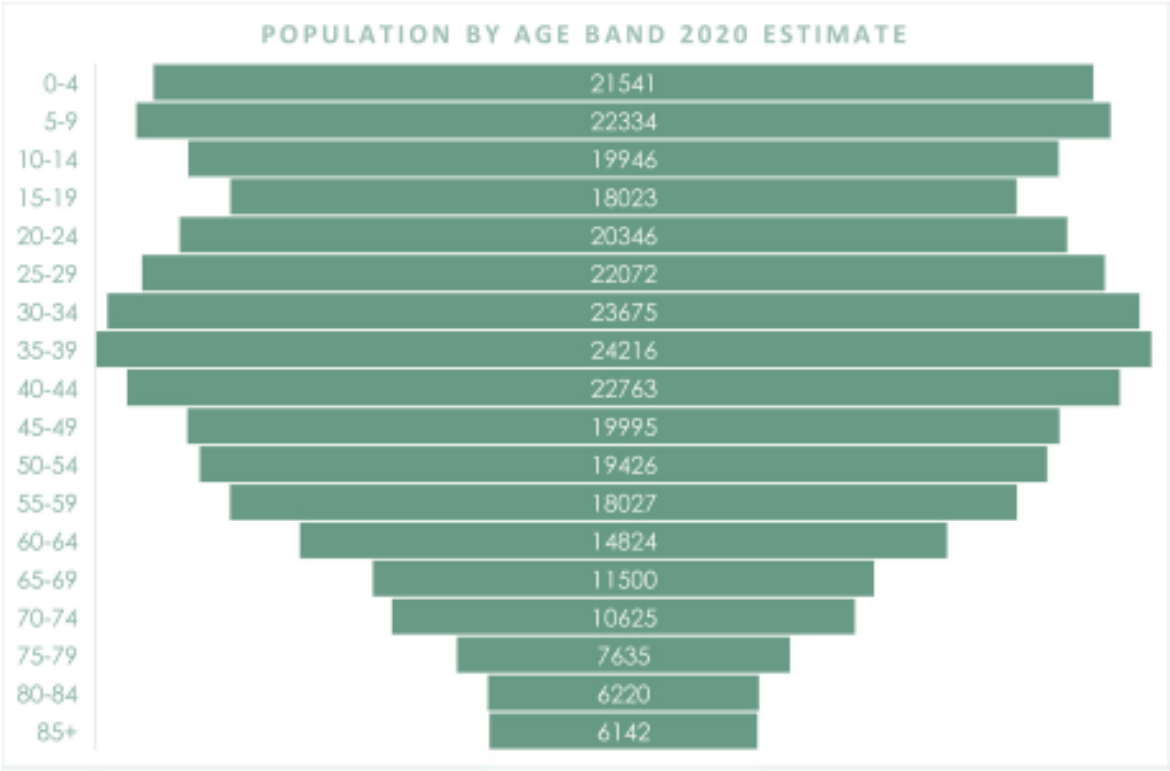
Baseline

Population estimates and population projections are the starting point to inform decisions regarding the provision of services such as education, housing, transport and health. Any overarching appraisal of need and subsequent commissioning of services will consider the change in the size of the population living locally[2].

According to the latest census data from 2021 the borough is home to 305,900 residents, which is an increase of approximately 11.7% since the 2011 census. By comparison, London's population has increased by 7.7% in the same period. This growth rate suggests the borough has experienced additional pressures to those being experienced London-wide.

When assessing the more detailed characteristics of Hillingdon's population, the 2018-based subnational population projections by the ONS are the most recently available statistics. Figure 6 below shows that in Hillingdon the largest proportion of the population is in the 35-39 age bracket (7.8%). There is also a large elderly population with 9.9% of the population aged 70 or above.

Figure 6. 2020 Hillingdon population estimate by age-band



Source: ONS Sub-national population projections 2018-based

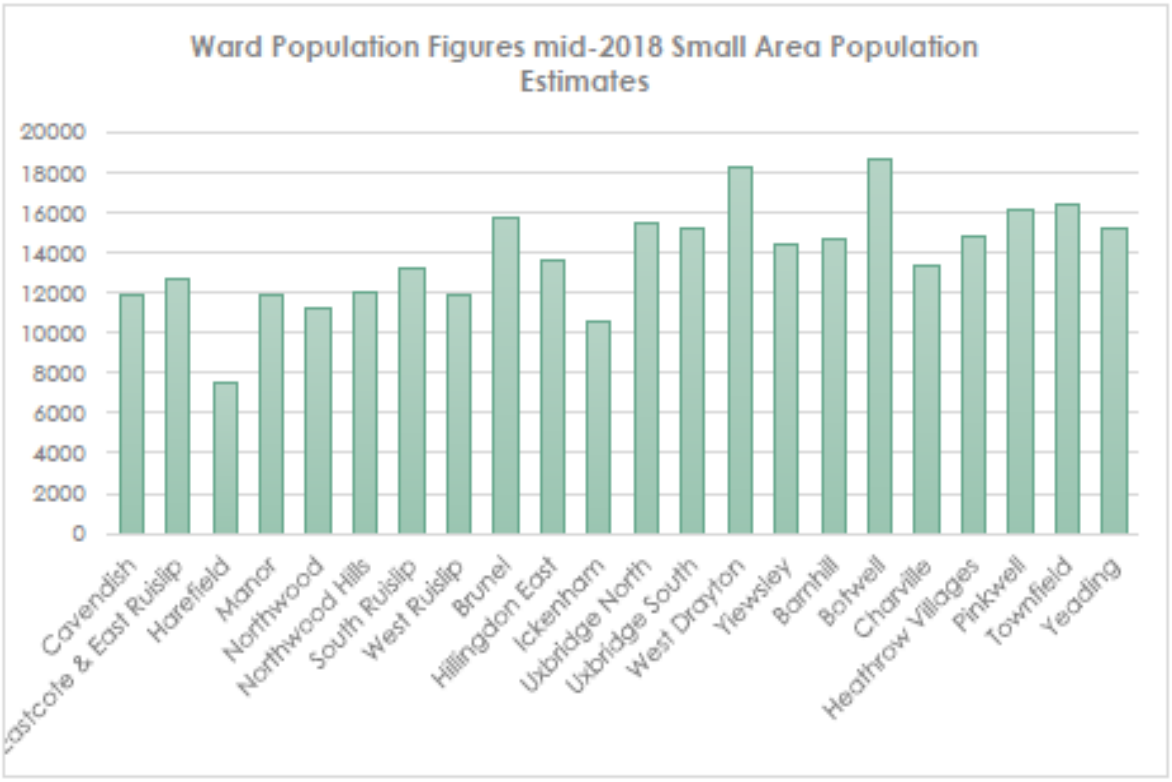
[2] For the purposes of assessing the boroughs population in a more detailed way, the Council will use the population estimates from the 2018-based subnational population projections published by the ONS. These projections are available by single year of age, by sex for Local Authorities from mid-2018 to mid-2043.

For the purposes of estimating population projections, the ONS use a slightly different dataset. The 2018-based subnational population projections estimate Hillingdon's population to be 311,126 in 2021. By 2026, this is projected to be 316,904 persons (approx. 2% increase), and by 2043, it is projected to be 327,532 persons (approx. 5% increase).

Population Distribution

The latest ward population figures are the mid-2018 Small Area Population Estimates from the ONS, published October 2019. Figure 7 below shows the different ward level population estimates for Hillingdon.

Figure 7. Hillingdon ward-level population estimates

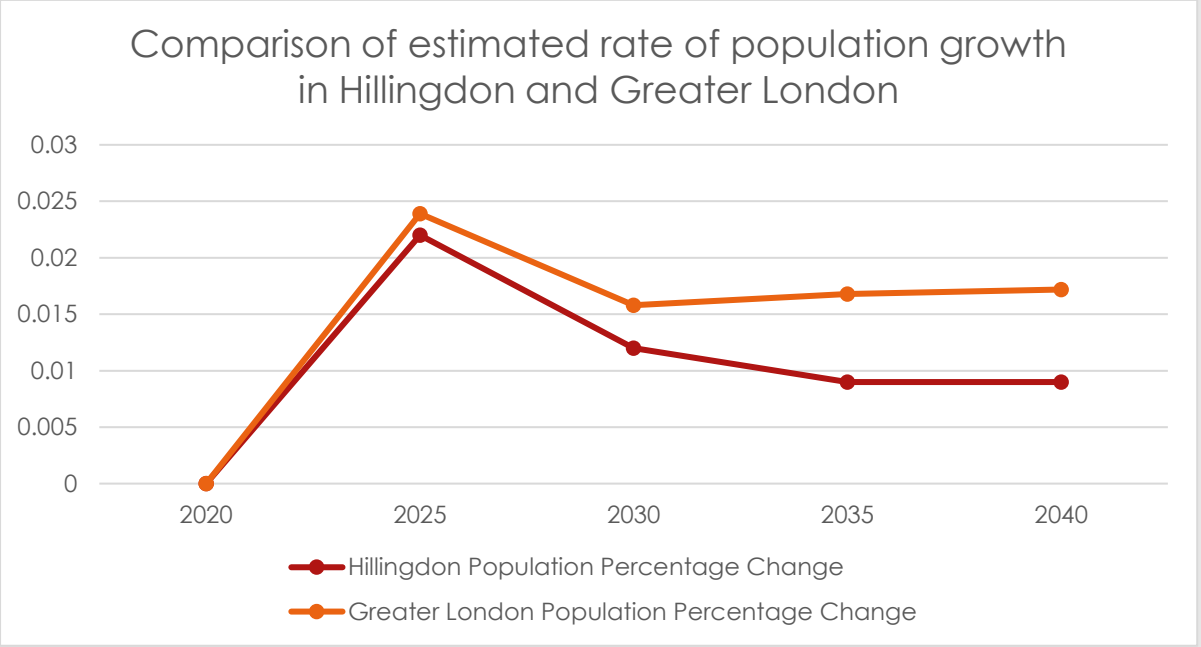


Source: ONS mid-2018 small area population estimates

Population projections

Data from the 2018-based Sub-National Population Projections (ONS, published March 2020) shows the projected population for Hillingdon from 2020 to 2035. The population is expected to grow by 2.2% up to 2025 and continue to grow at a slower rate up to 2040, as Figure 8 and Table 4 show. Population growth is expected to slow down in Hillingdon and London after 2025, however, the rate of population growth is expected to be slower in Hillingdon than in Greater London as a whole, as shown in Figure 8 below and table 5.

Figure 8. Hillingdon and London rate of population growth up to 2040



Source: ONS 2018-based sub-national population projections

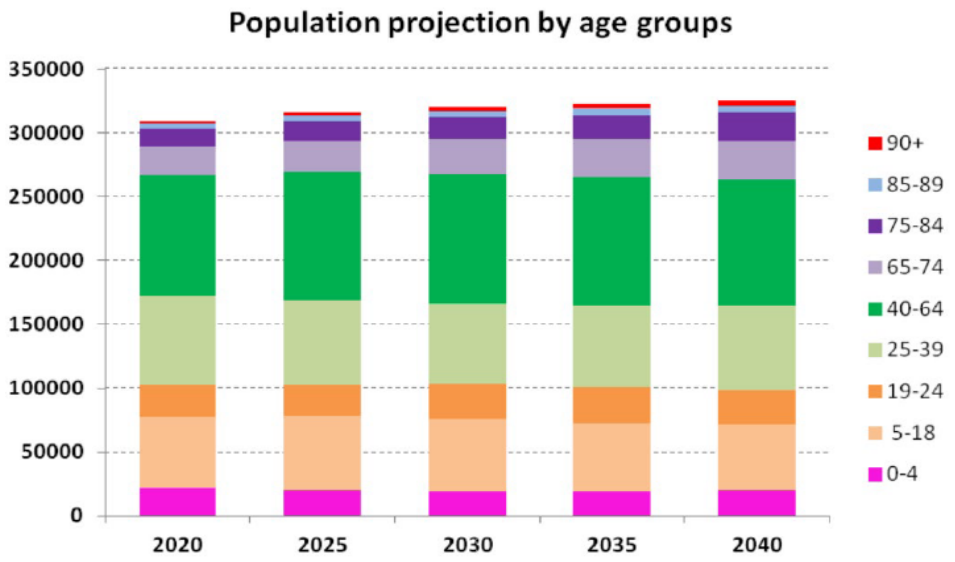
Table 4. Hillingdon and London population projections up to 2040

	2020	2025	2030	2035	2040
Hillingdon Population	309,310	316,030	319,884	322,809	325,625
Population Growth		6,720	3,854	2,925	2,816
Percentage change		2.20%	1.20%	0.90%	0.90%
Greater London Population	9,039,390	9,255,002	9,401,401	9,559,243	9,723,859
Population Growth		215,612	146,399	157,842	164,616
Percentage change		2.39%	1.58%	1.68%	1.72%

Source: ONS 2018-based sub-national population projections

Figure 9 below shows Hillingdon's population projections by age-band. It shows an ageing population with population growth notably in the 65+ age-band but minimal growth or even smaller populations in the younger age-bands. Significant changes in population age means that population need, and demand can change resulting in the need to review the level of commissioning of some service, especially for more vulnerable residents and population groups.

Figure 9. Hillingdon population projections by age-band up to 2040



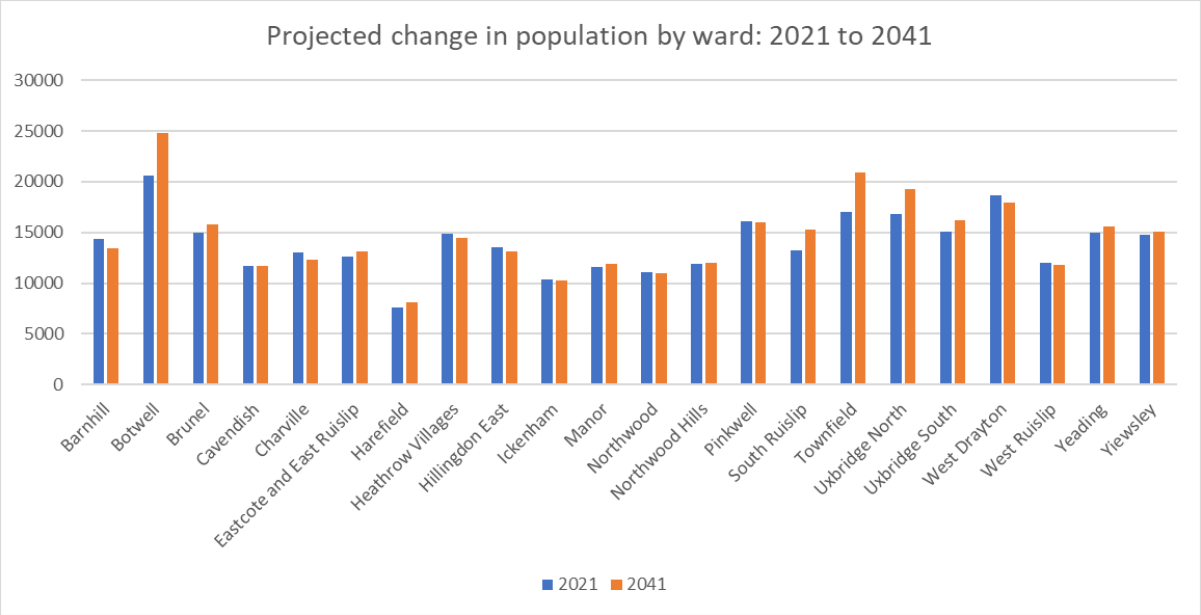
Source: ONS 2018-based sub-national population projections[3]

We can also see how population numbers are expected to change by ward between 2021 and 2041 in Hillingdon, as Figure 10 below shows. The area that was previously Botwell Ward (now covered by parts of Hayes Town and Wood End Ward) is expected to experience greater population growth than any other ward up to 2041 reflecting the significant new development sites.

Most wards' population projections tend to mirror the borough-wide population projections which show an ageing population. Based on the previous ward names, the wards of Eastcote & East Ruislip, Heathrow Villages, Townfield, Uxbridge South and Yiewsley do not follow this trend and are expected to see population growth in the younger population too. Figure 10 belowore detailed analysis of population projections by age and ward can be found at GLA Population Projections (london.gov.uk).

[3] 2018-based projections are the most recently available at a ward level from the ONS. These projections were calculated before Hillingdon's Ward boundaries were changed. As such, population projections are based on the previous ward boundaries.

Figure 10. Hillingdon population projections by ward



Source: GLA Demography[4]

Components of demographic change

Changes in population numbers can be split into two components:

- Natural change
- Migration

There are an estimated 309,300 people in the Hillingdon population in the year 2020. The population is expected to rise to 315,097 in 2024. These two components of change in the population may be further split:

- Natural change
    - Births
    - Deaths
- Migration
    - Cross border migration
    - International migration
    - Internal migration

Natural change means the difference between the number of births minus the number of deaths. Cross-border migration refers to moves between England and Scotland, Wales and Northern Ireland. Internal migration refers to moves within England. International migration includes moves between England and the Republic of Ireland, moves between England and

[4] GLA Population Projections (london.gov.uk)

the rest of the World, and migrant switchers, visitor-switchers and asylum seekers. Details of the expected changes can be seen in Table 5 below.

Table 5. Components of population change

COMPONENT	2020	2021	2022	2023	2024
Population	309,310	311,126	312,669	313,989	315,097
total natural change		*2,050*	*1,941*	*1,865*	*1,810*
births		4,047	3,990	3,946	3,903
deaths		1,997	2,049	2,081	2,093
All Migration Net		*-231*	*-394*	*-541*	*-699*
Internal Migration In		19,430	19,381	19,342	19,310
Internal Migration Out		22,508	22,507	22,502	22,508
International Migration In		5,074	4,930	4,787	4,638
International Migration Out		2,147	2,118	2,086	2,057
Cross-border Migration In		397	395	393	393
Cross-border Migration Out		478	476	475	475

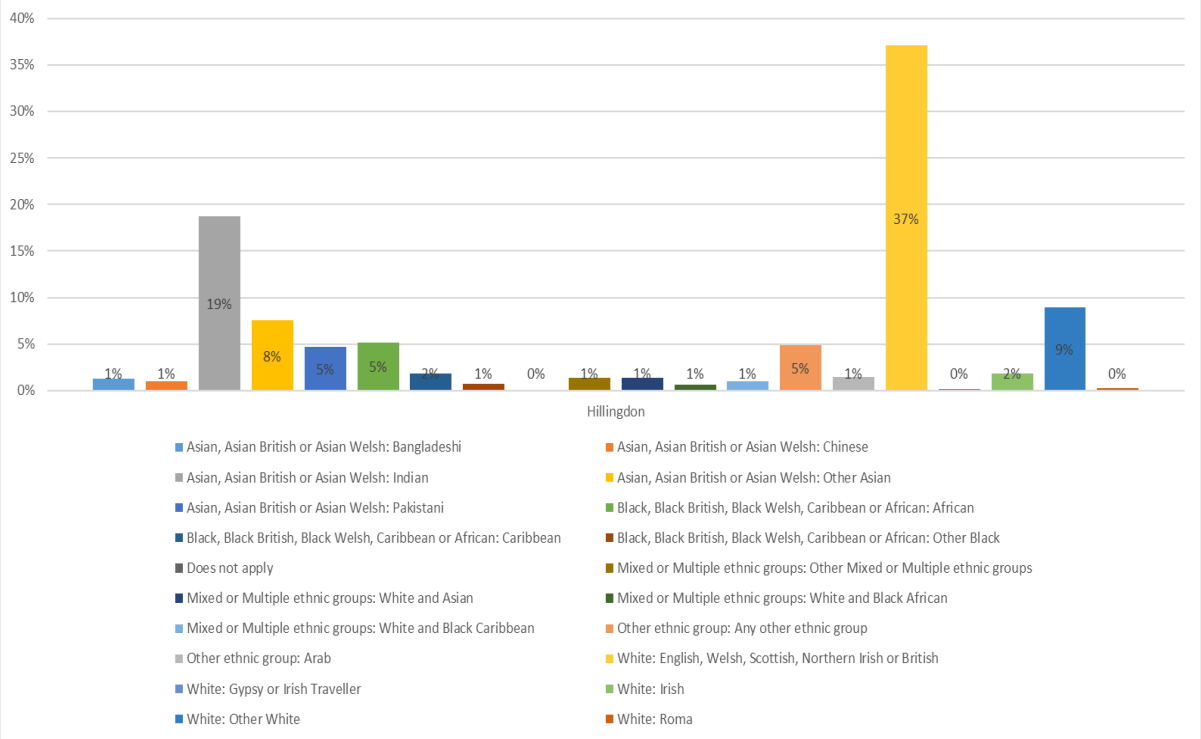
Source: ONS 2018-based sub-national population projections

Social Integration and Inclusion

Ethnic Profile

According to the 2021 Census, Hillingdon is 48.2% white British and 51.8% black, Asian, and other ethnic groups. This is a change from the 2011 Census which showed Hillingdon as 60.6% white British and 39.4% black, Asian and other ethnic groups. When compared to London as a whole, Hillingdon has a larger proportion of people in the black, Asian and other ethnic groups, a higher proportion of Asian people, and lower proportion of Black people (see Figure 11, below).

Figure 11. Ethnic make up of Hillingdon in 2021

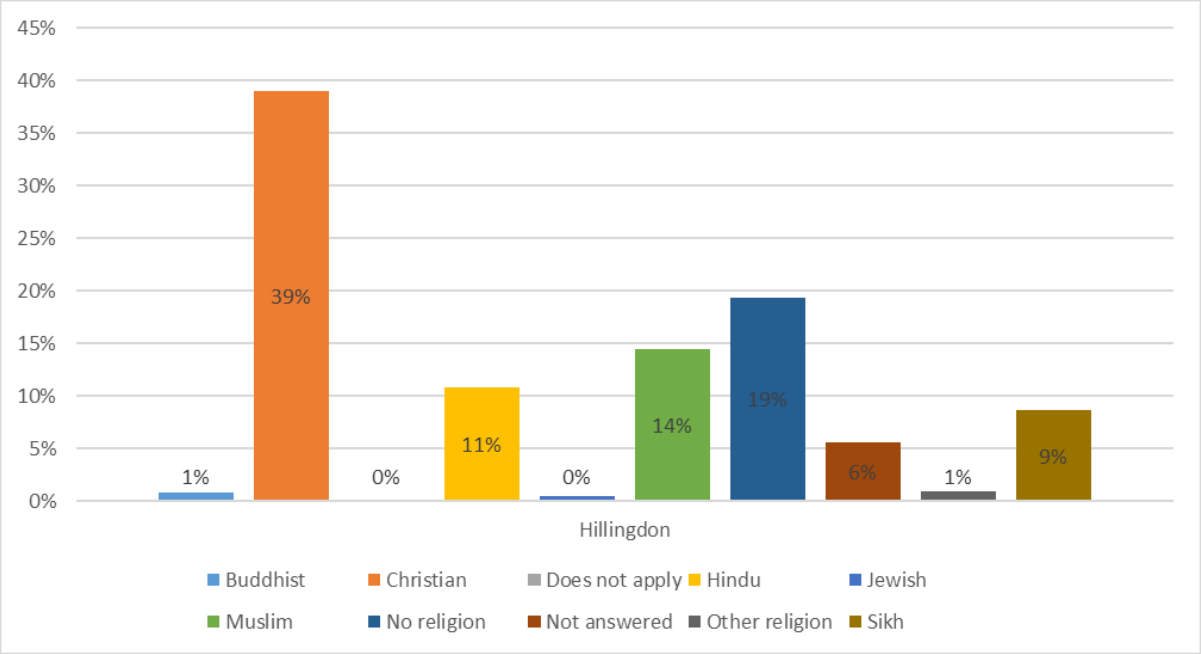


Source: Census 2021

Religion

Christianity is the predominant religion in the borough with 39% from this faith, down from 49.2% in 2011. 11% are Hindu, up from 8.0% in 2011, 14% are Muslim, up from 10.6% in 2011 and 19.0% have no religion, up from 17% in 2011. 9% are Sikhs, up from 6.7% in 2011 and 6% chose not to state a religion, the same as in 2011 (the question was voluntary). Figure 12 below shows the complete breakdown for the borough at the time of the Census in 2021. It is evident that Hillingdon is a very diverse borough.

Figure 12. Religious make up of Hillingdon in 2021



Source: Census 2021

Deprivation

As a whole Hillingdon is a relatively affluent borough. However, there are significant differences spatially, with more affluent areas to the north and more deprived to the south.

The Index of Multiple Deprivation (IMD) is the official measure of relative deprivation in England and is part of a suite of outputs that form the Indices of Deprivation (IoD). It follows an established methodological framework in broadly defining deprivation to encompass a wide range of an individual's living conditions. People may be considered to be living in poverty if they lack the financial resources to meet their needs, whereas people can be regarded as deprived if they lack any kind of resources, not just income.

The IoD2019 is comprised of seven distinct domains of deprivation which, when combined and appropriately weighted, form the IMD2019. They are:

- Income (22.5%)
- Employment (22.5%)
- Health Deprivation and Disability (13.5%)
- Education, Skills Training (13.5%)
- Crime (9.3%)
- Barriers to Housing and Services (9.3%)
- Living Environment (9.3%)

This is an overall measure of multiple deprivation experienced by people living in an area and is calculated for every Lower-layer Super Output Area (LSOA), or neighbourhood, in England. All neighbourhoods in England are then ranked according to their level of deprivation relative to that of other areas. High ranking LSOAs or neighbourhoods can be referred to as the 'most deprived' or as being 'highly deprived' to aid interpretation. However, there is no definitive threshold above which an area is described as 'deprived'. The Indices of Deprivation measure deprivation on a relative rather than an absolute scale, so a

neighbourhood ranked 100th is more deprived than a neighbourhood ranked 200th, but this does not mean it is twice as deprived.

As of 2019, Hillingdon was made up of 162 Lower Super Output Areas (LSOAs) across our 22 wards. Each local authority will have an overall score and each LSOA will have a score; these scores are then ranked as deciles, with a rank of 1 being the most deprived and 10 being the least deprived. Although it is not possible to use the indices to measure changes in the absolute level of deprivation in places over time, it is possible to explore changes in relative deprivation, or changes in the pattern of deprivation, between iterations - as if comparing two snapshots in time.

The indices are based on the same methodology as the 2015 indices, providing a consistent suite of outputs which are in line with previous iterations. Overall, 65% of neighbourhoods remained in the same decile of deprivation between iterations. This indicates that, in relative terms at least, the most deprived areas and least deprived areas have tended to remain the same between updates.

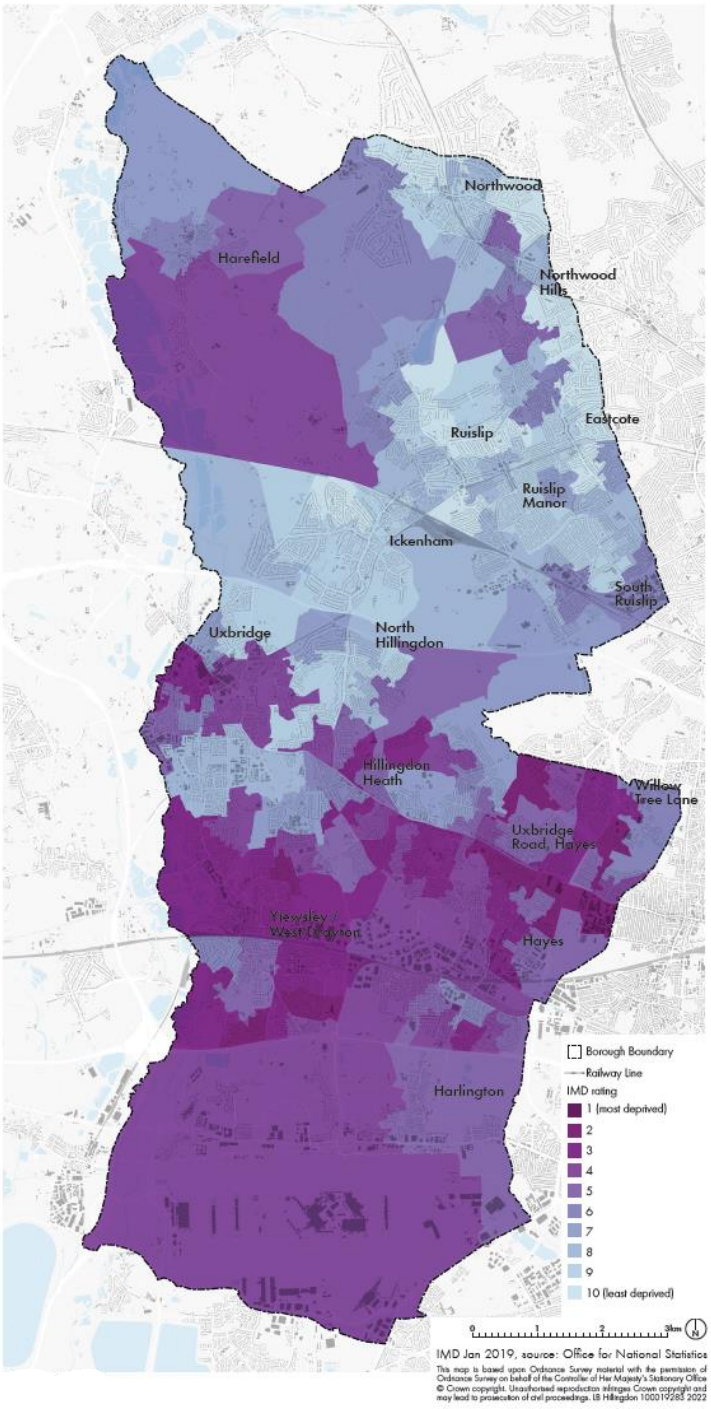
At the neighbourhood-level, the indices provide a place-based insight into deprivation. However, this description does not apply to every person living in these areas. Many non-deprived people live in deprived areas, and many deprived people live in non-deprived areas. It is important to note that the indices are designed to identify and measure specific aspects of deprivation, rather than measures of affluence.

Hillingdon headlines

- The south of the borough tends to be more deprived, relatively speaking, when compared to the north of the borough.
- Hillingdon still has no LSOAs in the least deprived decile nationally.
- The Neighbourhoods around Hayes and West Drayton are most deprived with several areas (4.3% of the borough) falling into the 20% most deprived areas in the country.
- Between the 2015 and 2019 figures the borough has seen improvement (i.e. less deprivation), however this has mostly been in the least deprived neighbourhoods.

Figure 13, on the following page explores patterns of deprivation within Hillingdon.

Figure 13. Hillingdon deprivation in relation to the whole of England, IMD2019



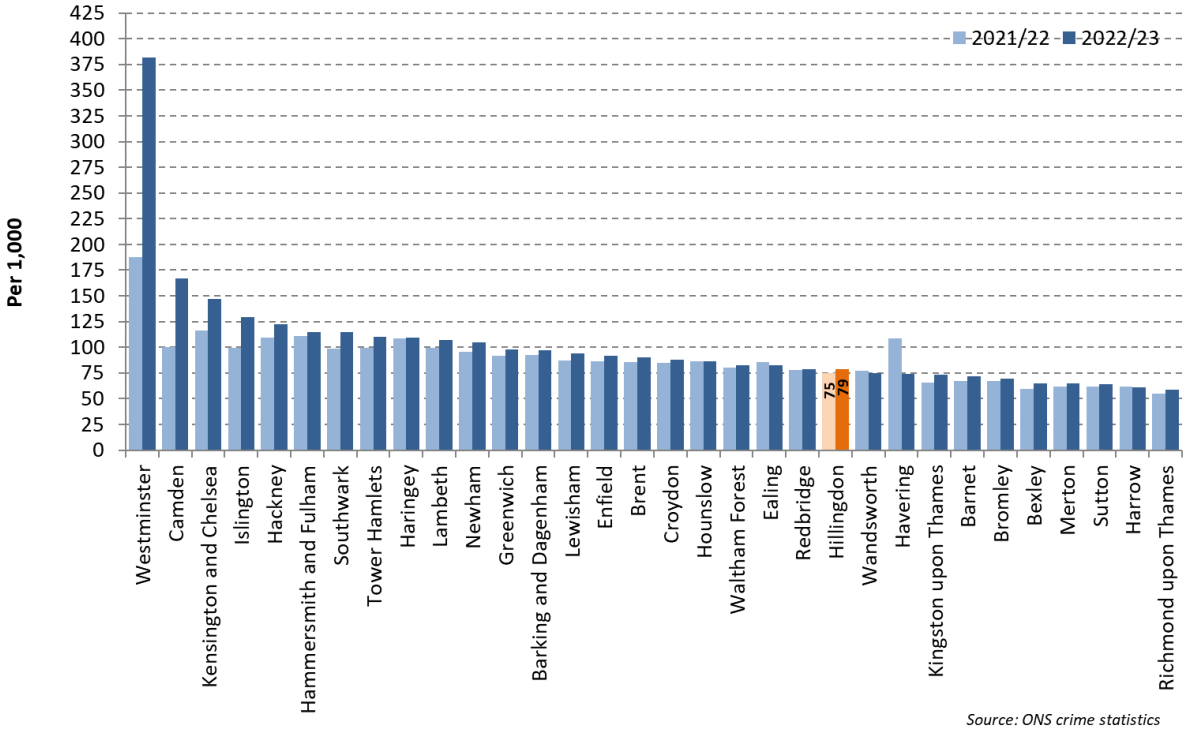
Source: Hillingdon Townscape and Character Study 2023

Crime

Crime rates have risen across London. Figure 14 below shows this general upward trend in crime rates, where the number of recorded crimes per 1,000 of London's inhabitants has risen when compared over a two year period. In 2021/22 the Hillingdon figure stood at 75, but the most recent figure - for 2022/23 - has increased to 78.57. Compared to all boroughs in 2022/23, Hillingdon is ranked 22nd in the number of crime rates for London boroughs

(Source: Hillingdon Community Safety Strategic Assessment 2022/23, data from the ONS and collected by the Metropolitan Police).

Figure 14. Crime rates in the Metropolitan Police Area (all offences recorded)



The Hillingdon Community Safety Strategic Assessment 2022/23 found the following trends for crime and anti-social behaviour in the borough:

- Over a 10 year time period, crime rates for Hillingdon have fallen from 86.69 in 2012/13.
- In relation to many crime types, rates are lower in Hillingdon than the London average.
- In the period 2022 to 2023 the most significant increase in recorded crimes were theft from shops (30%) knife crime (23%) and knife crime with injury (22%).
- In the period 2022 to 2023 the most significant reductions in recorded crime related to drug offences (31%) and ASB (30%).
- There has been an 11% increase in reported domestic abuse incidents since 2018.

Volume, performance and trend analysis identifies the most significant crime types to be:

1) Theft from shops.
2) Disorder on public transport.
3) Violence against the person.
4) Arson fires.
5) Theft from vehicles.
6) (Equal scoring) Domestic violence, criminal damage, knife crime, knife crime with injury

Ward Panel Priorities: Violence is the highest priority in all wards except one. ASB is the second priority in 8 wards, with drugs appearing as a priority in 6 wards and burglary in 4. ASB is one of the priorities in 17 wards.

Violence against women and girls

The Mayor of London has recognised that too many women and girls feel unsafe going about their daily lives in London. In 2022 the Mayor launched the Violence Against Women and Girls Strategy. The strategy includes commitment 1.4 which addresses equality and freedom for women and girls in public spaces. Crime prevention through urban design is an important tool in addressing this problem.

Sustainability issues

- A key issue for the borough is a significantly increasing population with limited land resource. While Hillingdon's population is expected to grow at a lower rate than London as a whole, the principal issue remains that there is a need to accommodate a larger population on limited land over the longer-term. This will lead to increasing population densities.
- Hillingdon has a relatively young population however it also has an ageing population with population projections showing population growth in the 65+ age-band but minimal growth or even smaller populations in the younger age-bands. The 65+ population in Hillingdon and London as a whole is expected to grow by 52.8% and 62.3% respectively between 2018 and 2040. This compares to a reduction in the below-65 population in Hillingdon of 0.24% and a minimal growth of 1.97% in this age-band in London over the same period.
- An ageing population will also lead to a requirement for different services/facilities to meet their needs.
- Hillingdon, like many London boroughs, has a diverse population. Therefore, a range of services and uses need to be provided to serve the population and meet different needs.
- As the population increases, ages and diversifies, social isolation and discrimination may become an issue.
- The south and centre of the borough is significantly more deprived than the north of the borough based on the Indices of Multiple Deprivation. This trend has continued for some time. In terms of the proportion of the population living in the most deprived areas in England, Hillingdon ranks 195 (1 being the most deprived). This is comparable to Hounslow ranked 166, Harrow ranked 231, Richmond ranked 273, Brent ranked 101 and Liverpool ranked 1.
- Hillingdon crime rates are below the London average, however some kinds of crime are increasing, with knife crime and theft from shops both increasing. Addressing fear of crime from women and girls in public spaces is a priority in London.
- The above issues combined with longer lasting effects of the pandemic such as reduced social interaction in the workplace and elsewhere can also lead to social isolation.

Likely evolution without the Local Plan

- An increase in the population and its composition will lead to a growing pressure and competition for land for different types of development. Without up to date local plan

policies to guide development and to plan supporting infrastructure provision alongside housing, development would not occur in the most sustainable way.

- The effects of the London Plan and NPPF policies will take time to come into effect.
- Local policies which address Hillingdon-specific issues will be needed.
- Different sections of the population will be affected differently by demographic changes, crime trends and the pandemic. Issues may get worse for some while other may be unaffected or benefit.
- Social isolation of some groups may increase as fear of crime might make some people less likely to access different parts of the borough depending on the time of day.
- Local plan policies can help through the provision and support for community facilities and social infrastructure, however this issue will need to be addressed by several different responsible bodies.

3.4 Economy

Baseline

Hillingdon has a strong local economy with good potential for further growth. The presence of Heathrow Airport provides considerable benefits for the local economy. Stockley Park and Uxbridge are established locations for major corporate headquarters. The geography and environment of the local area are important in shaping Hillingdon's economy through their impact on tourism and business travel, business sectors, workforce and availability of development land.

Hillingdon has four Strategic Industrial Locations (SILs), which are protected by London Plan policies as being the main reservoirs of industrial land in the Borough. As well as this, the Hillingdon Local Plan Part 1 designates two classes of locally significant employment land:

- Locally Significant Industrial Sites (LSIS) which are intended to be suitable for industrial and warehouse activities (Use Classes E(g)(iii), B2, and B8).
- Locally Significant Employment Locations (LSEL) which are intended to be suitable for light industrial, office and research and development uses (Use Classes E(g)).

Additionally, the Council also has designated locations which support new office (Class E(g)(i)) development. Stockley Park and Uxbridge Town Centre have been identified as preferred office growth locations. There is also a relatively high proportion of hotels in the Borough, predominantly linked to Heathrow Airport, but also located within town centres.

Hillingdon has continued to have relatively high proportions of economically active people. Unemployment has not significantly affected Hillingdon's economy in recent years however the economic effects of the pandemic may affect this.

Working age breakdown

In Hillingdon, the working age population of those in the age bracket 16-24 make up 16.6% of the population, whilst the 25-59 age group make up 67.7%, the remaining 15.7% are from the 60-74 age group.

According to the ONS, between January 2019 and December 2019, 76% of Hillingdon’s population were economically active (aged between 16 and 64). 72.4% of those were in employment while 4% were unemployed. 24% of Hillingdon’s residents were economically inactive.

This compares to London’s economically active proportion of the population of 78.1%, an employment rate of 74.5%, an unemployment rate of 4.6% and an economically inactive population of 21.9%.

Employment by occupation

According to the ONS Annual Population Survey for January 2019 to December 2019, Hillingdon has a high percentage of people in high skilled jobs (as shown in Table 6). It scores higher than the UK average in the most highly skilled jobs category, however it lags

behind the London average in terms of the percentage of people in the most highly skilled jobs (SOC 2010 Major Group 1-3).

Table 6. Percentage of employed in different types of jobs by skill level, January 2019 to December 2019

Occupation type[5]	**Hillingdon %**	**London %**	**Great Britain %**
SOC 2010 Major Group 1-3	**50.9**	**58.6**	**47.5**
1 Managers, Directors and Senior Officials	12.1	13.5	11.4
2 Professional Occupations	22.5	26.5	21.4
3 Associate Professional and Technical	16	18.3	14.6
Soc 2010 Major Group 4-5	**16.7**	**15.8**	**19.7**
4 Administrative & Secretarial	9.9	8.7	9.6
5 Skilled Trades Occupations	6.6	7	10.1
Soc 2010 Major Group 6-7	**19.4**	**13**	**16.3**
6 Caring, Leisure and Other Service Occupations	12.1	7.1	9.1
7 Sales and Customer Service Occupations	7.2	5.8	7.2
Soc 2010 Major Group 8-9	**13**	**12.6**	**16.5**
8 Process Plant & Machine Operatives	7	4.5	6.2
9 Elementary Occupations	5.9	8	10.3

Source: ONS Annual Population Survey

[5] SOC 2020 Volume 1: structure and descriptions of unit groups - Office for National Statistics

Qualifications

As of December 2019, Hillingdon has a high proportion of people education to degree level or above, significantly higher than the UK average and marginally below the London average (see Table 7) (Source: ONS Annual Population Survey).

Table 7. Percentage of population by qualification level, December 2019

Qualification Level[6]	Hillingdon %	London %	Great Britain %
NVQ4 and above	51.9	54.2	40.3
NVQ3 and above	66.2	67	58.5
NVQ2 and above	76.2	78.5	75.6
NVQ1 and above	83.4	85	85.6
Other qualifications	9.7	8.3	6.7
No qualifications	6.9	6.7	7.7

Source: ONS Annual Population Survey

Claimant Count

Under Universal Credit a broader span of claimants are required to look for work than under Jobseeker's Allowance. As Universal Credit Full Service is rolled out in particular areas, the number of people recorded as being on the Claimant Count is therefore likely to rise.

The Claimant Count is the number of people claiming benefit principally for the reason of being unemployed. This is measured by combining the number of people claiming Jobseeker's Allowance (JSA) and National Insurance credits with the number of people receiving Universal Credit principally for the reason of being unemployed. Claimants declare that they are out of work, capable of, available for and actively seeking work during the week in which the claim is made.

The measure of the number of people receiving Universal Credit principally for the reason of being unemployed is still being developed by the Department for Work and Pensions.

---

[6] No Qualifications - No formal qualifications held.

Other Qualifications includes foreign qualifications and some professional qualifications.

NVQ 1 Equivalent e.g. fewer than 5 GCSEs at grades A-C, foundation GNVQ, NVQ 1, intermediate 1 national qualification (Scotland) or equivalent.

NVQ 2 Equivalent e.g. 5 or more GCSEs at grades A-C, intermediate GNVQ, NVQ 2, intermediate 2 national qualification (Scotland) or equivalent.

NVQ 3 Equivalent e.g. 2 or more A levels, advanced GNVQ, NVQ 3, 2 or more higher or advanced higher national qualifications (Scotland) or equivalent.

NVQ 4 Equivalent And Above e.g. HND, Degree and Higher Degree level qualifications

Consequently, this component of the total Claimant Count does not yet correctly reflect the target population of unemployed claimants and is subject to revisions. For this reason the Claimant Count is currently designated as Experimental Statistics.

The Claimant Count of Hillingdon's population in November 2021 was 5.1%. This compares to the London average of 6% during the same month. The claimant count was 2.2% in Hillingdon and the London average was 2.9% in December 2019, which highlights the impact of the Covid-19 pandemic.

Jobs density

The level of jobs per resident aged 16-64. For example, a job density of 1.0 would mean that there is one job for every resident aged 16-64.

The total number of jobs is a workplace-based measure and comprises employee jobs, self-employed, government-supported trainees and HM Forces. The number of residents aged 16-64 figures used to calculate jobs densities are based on the relevant mid-year population estimates.

As Table 8 below shows, Hillingdon had a higher jobs density than both the London and UK average in 2019.

Table 8. 2019 Jobs Density

	Hillingdon (Jobs)	**Hillingdon (Density)**	**London (Density)**	**Great Britain (Density)**
Jobs Density	206,000	1.04	1.03	0.87

Source: ONS

UK Business Counts

Table 9 below presents analysis of businesses at both Enterprise and Local Unit level in 2019. An Enterprise is the smallest combination of legal units (generally based on VAT and/or PAYE records) which has a certain degree of autonomy within an Enterprise Group. An individual site (for example a factory or shop) in an enterprise is called a local unit.

Table 9. TUK Business Counts at Enterprise and Local Unit Level, 2019

	Hillingdon (Numbers)	Hillingdon (%)	London (Numbers)	London (%)
Enterprises				
Micro (0 To 9)	12,350	90.9	473,875	90.7
Small (10 To 49)	900	6.6	38,570	7.4
Medium (50 To 249)	255	1.9	7,650	1.5
Large (250+)	90	0.7	2,145	0.4
Total	13,590	-	522,240	-
Local Units				
Micro (0 To 9)	13,525	85.5	509,415	87.2
Small (10 To 49)	1,685	10.7	59,570	10.2
Medium (50 To 249)	500	3.2	12,885	2.2
Large (250+)	95	0.6	2,315	0.4
Total	15,810	-	584,185	-

Source: Inter-departmental business register (IDBR)

Current profile of Hillingdon Economy and Labour Market

The current profile of Hillingdon's economy and labour market, as summarised by the Council's Employment Land Review (2023) is set out below:

- Hillingdon has a lower proportion of residents either in employment or self-employment (**71%**) compared to most of its immediate neighbours as well as London and the West London Alliance. It also has a higher proportion of residents with no qualifications (**19%**) and fewer people with degree-level qualifications (**28%**). This is reflected in the occupational profile which is dominated by mid-range roles.
- Hillingdon has a much larger economy than its neighbours with over **14,300** businesses supporting around **203,000** jobs. This is mainly due to Heathrow which is the largest single-site employer in the country and a major attractor for businesses which cluster in nearby industrial estates (e.g. Hayes Industrial Estate) and town centres (e.g. Uxbridge Town Centre).
- Hillingdon's employment base has not increased over the last decade of available data – this is likely to reflect the significant impact that the COVID-19 pandemic and its associated lockdowns had on Heathrow Airport and its supply chain businesses.
- Hillingdon's employment mix is dominated by the Transport and Storage (**30,000** jobs), Business Administration and Support Services (**28,000** jobs), Health (**16,000** jobs), Professional, Scientific and Technical (**14,000** jobs), Retail (**14,000** jobs) and Education sectors (**14,000** jobs). Notably there are **3.14x** more jobs in Hillingdon's Transport and Storage sector than represented in the national economy.
- Over the past five years (2015-2021) the sectors that have declined in Hillingdon include Professional, Scientific and Technical Activities (-**21%** jobs), Information and Communications (**-14%** jobs), Property (**-14%** jobs) and Transport and Storage (**-10%** jobs). In contrast the biggest growth sectors have been Finance and Insurance (**+20%** jobs), Construction (**+14%** jobs), Accommodation and Food Services (**+12%** jobs) and Business Administration and Support (**+4%** jobs).
- Hillingdon's office market is significantly larger than most of its neighbouring boroughs with **472** office properties.
- Hillingdon's average office rents are c.**£30 psf** which sits just below Hounslow's average of c.£33 psf. This is relatively high but rental growth has been weak over the

last decade and has flatlined across the past few years. The highest rents are achieved around Hayes, Uxbridge and Heathrow – these are traditional office hubs and have seen newer build / more modern stock come onto the market.

- Hillingdon has high office vacancy rates, which have worsened over the last ten years – they currently sit at **15%**, which is 5 percentage points higher than 2013.
- Hillingdon's office market take-up tends to be for units below 5,000 sqft though there is has been demand for units up to 10,000 sqft, and over 20,000 sqft. This reflects take-up by blue-chip multi-nationals.
- Hillingdon's industrial market is larger than its comparator locations, with the exception of Ealing. It comprises **583** properties.
- The local industrial market is overheating and is dominated by demand from the existing aviation industry but also 'last mile' distribution activity as well as data centres.
- Hillingdon's average industrial rents are relatively high at c**.£19.50psf** but slightly below both Hounslow and Ealing's average rents at c.£20psf. Hillingdon's industrial rents have strengthened over the last ten years, in line with Ealing, Hounslow, and the West London Alliance as a whole.
- Hillingdon's reported industrial vacancy rates saw a low of **2%** in 2019 but this has since increased to **5%** in 2023 – both of these figures are, however, below the GLA's 8% benchmark for a 'healthy' industrial market. The increase in recent years represents, in part, new stock being constructed rather than 'true' vacancy.

The 2023 Employment Land Review also sets out the expected future economic development needs for industrial and office space in the borough. It also assesses current and future employment land supply in the borough.

Likely future conditions

The Covid pandemic has resulted in a change in the way businesses operate. According to an article by Costar[7], Covid and the increase in working from home has had a lasting impact on demand for office space in major cities around the world, including London. Lower quality office space in less attractive locations has become less competitive as people go to offices less and as businesses consolidate space. This is in part driven by a shift to hybrid working for a number of businesses. The most attractive spec office space in good, accessible locations appears to be less affected by the change in working patterns. The effect on the value and requirement for office space may last for many years according to another Costar article[8], and while population growth may increase demand for office space again over the longer-term, it is unclear if demand for office space will return to pre-pandemic levels.

The Council will commission an employment land supply / demand review to assist in the Local Plan Review and relevant data from this will be used to update the scoping report.

[7] Remote Work Estimated To Wipe Out $800 Billion in Office Value in These Nine Global Cities (costar.com)

[8] ibid

Sustainability issues

- Higher housing targets and the need to provide for other uses, including employment floorspace is a necessary balance to achieve at a local level.
- Hillingdon is well-connected to strategic road networks, however greater physical as well as digital connectivity infrastructure is needed to allow economic growth to continue in the future.
- Hillingdon economy is linked to wider London, South-East and national economy. Changing economic patterns and strategies will affect the make-up of Hillingdon's economy, although Heathrow and the industries supporting it will likely remain. Stockley Park and Uxbridge are also established employment locations, however they will not be immune from changing economic patterns.
- The pandemic and changing working patterns may affect the amount and type of office space required. New forms of working and associated facilities may emerge. Adaptability will likely be important.
- Changing shopping patterns as well as changes to permitted development rights will affect the make-up of town centres. There may also be a greater shift towards the distribution economy.
- Hillingdon has continued to have relatively high proportions of economically active people. Unemployment has not significantly affected Hillingdon's economy in recent years, however the economic effects of the pandemic have been adverse.
- Cost of living, particularly housing affordability, compared to wages is high.

Likely evolution without the Local Plan

- The continued loss of employment land is likely to persist without local policy intervention and significant investment in supporting infrastructure. Infrastructure investment will be needed on a London-wide level and the local plan can play a part in identifying locations for growth and investment.
- The continued high living costs compared to wages and rising land values, as well as changing working patterns, may result in companies opting to locate elsewhere.
- A shortage of appropriate employment floorspace in key locations could restrict economic growth and employment.
- The absence of a strategy for locating, protecting and providing employment floorspace would lead to it being located in unsustainable places and in areas with conflicting land uses. Conflicts between neighbouring land uses could also occur without a local strategy to limit the negative impacts of different land uses.

3.4 Housing

Baseline

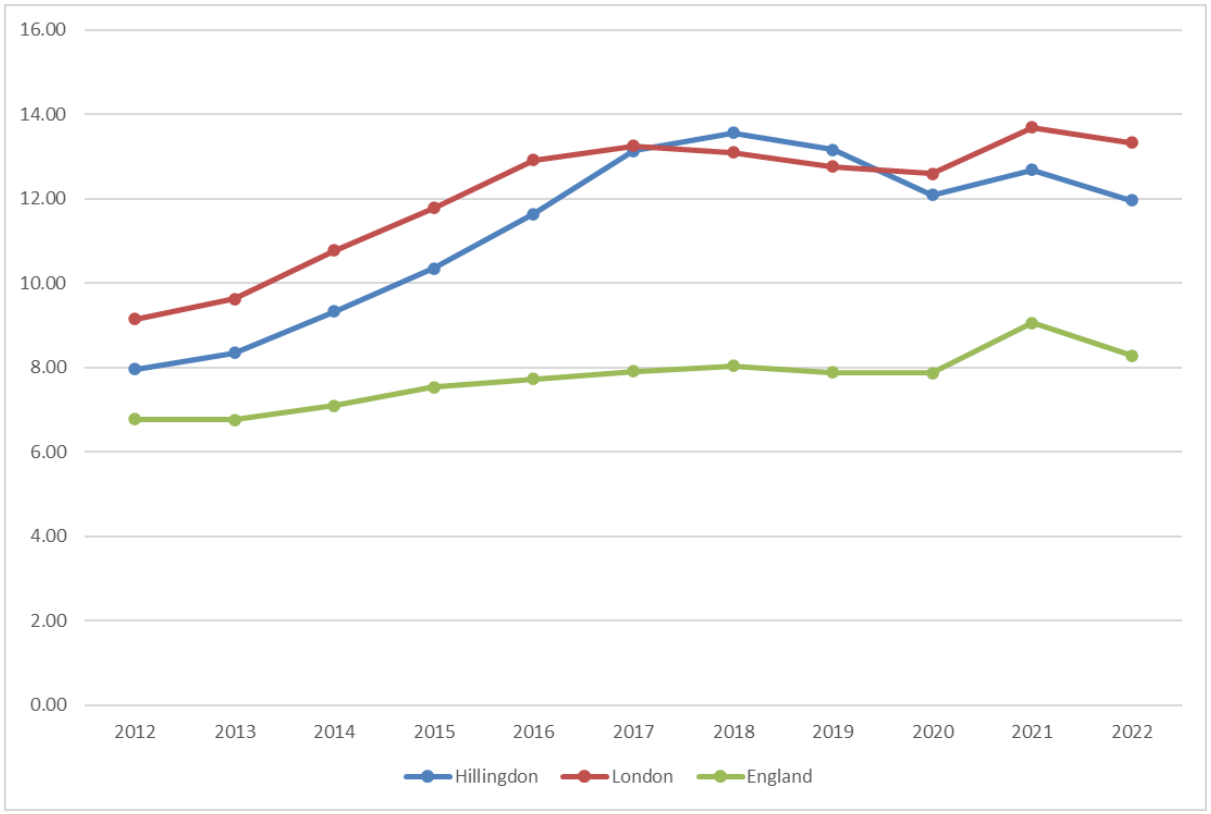
Housing needs to be planned alongside other aspects of infrastructure to ensure that the needs of communities are met and to ensure that a comprehensive approach is taken to development to ensure communities grow sustainably.

As part of the Local Plan review the Council is commissioning a Strategic Housing Market Assessment (SHMA) to provide new baseline information on housing demand. It will provide new information on how the housing market operates, key drivers and relationships and levels of housing need including the mix and size of market and affordable housing required.

Housing Affordability

Housing affordability has consistently decreased in the last two decades as shown in Table 11 and Figure 15 below. The ratio of median earnings to house prices (residence based) in Hillingdon is 11.95 which is significantly higher than the England average at 7.8 and slightly lower than the London average at 13.33. Most mortgage lenders offer a mortgage at most 5 times household earnings so these statistics highlight how large a deposit is required by many of Hillingdon's residents in order to be able to afford to own a home at market value.

Figure 15. Ratio of median earnings to house prices, 2012 to 2022



Source: ONS[9]

[9] House price to residence-based earnings ratio - Office for National Statistics (ons.gov.uk)

Table 10. Ratio of median earnings to house process, 2002 to 2022

Year	Hillingdon	London	England
02	6.47	6.90	5.11
03	7.28	7.44	5.92
04	7.56	8.02	6.60
05	7.87	8.13	6.78
06	8.55	8.37	6.95
07	8.39	8.38	7.14
08	8.65	8.52	6.96
09	7.94	7.83	6.40
10	8.26	8.75	6.85
11	8.13	9.20	6.79
12	7.96	9.15	6.77
13	8.34	9.62	6.76
14	9.33	10.77	7.09
15	10.34	11.78	7.53
16	11.64	12.91	7.72
17	13.13	13.25	7.91
18	13.56	13.09	8.04
19	13.15	12.75	7.88
20	12.09	12.59	7.87
21	12.68	13.68	9.06
22	11.95	13.33	8.28

Source: ONS

Private Sector Rents

There is also a long term trend of private sector rents increasing and outpacing wage increases. 0 shows the median private sector rents for 1, 2 and 3 bedroom dwellings for Hillingdon, London and England in 2018/19 and 2022/23. While less expensive than some other areas of London, rents in Hillingdon are high and increasing.

Table 11. Median private sector rents in 2018/19 and 2022/23

	One-bed	Two-bed	Three-bed
Hillingdon 2018/19	£995	£1,250	£1,500
Hillingdon 2022/23	£1,100	£1,300	£1,550
Outer London 2018/19	£1,050	£1,300	£1,575
Outer London 2022/23	£1,100	£1,400	£1,695
Inner London 2018/19	£1,450	£1750	£2,250
Inner London 2022/23	£1,520	£1,890	£2,400
England 2018/19	£620	£675	£775
England 2022/23	£725	£800	£900

Source: ONS

Average annual salaries in Hillingdon, based on the GLA's earnings by place of residence dataset, were approximately £32,739 in 2022. Before any deductions for student loan repayments and pensions, this equates to approximately £2,200 a month after tax. A person on an average salary renting a one-bed flat in Hillingdon, on average, would use 50% of their income on rent alone in 2022/23.

The average salary in the UK is also approximately £34,372. While this is slightly higher than the average salary in Hillingdon, average rents in England are significantly lower than in Hillingdon and on average represent a much smaller proportion of monthly income than in Hillingdon, meaning that there are areas in England where people will have significantly more disposable income after rent than in Hillingdon. Limited housing supply is one of many factors which contribute towards increasing private rents in the borough.

Dwelling Stock

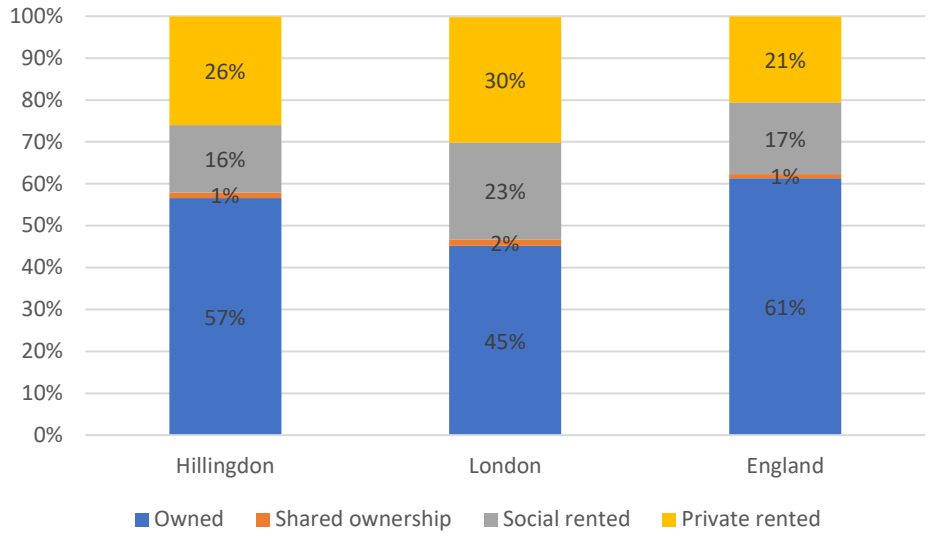
Based on the Government's live tables on dwelling stock[10], the dwelling stock in Hillingdon was approximately 116,340 in 2022 up from 103,907 in 2011. Local authority owned dwelling stock was 10,262 in 2022.

Tenure

In Hillingdon, 57% of borough residents own their own homes, followed by 26% of properties being privately rented, 16% socially rented from the Council and 1% in shared ownership (Source: Census 2021). Hillingdon's owner occupier proportion is lower than England and higher than the London average, as shown on Figure 16, below.

[10] https://assets.publishing.service.gov.uk/media/646b31940d66460010d963e0/LT_100.ods

Figure 16. Household tenure for Hillingdon, London and England



Source: Census 2021

Dwelling type

Table 12 below shows the percentage of housing types at the local level in 2021 (Source: Census 2021).

Table 12. Housing types in Hillingdon

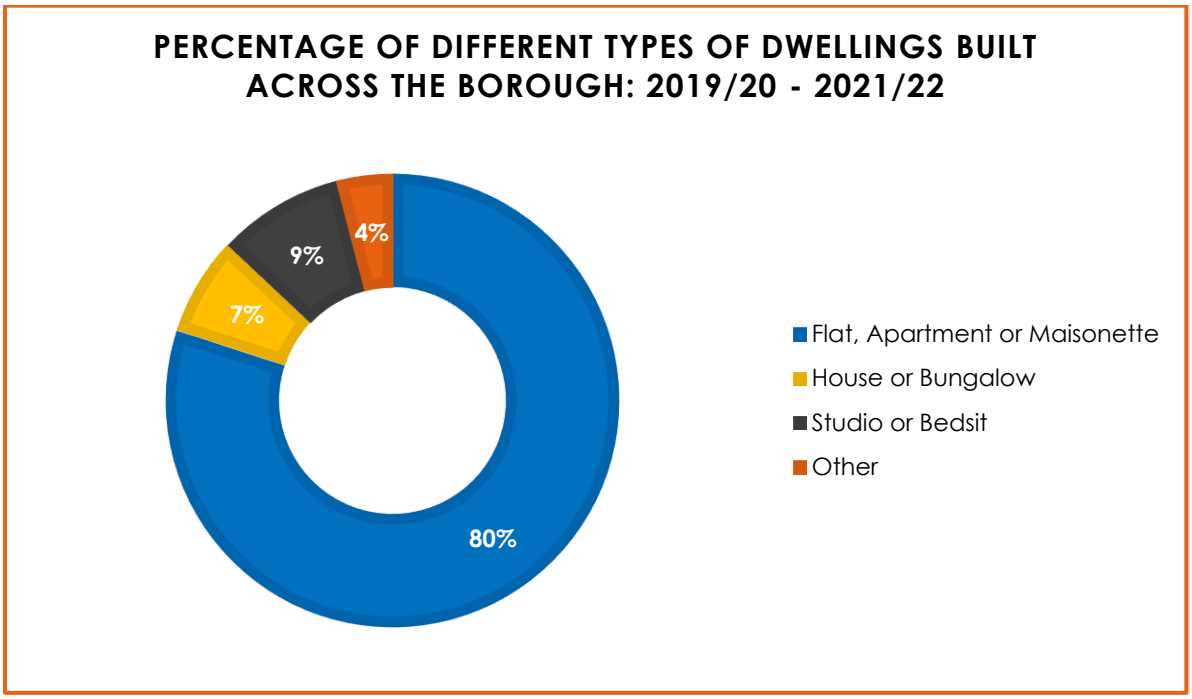
Dwelling type	Percentage
Bungalow or whole houses	68.9%
Flats, maisonettes and apartments	30.8%
Caravans or other mobile/temporary structures	0.3%

Source: Census 2021

Due to a constrained supply of land, the number of flats being built far exceeds any other housing type in Hillingdon and the gap between the number of flats and houses in Hillingdon is decreasing. Based on data from the London Development Database, 2,744 units of flats, apartments or maisonettes (gross) were approved[11] in Hillingdon between the 2019/20 and 2021/22 financial years, which equates to 80% of all new dwellings (see Figure 17, on the following page).

[11] Data includes superseded planning permissions

Figure 17. Types of dwellings built across the borough between 2019/20 and 2021/22



Source: Planning London Datahub

Housing delivery

Updated housing figures, which are due to be published shortly in the 5 Year Housing Land Supply and the AMR, will be published on the Council's website:

- Hillingdon Council Website - Monitoring

Housing delivery statistics are generally split between two categories: conventional self-contained (C3) housing such as houses and flats; and non-self contained housing such as older persons housing and student accommodation.

When measuring housing delivery two figures are generally used by the Council. These are the Housing Flows Reconciliation (HFR) figure, which is produced by the Council and GLA working together, and the Housing Delivery Test (HDT) figures, which is produced by the Government and is an adjusted version of the HFR figure.

Adjustments are made to the figure by the Government and the number of net additional rooms for each category of non self-contained housing has a ratio applied to it by the Government when calculating the HDT figure to account for the number of conventional homes it releases to the housing market on average.

The HDT figure will therefore always be slightly lower than the HFR figure. For the purposes of this report to provide more detailed statistics the HFR figure is used.

Total housing delivery across all categories over the three financial years from April 2019 to March 2022 has totalled 3,435 units, an average of 1,145 units per year. FY2019 saw the strongest delivery within the three years. Delivery of conventional Class C3 housing alone over this period equalled 3,301 units.

Housing delivery since the adoption of the new London Plan target has on average exceeded the annualised target of 1,083. The Council also has a strong supply of housing planned over the next 5 years and is on course to meet the London Plan target over 10 years. Over the three reporting years, the borough delivered 3,435 units, 6% above the London Plan target for the same period.

Table 13. Housing delivery in Hillingdon from all sources of housing from 2019/20 – 2021/22

Completed financial year	Conventional (C3) housing Tenure				Non self-contained housing[12]		HFR Figure Total	HDT Figure Total[13] (after adjustments made by the Government to student and other communal accommodation)	London Plan Target
	Market	Intermediate	Affordable Rent	Social Rent	Student housing[14]	Other[15]			
2019/20	1488	64	51	12	0	105	**1720**	**1702 (published)**	**1083**
2020/21	614	67	91	13	0	21	**806**	**730 (published)**	**1083**
2021/22	564	290	47	0	0	8	**909**	**906 (provisional)**	**1083**
Total	**2666**	**421**	**189**	**25**	**0**	**134**	**3435**	**3387**	**3249**

Source: Planning London Datahub

Table 13 summarises Hillingdon's performance against its housing target over the reporting period and looks ahead to determine how much housing the Council needs to deliver to meet the borough's housing targets. Further details on the Council's future housing land supply can be found in the Hillingdon Five Year Housing Land Supply 2023 document.

Table 14. Hillingdon's housing target: past performance and looking ahead

	Hillingdon's Housing Provision Target	Calculation	Units
A	Minimum Ten Year Target (London Plan 2021)	n/a	10,830
B	Annual average requirement	n/a	1,083
C	Housing Delivery Performance (2019/20 – 2021/22)	n/a	3,339[16]
D	Remaining housing required between (2022/23 - 2028/29)	A - C	7,491
E	Number of remaining plan years (2022/23 - 2028/29)	n/a	7
F	Annual minimum target for new homes required in the remaining period	D / E	1,070.14
G	Five year target (01/04/2022 - 31/03/2027)	F x 5	5,350.7
H	5% buffer	5 % of G	267.53
I	**Five-year target plus 5% buffer**	**G + H**	**5,618**

Land is finite and finding capacity in the borough to deliver more housing will continue to be challenging. The borough faces a challenge in terms of delivering against the new London Plan housing target, however the most recent five year housing land supply (Published April

[12] For monitoring purposes, the number of net additional rooms for each category of non self-contained housing has a ratio applied to it by the Government when calculating the HDT figure to account for the number of conventional homes it releases to the housing market on average, as per the London Plan. Therefore the numbers listed here are not the actual number of rooms of each type of non-self contained housing.
[13] Please note that these figures are subject to minor revisions annually as new information on the progress and date of completions of housing developments is obtained. These figures are the most up to date HDT and HFR figures that are available.
[14] As per the London Plan, student housing is counted at a ratio of 2.5 rooms:1 additional dwelling
[15] As per the London Plan, all other non self-contained housing is counted at a ratio of 1.8 rooms:1 additional dwelling.
[16] Please see Table 1.

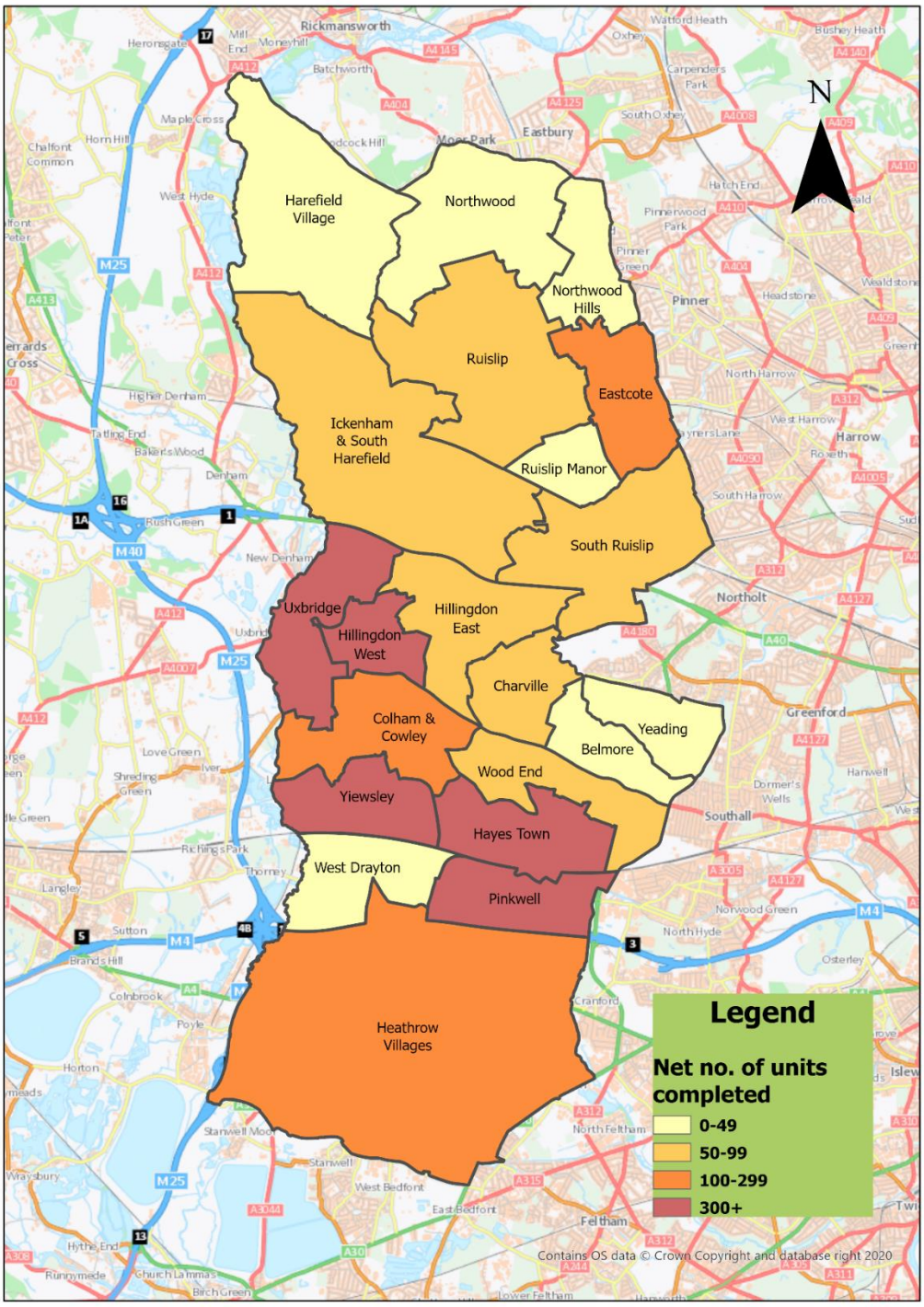
2023) shows there are a sufficient supply of deliverable sites available to meet this target until 2026/27 (see Table 14).

Non self-contained housing refers to student housing, hostels, housing for older people and houses in multiple occupation. The London Plan includes these types of housing towards meeting housing targets, however it applies a C3 housing equivalent ratio to each of these types of non-self contained housing based on the number of conventional homes each is expected to release in the housing market. These ratios have already been applied in Table 13. Of these, housing for older people is the most significant contributor to the local housing market and it's 67 units account for 1.9% of all housing delivery over the three year period.

Long-term empty homes (more than 6 months) returning back to use can also be counted when calculating total housing delivery, however these do not contribute towards increasing actual built housing stock in the borough and could potentially lead to double-counting. As such, the Council has opted not to include this source of housing when calculating total housing delivery in the Borough. This is kept under review and could be amended in the event of an improved dataset.

Distribution of new housing across the borough

Figure 18. Distribution and amount of new housing delivered in the borough between 2018/19 and 2021/22



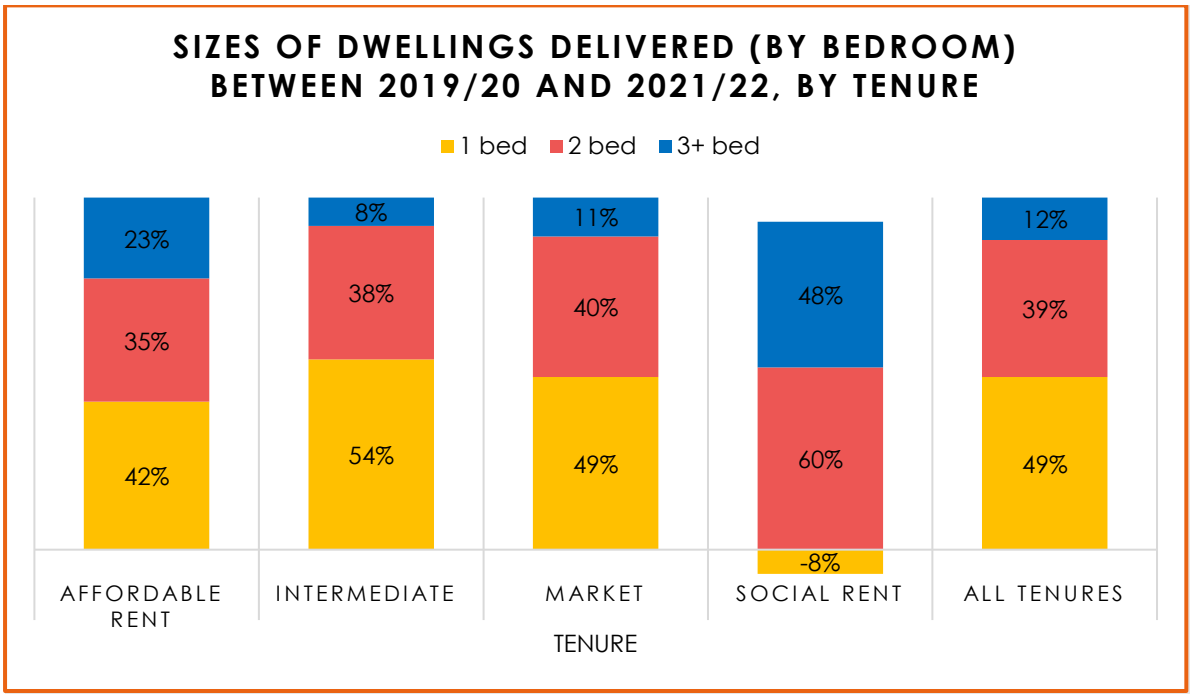
Source: Planning London Datahub

As Figure 18, above shows housing growth over the reporting years has been greatest in the wards of Uxbridge, Yiewsley, Hillingdon West, Hayes Town and Pinkwell. The wards of Colham & Cowley, Eastcote and Heathrow Villages have also experienced high housing growth in comparison to other wards within the reporting years.

Housing Size Mix

Hillingdon's latest Strategic Housing Market Assessment (SHMA) identified a significant need for larger 3+ bed dwellings, particularly in the affordable tenures. This need has been translated into the Hillingdon Local Plan Part Two (2020) policy on housing mix, which places greater emphasis on the need for family housing. The London Plan 2021 also requires housing size mixes to have regard to local evidence and supports the delivery of a range of housing sizes to deliver mixed and inclusive neighbourhoods through Policy H10. The housing mix policies prior to the adoption of the Local Plan (2020) did not seek the same level of family size housing. The Council has been relatively successful in securing a larger proportion of 3+ bed dwellings in the affordable tenures over the reporting years. Site specific design constraints or financial viability can generally affect the ability to achieve higher levels of family sized housing on some development sites. Delivering an appropriate mix of unit sizes that responds to site specific factors such as location, public transport accessibility and proximity to town centres is also important, noting that the delivery of new smaller units facilitates the retention of existing larger units. The proportion of 1, 2 and 3+ bed dwellings delivered as a total of all units completed between 2019/20 and 2021/22 is shown in Figure 19 and 0 below.

Figure 19. Proportion of 1, 2 and 3+ bed dwellings delivered as a total of all units completed between 2019/20 and 2021/22, by tenure



Source: GLA

Table 15. Proportion of 1, 2 and 3+ bed dwellings delivered as a total of all units completed between 2019/20 and 2021/22, by tenure

Number of bedrooms	All	Market	Social Rent	Affordable Rent	Intermediate
1	49%	49%	-8%	42%	54%
2	39%	40%	60%	35%	38%
3+	12%	11%	48%	23%	8%

Source: GLA

Small sites

Table 16. Proportion of new homes delivered through schemes of less than 10 units

Completed financial year	Small sites <10 net units	Total net units	Small sites % <10 net units
2019/20	650	1720	38%
2020/21	352	806	44%
2021/22	317	909	35%
Total	1319	3435	38%

Source: Planning London Datahub

A significant portion of new homes built across the borough have come from minor developments of less than 10 units total, as highlighted in Table 16. This trend has been consistent across the borough over the last few years and is likely to continue in the near future. Small sites are expected to play a significant role in meeting the borough's large housing need over the next few years.

Affordable housing

The Council seeks to maximise delivery of affordable housing on all major housing developments.

Housing Register

As of March 2023 there were 3,451 households on the social housing register in need of a home. This is up from 2,738 in March 2021, an increase of almost 30% in two years.

Affordable housing delivery

Over the reporting period, as figure 24 shows, the Council has secured 19% of all completed self-contained (C3) dwellings as affordable housing. There are a few potential reasons behind this:

- A large proportion of the borough's housing comes from schemes below 10 units which the Council cannot seek affordable housing from. This limits the Council's ability to secure affordable housing. **It is important to note that the 19% figure is slightly misleading in that as affordable housing can only be secured on major housing developments and considering that a large proportion of housing delivery in Hillingdon comes from minor development, there will naturally be a**

significantly higher proportion of market tenure housing when compared to affordable.

- Financial viability on individual schemes may affect the amount of affordable housing secured from major housing developments.
- Homes delivered through permitted development rights do not need to contribute towards affordable housing.

Between 2019/20 and 2021/22, 2,116 units were delivered from schemes comprising of 10 units or more (major developments). The Council is able to secure affordable housing on these developments.

In total, 635 affordable housing units were secured and delivered in the borough within the reporting years. Therefore, as a percentage of units delivered by major housing schemes, the Council secured on average 30% of units as affordable housing, which falls just below the Council's minimum 35% policy requirement.

The percentage of units secured as affordable housing will vary from scheme to scheme, however, the above shows that there is reason for the Council to explore further how to improve affordable housing delivery in the borough.

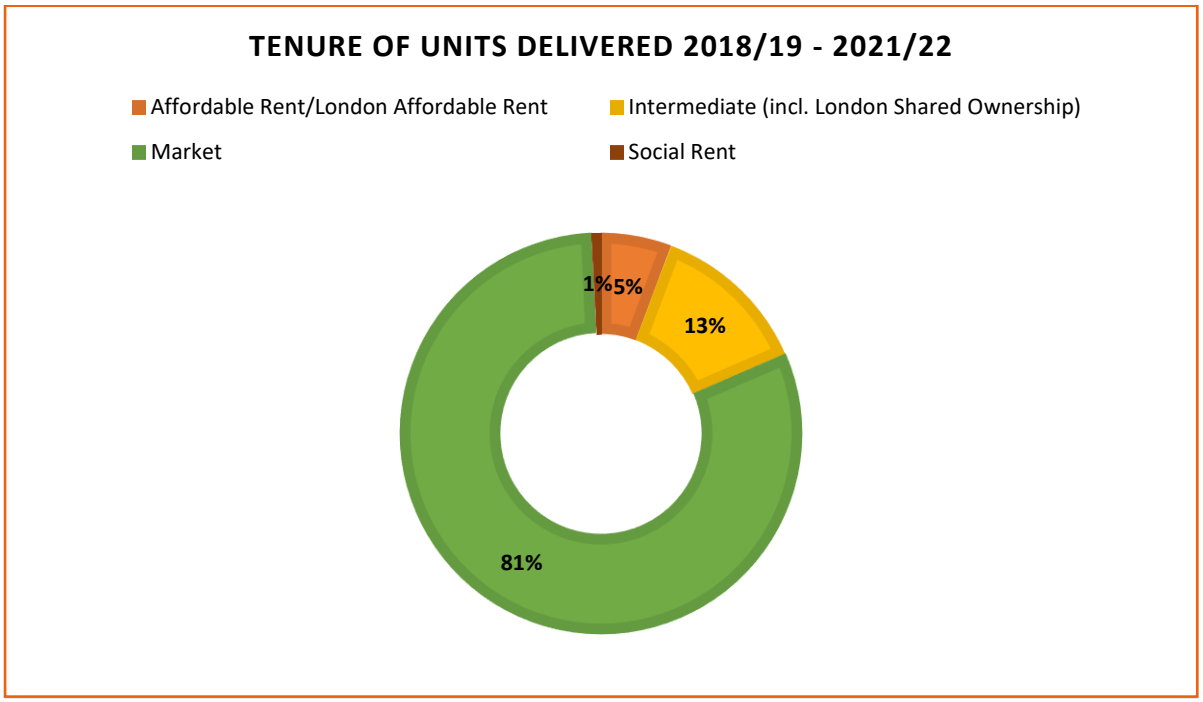
Of the affordable housing delivered, the Council secured a higher proportion of intermediate housing compared to social and affordable rent, which is not reflective of policy requirements. The Council's planning policies seek a 70:30 split in favour of social and affordable rent on each scheme. Figure 20 below shows the proportions of different types of affordable housing tenures delivered.

Housing tenure

The Council currently follows the approach advocated within the London Plan (2021), with a tenure split requirement requiring a higher proportion of low-cost affordable rent products over intermediate housing.

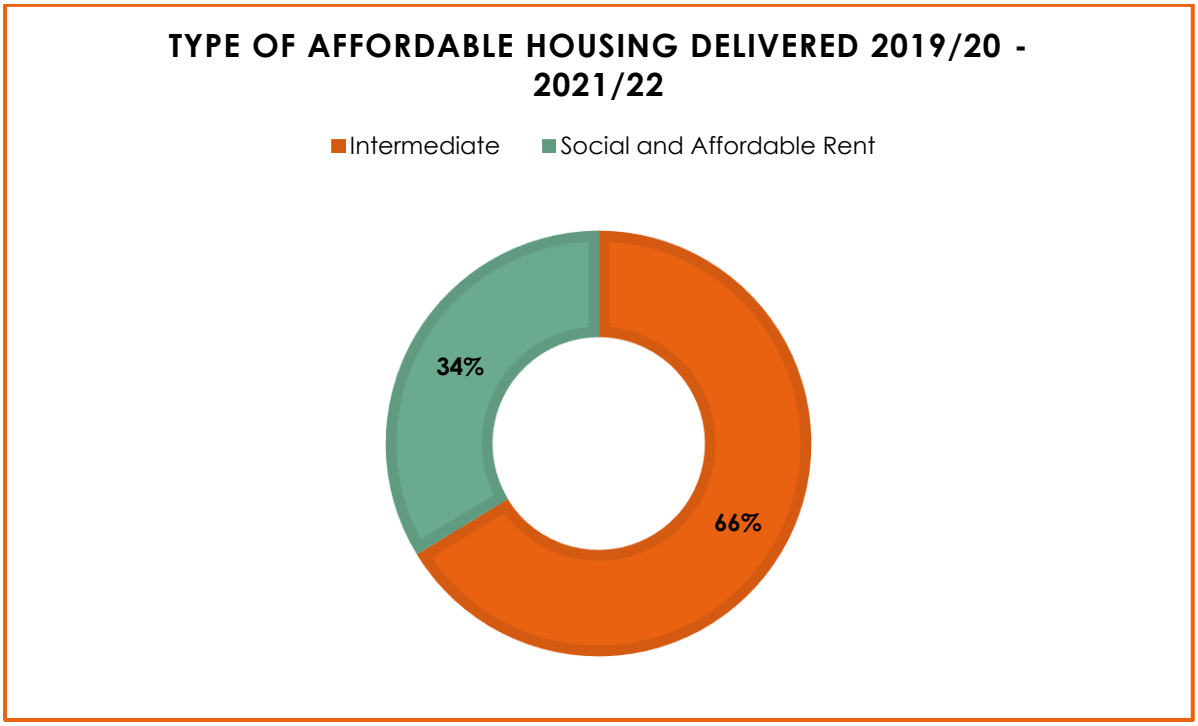
However, as shown in Figure 20 and 0, below, past delivery has favoured intermediate housing over social rented.

Figure 20. Tenure of affordable housing secured via S106 obligations delivered in the borough between 2018/19 and 2021/22 (inclusive)



Source: Planning London Datahub

Figure 21. Proportion of the different types of affordable housing secured in the borough between F2019/20 and 2021/22



Source: Planning London Datahub

Table 17. Tenure of affordable housing secured via S106 obligations delivered in the borough between 2018/19 and 2021/22 (inclusive)

Tenure of self-contained housing	Net number of units delivered
Affordable Rent/London Affordable Rent	189
Intermediate (incl. London Shared Ownership)	421
Market	2,666
Social Rent	25

Source: Planning London Datahub

Gypsies and travellers supply and need

For preparation of the Hillingdon Development Management Policies 2020, the Council commissioned the Gypsy and Traveller and Travelling Show-people Accommodation Assessment (ORS 2017). This study identified the need for two additional pitches for travellers during the Local Plan period. Under the existing Local Plan, these additional pitches will be provided at the Council owned Colne Park Site, an existing traveller's site (Hillingdon Site Allocations 2020, page 18). Updated evidence of need is being produced by the Greater London Authority, which will include locally derived need figures.

Sustainability issues

- There is a lack of genuinely affordable homes in Hillingdon, and generally in London, and also a high number of households on the local authority housing register.
- Within the affordable housing category there is a low number of homes delivered at social rent.
- Average private rents in the borough and in London as a whole make up a significantly larger proportion of median salaries in the borough than in the rest of England.
- Overcrowding is also an issue with larger family homes being in short supply.
- Housing affordability in Hillingdon is significantly worse than the England average with house prices over 13 times higher than median earnings in Hillingdon.
- A shortage of developable land, a growing population and changing household sizes mean demand for housing is much higher than supply. This exacerbates the housing affordability issue. This is a London-wide issue.
- Rising land values and costs will make delivery of affordable housing more costly. The delivery of market and affordable housing is based on a large number of changing factors that need to be kept under review.
- A lack of good quality housing and supply will have knock-on effects on things such as employers accessing labour.
- There are barriers to access for all within the built environment and on public transport systems. An ageing population and increase in chronic conditions will further increase the need for more accessible and inclusive public realms, buildings and infrastructure.
- Ensuring accessibility is factored into new development is critical to building strong and inclusive communities.

Likely evolution without the Local Plan

- Land is finite and finding capacity in the borough to deliver more housing will continue to be challenging. The borough faces a challenge in terms of delivering against the new higher London Plan housing target, however the most recent five year housing land supply (July 2021) shows there are a sufficient supply of deliverable sites available to meet this target until 2025. Over the longer-term there is likely to be continued pressure on land availability from competing land uses, with a plan needed to deliver new strategic sites and guiding policies.
- The challenges to meet housing demand (including total requirements, size, type, tenure, and location) are likely to increase if left unmitigated.
- Without local plan policies to ensure delivery of housing that meets local needs, only the most profitable types and tenures of housing would be delivered. Housing would likely be less diverse and of a poorer quality, without local policies which ensure development proposals take account of local needs/aspirations.
- Local planning policies can help ensure improved accessibility of the built environment, including ensuring all new buildings are accessible and wheelchair homes are included in new developments. Without these interventions, social isolation and discrimination could become prevalent. Local planning policies will not be the only way to improve accessibility in the built environment, however, and building regulations and other systems will contribute significantly to addressing this issue.

3.5 Land use and landscape

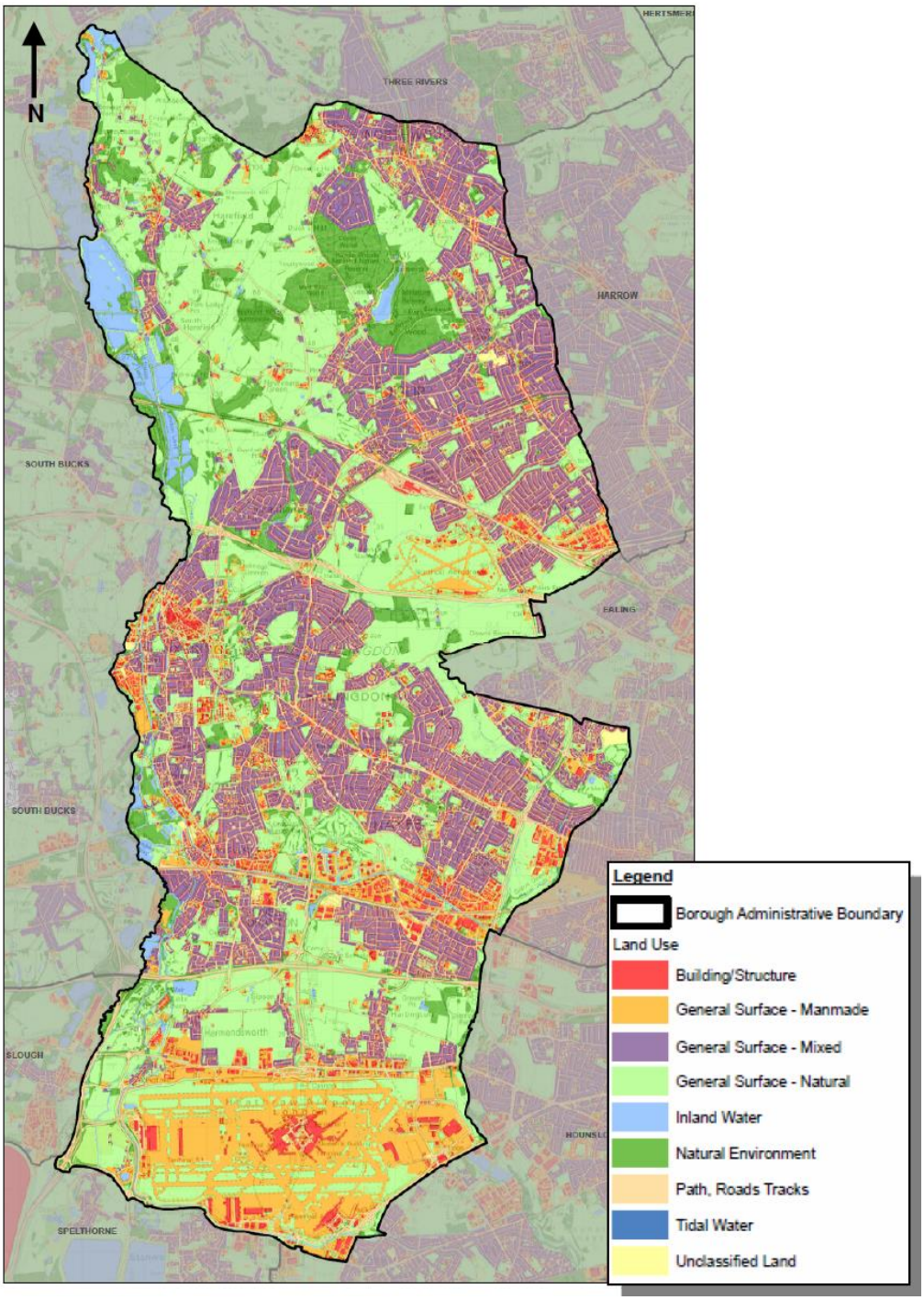
Table 18 below shows the proportions of different types of land uses in the borough as recorded in 2018[17]. A large proportion of the borough is not developed due to large areas of agricultural land, natural forest, open land and water and a significant area of residential gardens which are recorded as undeveloped land.

Table 18. Percentage of different land uses in the borough

Land Use	**Percentage**
Community Buildings	3.6
Leisure and recreational buildings	0.01
Industry	0.5
Offices	0.5
Retail	0.4
Storage and Warehousing	0.3
Landfill and Waste Disposal	0.002
Minerals and Mining	0.14
Residential	5.5
Transport and utilities	22.6
Unidentified buildings/structures	4.9
Developed Use	**38.5**
Agricultural land and buildings	12.6
Forest, open land and water	12.4
Outdoor recreation	10
Residential Gardens	18.4
Undeveloped land	7.7
Non-developed Use	**61.2**

[17] Live tables on land use - GOV.UK (www.gov.uk)

Figure 22. Land use map of Hillingdon



Green Belt

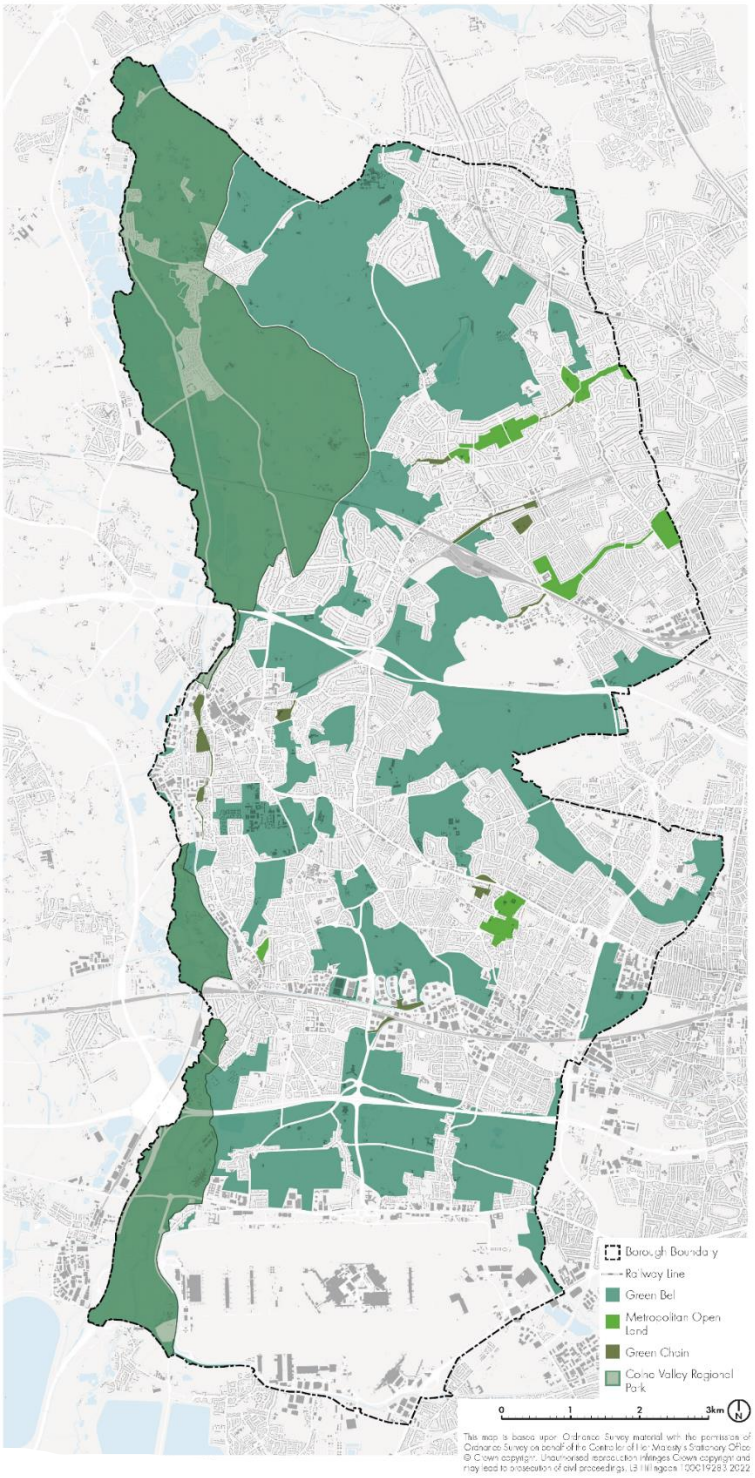
The aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open. The essential characteristics of the Green Belt are its openness and permanence. The extent of the borough's Metropolitan Green Belt and areas of Metropolitan Open Land are shown in Figure 60, on the following page.

Based on the most recent Government data on Green Belts, the current amount of designated Green Belt land in the borough is now 4,870 hectares, which is 42.1% of the borough.

Metropolitan Open Land

Metropolitan Open Land (MOL) is strategic open land within the urban area. It protects open land within the city, as opposed to around the edge. The designation applies only in London and is designated by Local Planning Authorities. MOL has equal legal status and protection to Green Belt. Hillingdon has 107 hectares of MOL, as shown on Figure 23, below.

Figure 23. Distribution of designated Green Belt land in Hillingdon



Source: Hillingdon Townscape and Character Study 2023

Sustainability issues

- There is a finite land resource and as the population grows it will become more challenging to meet needs within Hillingdon's own boundaries.
- There is a high demand for homes and this needs to be balanced with provision of supporting infrastructure, planning for economic growth, protection of the natural and historic environments and creating a sustainable, well-designed places.
- While Hillingdon is a large borough, large parts of it are within the Green Belt or Metropolitan Open Land. Heathrow Airport also occupies a large land area to the south of the borough, meaning land resource is limited. Approximately 42% of the borough is designated as Green Belt and Heathrow Airport occupies approximately 7% of the borough. The character of Green Belt and Metropolitan Open Land should be protected. While there is a supply of brownfield land in the borough, as demonstrated by the Council's 2023 5-year Housing Land Supply, a key challenge will be accommodating population and development growth on existing brownfield land over the longer-term and ensuring land is used as efficiently as possible.
- There are large areas of valued landscapes in the borough, including the large areas of Green Belt and rural areas. These provide a number of health benefits and tranquil locations for resident and visitors. These spaces are important to preserve for reasons of scenic value, access to nature, and biodiversity. (Please also refer to section 3.17 on Green Infrastructure)
- A limited land supply leads to higher density development, which needs to be subject to a higher level of design scrutiny, but also provides opportunities for infrastructure delivery.

Likely evolution without the Local Plan

- Development may not be directed to the most sustainable locations, making less efficient use of land and infrastructure and increasing car dependence. The London Plan and NPPF will make a difference, however these documents seek a significant amount of intervention through the local plan process. This includes the need to create a local evidence base, designations and standards.
- As the population increases, pressure to develop on open and green landscapes including Green Belt will intensify. The Green Belt is protected by the NPPF and the London Plan, however local policies are also needed to protect these spaces and to demonstrate how the Council will meet development objectives using only brownfield land. (Please also refer to section 3.17 on Green Infrastructure)

3.6 Health and wellbeing

Information on the state of health and wellbeing in the borough comes mainly from the Joint Strategic Needs Assessment (JSNA[18]). The JSNA presents a statistical overview and borough profile in relation to health, and the wider determinants of health, including population, ethnicity, deprivation, housing needs and disability, mortality and prosperity. The JSNA identifies significant contrasts in health indicators in different areas and establishes a series of aims to reduce health inequalities and improve access to healthcare services, as well as tackling the root causes of poor health. The issues identified in the JSNA form the

[18] London Borough of Hillingdon - Joint Strategic Needs Assessment

basis of the Primary Care and Community Health Service Strategy (PC&CHSS). This sets a vision to improve the health and well-being of everyone in Hillingdon.

The JSNA has three major aims to provide:

- planners with a prioritised list of recommended areas to address to improve the health of the population and/or reduce health inequalities
- a good summary description of the current health and wellbeing in Hillingdon
- an accessible timely authoritative database to specific needs assessment.

Further, The North West London Integrated Care System (part of the NHS) have created a health and care strategy to improve health outcomes in the area. The strategy sets out a detailed plan to deliver against its objectives over the next five years.

Overall, the health and wellbeing of Hillingdon's residents is good and continues to improve. Based on key indicators and other data, the key headlines from the needs analysis shows that for people living in Hillingdon compared to England on average:

- Life expectancy for both men and women in Hillingdon is higher.
- Children living in deprivation are lower.
- Long term unemployment is lower.
- Rates of homelessness are lower than England.

As with all Boroughs, local analysis indicates some challenges to improve health and wellbeing. These include:

- Inequalities in health across the borough.
- Historically higher levels of violent crime in Hillingdon.
- People diagnosed with diabetes in Hillingdon is higher than average.
- The percentage of physically active adults is lower than England.

The biggest cause of death in Hillingdon continues to be cardio-vascular disease (heart disease and stroke), cancer and respiratory diseases. Diabetes is a significant cause of illness (morbidity) and predisposes to other diseases e.g. heart disease and stroke, kidney disease and blindness. Certain lifestyle factors will increase the risk of ill-health, including smoking, poor diet, lack of regular exercise and higher levels of alcohol consumption and/or binge drinking. Age and other related conditions also affect health and wellbeing. Many people aged 65 and over are diagnosed with one or more long term conditions, of whom over half are typically diagnosed with multiple long term conditions which increases dependency on care and support. Other conditions include learning disability and child and adult mental health, including dementia.

Regional variation

A key finding of the JSNA is the different health needs in the north and south of the borough. Residents in the north are more likely to require health promotion in relation to disease prevention, home support and end of life services. The south of the borough is more densely populated with a younger age demographic, higher levels of deprivation and shorter life expectancy.

Key health and wellbeing needs

- Levels of excess weight and obesity are a growing threat to population health. Currently, excess weight in 4-5 year olds is 21% and, in 10-11 year olds is 32.6%.
- Excess weight prevalence in adults (63.4%) is similar to the national average (64.6%), with 55% of our residents saying they are physically active. Hillingdon's utilisation of outdoor space (14.7%) is however below the national average (17.9%), despite the significant amount of greenspace and active opportunities in the borough.
- Smoking prevalence in those aged over 18 in Hillingdon is 17.1%. This is similar to the England average (18%) and the London average (17%). Meanwhile, smoking in pregnancy is 7.4% which is better than England (11.4%), but worse than the London average (4.8%).
- Good mental health is of great importance to ensuring the health and wellbeing of our people and communities. The prevalence of self-reported depression and anxiety in the Hillingdon GP registered population is 9.9%, with hospital admissions for self-harm (10-24 years) was 234.7 per 100,000 population.
- Social isolation remains a challenge in an age of significant digital connectivity. Currently, the proportion of people who use services (43%) and their carers (26%) who reported that they have as much social contact as they would like.
- Health and wellbeing needs are growing increasingly complex, with more and more people reporting living with chronic conditions. Long term conditions such as diabetes, respiratory (COPD/asthma), neurological (eg epilepsy), and heart disease, with some people managing multiple conditions, are a unique challenge to health and wellbeing today.
- Cancer screening rates in Hillingdon are lower than the national average, with too few patients diagnosed in the early stages, enabling a swifter response and better health outcomes.
- The borough population is an aging one, which is an issue for the majority of London authorities.

Accessibility to health services

Hillingdon has 48 GP practices serving a GP registered population of 309,300 (as recorded in 2017). It also has major hospitals with Mount Vernon Hospital in the north of the borough and Hillingdon Hospital in the centre of the borough. These are shown in Figure 24 and 0.

Figure 24. Distribution of GP practices across Hillingdon

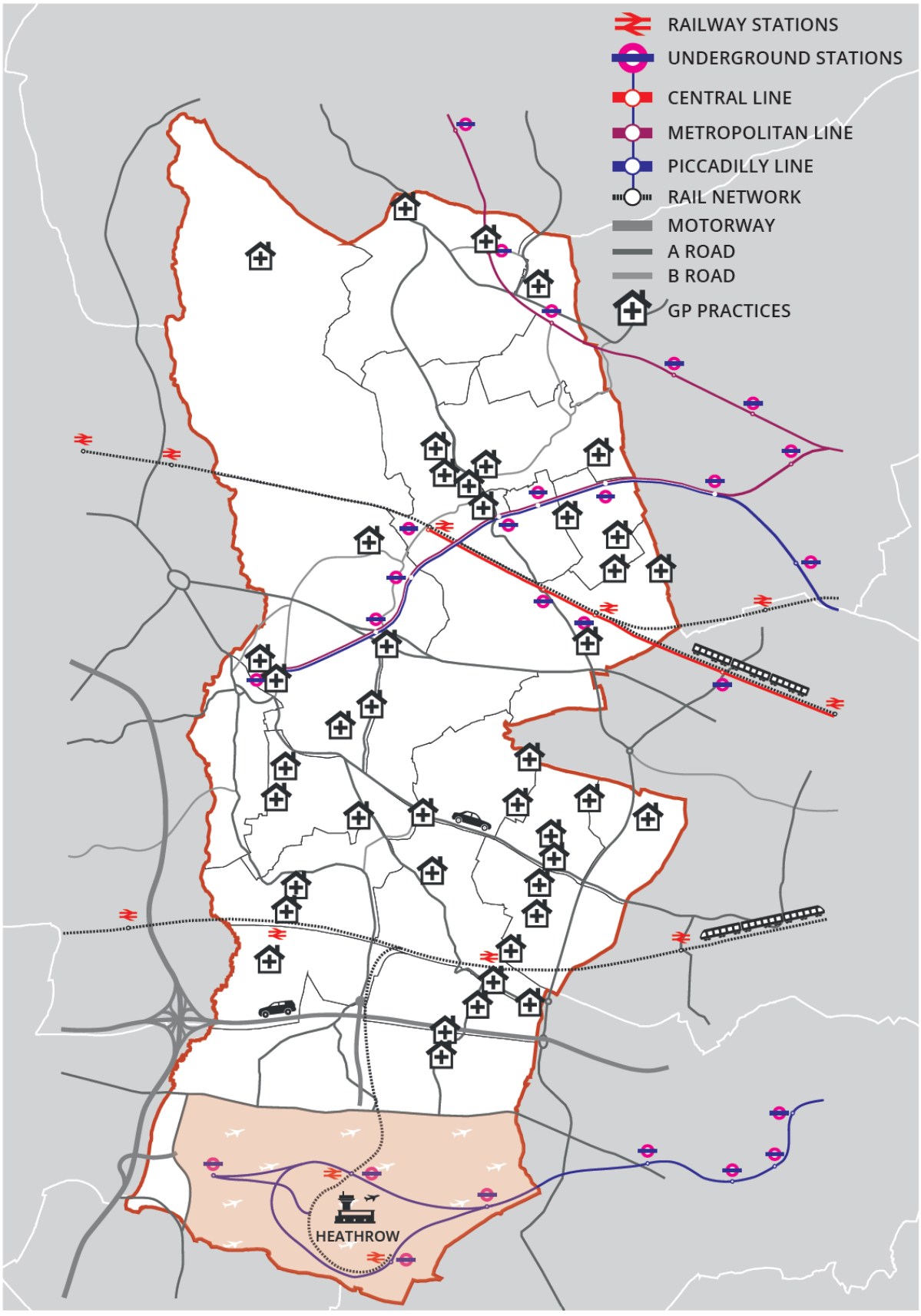
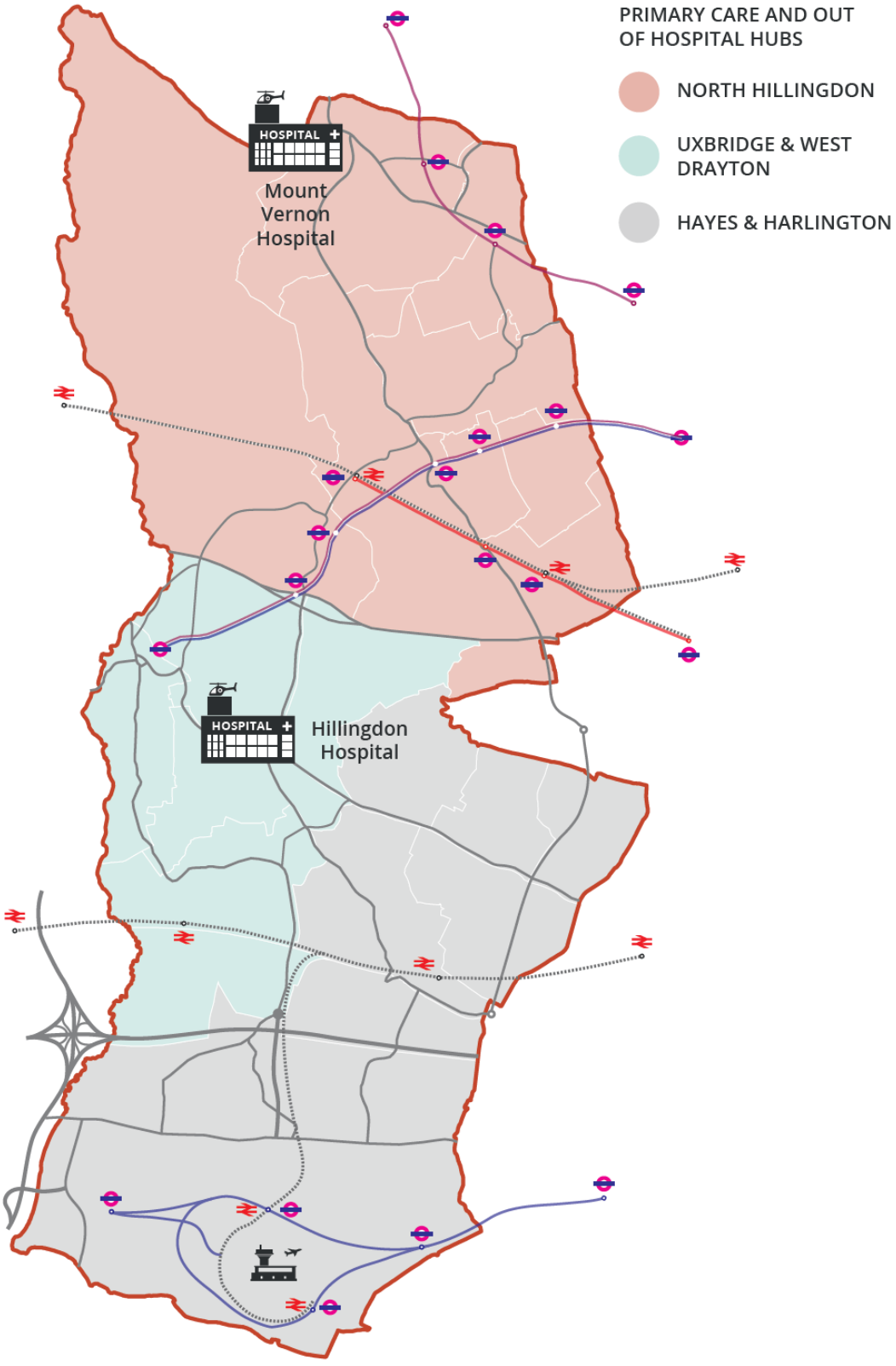


Figure 25. Hospital locations in Hillingdon



Sustainability issues

- While the health of Hillingdon residents is generally better than the England average, there are some significant challenges.
- Cardio-vascular disease, cancer, respiratory disease and diabetes are some of the main causes of death in the UK and they need to be tackled.
- The borough also has a lower proportion of physically active adults than the England average, and childhood and adult obesity is a London-wide problem.
- Regional variations - Residents in the north are more likely to require health promotion in relation to disease prevention, home support and end of life services. The south of the borough is more densely populated with a younger age demographic, higher levels of deprivation and shorter life expectancy.
- Health and wellbeing needs becoming increasingly complex with an increase in chronic conditions as well.
- There is an increasing and changing pressure on the health services and service provision.
- Social isolation, depression and anxiety affect a significant proportion of the population.

Likely evolution without the Local Plan

- Without local planning policies, the borough will likely experience an increased pressure on local health services and continuation of current trends.
- London Plan policies encouraging walking and cycling will have an effect but local policies which create a healthy urban environment, encourage active travel, and target local health issues and support/allocate health infrastructure provision will also be needed.
- Local plan policies can also help through the provision and support for health infrastructure, however this issue will also need to be addressed by several different responsible bodies.

3.8 Historic environment

Baseline

Heritage assets are defined as a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Their significance may come from its historical, archaeological, artistic or architectural value. Hillingdon has a wide variety of heritage assets. These include listed and locally listed buildings, scheduled ancient monuments, war memorials, registered parks and gardens, Archaeological Priority Areas and zones, Conservation Areas and Areas of Special Local Character.

Hillingdon has 15 designated areas of special local character (ASLC), 31 designated conservation areas, approximately 435 statutory listed buildings and 331 locally listed buildings, 328 buildings and sites of local architectural or historic importance, 5 scheduled monuments, 72 war memorials, 22 Archaeological Priority Areas/Zones, as well as two registered parks and gardens.

The Grand Union Canal Paddington Arm and the Slough Arm pass through Hillingdon and are important heritage assets and part of the character, cultural and social focus of the borough.

Some of the 31 conservation areas have Conservation Area Appraisals which highlight the assets which make the areas distinctive and aim to protect the important historical and cultural features. Two conservation areas, Eastcote Park and The Glen, Northwood, also have management plans which according to Historic England are "vehicles for reinforcing the positive character of a historic area as well as for avoiding, minimising and mitigating negative impacts identified as affecting the area", noting that this may also help to "outline opportunities to better reveal or enhance significance, possibly through the location or design of new development".

Historic England maintains a nationwide Heritage at Risk register, updated on an annual basis. The 2023 register identifies 44 heritage assets at risk in Hillingdon.

Archaeological Priority Areas in Hillingdon

Table 19. Archaeological Priority Areas in Hillingdon

Ref.	Name of area	Nature of resource
APA	Brackenbury Farm	Mediaeval
APA	Cowley	Mediaeval
APA	Cranford Park North	Prehistoric
APA	Eastcote Village	Mediaeval
APA	Harlington	Prehistoric
APA	Harmondsworth	Saxon, Mediaeval and earlier
APA	Hayes	Saxon and Mediaeval
APA	Hillingdon	Mediaeval
APA	Ickenham Manor	Mediaeval
APA	Ickenham Pynchester Moat	Mediaeval
APA	Ickenham Swakeleys	Prehistoric and Mediaeval
APA	Ickenham Village	Saxon and Mediaeval
APA	North Harefield	Prehistoric and Mediaeval

APA	Ruislip Motte and Bailey	Mediaeval
APA	Sipson	Prehistoric
APA	South Harefield	Prehistoric and Mediaeval
APA	Stanwell Cursus Complex	Prehistoric
APA	Uxbridge	Prehistoric and Mediaeval
APA	West Bedfont	Prehistoric
APA	West Drayton	Saxon and Mediaeval
APZ	Colne Valley	Prehistoric
APZ	Heathrow	Prehistoric

Scheduled Monuments

Brackenbury Farm Moated Site, Ickenham: Medieval moated site with a grade II* listed house, Breakspear Road South.

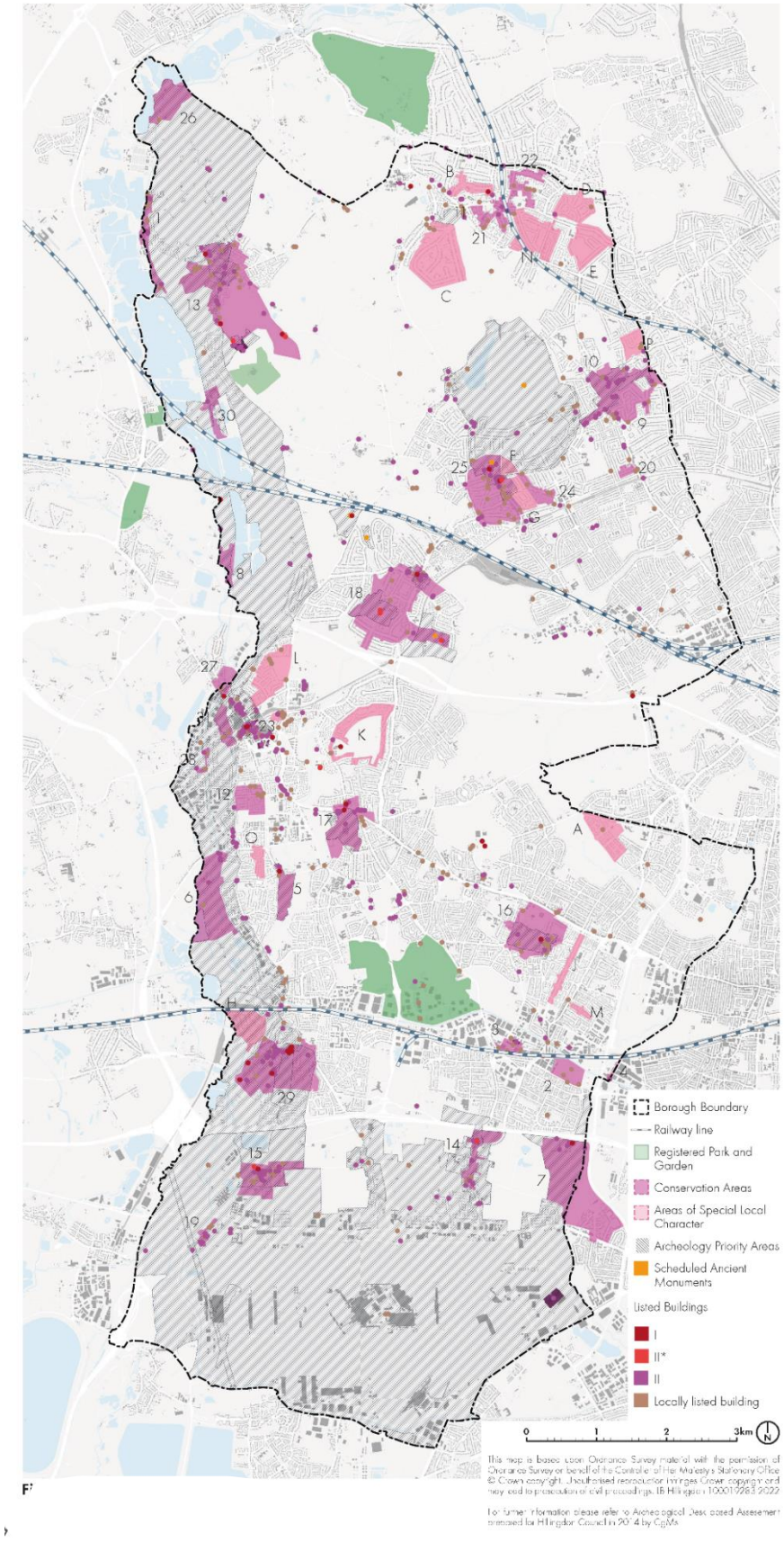
Manor Farm Moat, Ickenham: Large medieval moated site surrounding the Manor House, Long Lane, Ickenham

Park Pale, Ruislip: Earthwork forming the boundary of the medieval deer park.

Pynchester Moat, Ickenham: Medieval moated site by the River Pinn, located in the woods near Copthall Road West. This is the only surviving moat in Hillingdon that's still complete.

Ruislip Motte and Bailey: An early medieval motte and bailey, the grade II listed Manor House being built within the bailey at Manor Farm, Ruislip

Figure 26. Heritage assets in Hillingdon



Source: Hillingdon Townscape and Character Study 2023

Table 20. Conservation areas in Hillingdon

	Conservation Area	Character
1	Black Jacks and Copper Mill Lock, Harefield	Canalside
2	Botwell: Nestles, Hayes	Industrial
3	Botwell: Thorn EMI, Hayes	Industrial
4	Bulls Bridge, Hayes	Canalside
5	Cowley Church (St. Lawrence), Uxbridge	Ancient remains
6	Cowley Lock, Uxbridge	Canalside
7	Cranford Park	Estate, park and riverside environment
8	Denham Lock, Uxbridge	Canalside
9	Eastcote Park Estate	Residential estate
10	Eastcote Village	Historic centre and environment
11	The Glen, Northwood	Residential estate
12	The Greenway, Uxbridge	Residential area
13	Harefield Village	Historic village and setting
14	Harlington Village	Historic village
15	Harmondsworth Village	Historic village
16	Hayes Village	Historic village and environment
17	Hillingdon Village	Historic village and school
18	Ickenham Village	Historic village, residential streets and historic manor
19	Longford Village	Historic village core and 1930s development
20	Morford Way, Eastcote	Residential estate
21	Northwood Town Centre	Commercial centre
22	Northwood, Frithwood	Large residential houses in Arts and Crafts style
23	Old Uxbridge / Windsor Street	Historic high street
24	Ruislip Manor Way	Residential area
25	Ruislip Village	Historic village core
26	Springwell Lock	Canalside environment
27	Uxbridge Lock	River/canalside
28	Uxbridge Moor	Canalside
29	West Drayton	Historic village and setting
30	Widewater Lock	Canalside
31	Rockingham Bridge	Historic settlement, residential and park environment

Sustainability issues

- Hillingdon has many designated heritage assets across the borough. Some of these heritage assets are on the Heritage at Risk register resulting from neglect, decay or inappropriate development, or are vulnerable to becoming so. Heritage assets are irreplaceable.
- As well as designated heritage assets, there are local heritage assets which are not as strongly protected through legislation.

- As the population grows and development pressures increase, while designated heritage assets themselves are protected through legislation, development which affects the setting and views of heritage assets will become increasingly likely.
- The historic environment is essential to townscape and urban character. There is a need to protect the unique and valued character of places in Hillingdon.
- Climate change will drive a need for increased energy efficiency standards in the existing building stock.

Likely evolution without the Local Plan

- Designated heritage assets will be protected through legislation but development which affects heritage assets' setting will increase as development pressures grow. Without local plan policies, new development will not be managed effectively to mitigate against harmful impacts, nor are they likely to be enhanced. Non-statutory heritage assets may also be more vulnerable.
- Without strong policies to protect heritage assets and to control design the unique and valued townscape character of Hillingdon's places could be eroded.
- Without careful design many energy efficiency interventions in historic buildings could harm heritage significance.

3.9 Air quality

Baseline

Air pollution is recognised as having a substantial impact on health, leading to a shortening of life expectancy for thousands of people across the UK every year. A recent report commissioned by the Greater London Authority (GLA)[19] found that there are approximately 9,400 premature deaths from exposure to particulate matter (PM) and nitrogen dioxide (NO2) in London. As noted in the Mayor of London's Environment Strategy[20], these health impacts fall disproportionally on the most disadvantaged communities affecting the poorest, the youngest, the oldest, those with pre-existing health conditions and those from minority ethnic groups the most.

Both medical research and the World Health Organisation (WHO) do not define safe levels of air pollution that pose no harm to the population, meaning that reductions in pollution will be of benefit wherever they occur in the borough, however the areas with the most at-risk population will be benefit the most from a reduction in pollution.

The "Hillingdon Guide for Public Health Directors" report produced by the GLA[21] quantifies the impact of air pollution on the residents of the borough in terms of mortality impacts, for which the Institute of Occupational Medicine has estimated that the total burden of fine particle exposure of the Borough's population is equivalent to 154 deaths annually. A subsequent report by King's College provides a broadly similar estimate, 125 equivalent attributable deaths, corresponding to 1,788 lost life years, for 2010. The King's report also provides estimates for deaths linked to NO2 exposure of between 110 and 262 deaths and 1,579 and 3,768 life years lost annually. From this it can be concluded that air pollution has a

[19] Air Quality in London 2016 - 2020 | London City Hall
[20] London Environment Strategy | London City Hall
[21] Hillingdon Guide for Public Health Directors

significant role on mortality in Hillingdon. The report also states that the effects are not limited to deaths and that on-going illnesses arising from exposure are also a significant issue.

Air pollution plays a role in many of the major health challenges of our day, and has been linked to cancer, asthma, stroke and heart disease, diabetes, obesity, and changes linked to dementia. Neither the concentration limits set by government, nor the World Health Organization's air quality guidelines, define levels of exposure that are entirely safe for the whole population[22].

The Hillingdon Health and Wellbeing Strategy identifies respiratory disease as the third highest cause of death in the borough. It contributes to at least 15% of hospital admissions and cost approximately £10m to the health service in Hillingdon annually, with additional costs of an estimated £5.7m in working days lost. Poor air quality is thought to contribute to a sizable proportion of acute exacerbations of asthma and Chronic Obstructive Pulmonary Disease (COPD). Respiratory disease disproportionately affects people of lower socio-economic status due to lifestyle and environmental factors. The number of residents with COPD is expected to increase to 10,799 by 2030.

Taken together, this information demonstrates that there is a pressing need to improve air quality in Hillingdon so that public exposure to harmful concentrations of pollution can be avoided and the health of people protected.

Measures to improve air quality can be combined with other local objectives too, such as the improvement and provision of green infrastructure, as this too plays a role in improving the quality of our air.

In 2003, in accordance with the duties for local air quality management as defined in the Environment Act Part IV, the Council declared an Air Quality Management Area (AQMA) over the bottom two thirds of the borough, for nitrogen dioxide (NO2). This covered all the areas that were above the legislative limits set for health. This is shown in Figure 27 below.

[22] 2016 report from the Royal Colleges of Physicians and of Paediatrics and Child Health.

Figure 27. Air Quality Management Area in Hillingdon

This was followed in 2004 by the development of an Air Quality Action Plan (AQAP)[23]. This set out the local measures to be implemented in working towards achievement of the relevant air quality objectives.

Since this time the Plan has set in place a significant number of measures to improve air quality. For example, all schools in Hillingdon now have travel plans; there are more dedicated cycle and walking paths to help encourage active travel; new developments are required to produce air quality assessments and include mitigation to reduce their impact on pollution levels; residents and people working in the borough are able to sign up to a free pollution episode alert service; pilot projects have been undertaken in regards to the use of green infrastructure to protect vulnerable receptors from pollution, and there is now borough-wide enforcement against idling vehicles.

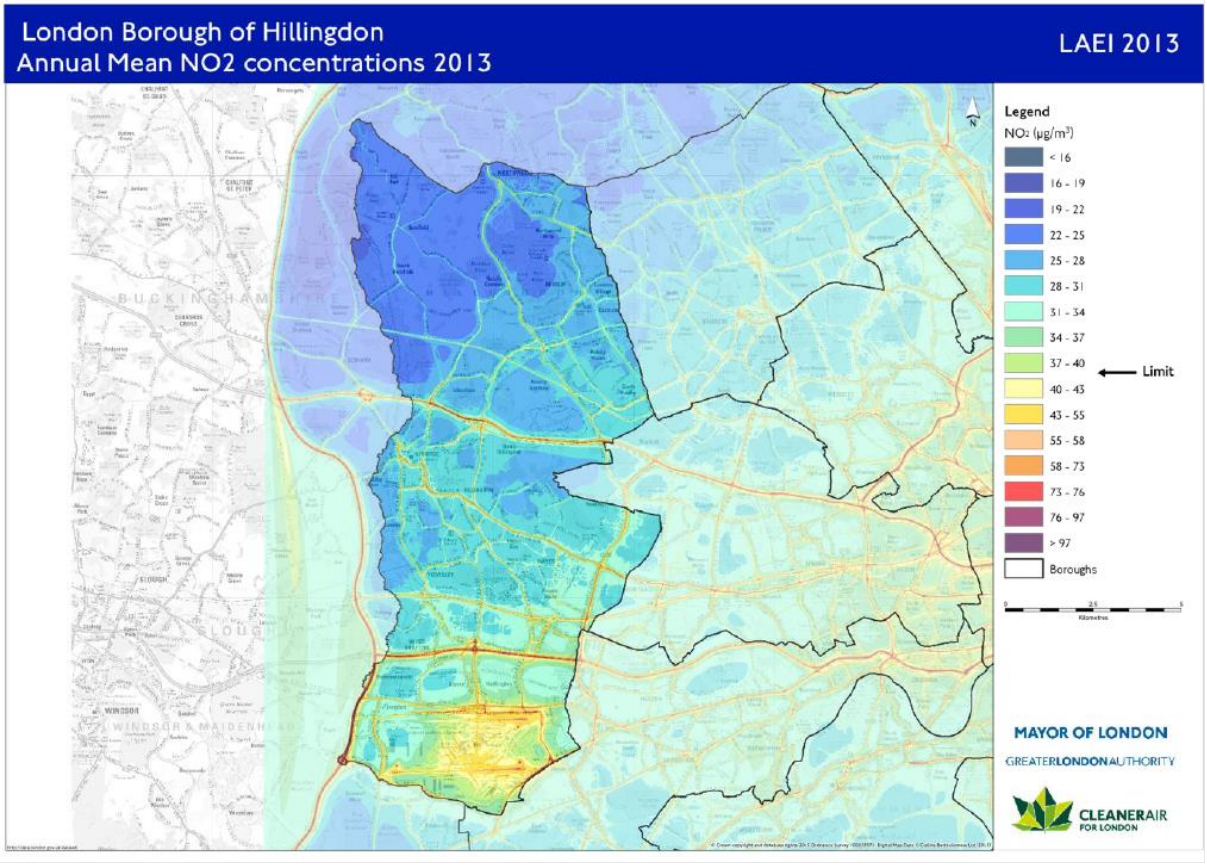
[23] Air - Hillingdon Council (hillingdon-air.info)

Also, from a regional perspective, there has been the introduction of the London-wide ultra low emission zone (ULEZ), the use of cleaner technologies for buses and taxis, and guidance for local authorities has been produced both for reducing emissions from construction sites and through planning guidance for new developments.

Despite this, there are areas in the Borough where pollution levels remain above the legislative air quality limits set to protect human health, and so further action is needed. Data from air quality monitoring stations across the UK, confirmed by those within Hillingdon, demonstrate that despite improvements of the vehicle fleet, pollution levels have remained more or less static and show few signs of a substantial reduction. Evidence from the increased use of diesel vehicles and non-compliance with vehicle emission standards is now accepted as being a major cause for the lack of sufficient improvement in air pollution in urban areas.

It can be seen from the map below (Figure 28) that annual mean nitrogen dioxide levels in 2013 exceeded the limit values. PM10 and PM2.5 concentrations in the borough in 2013 were towards the lower end across the borough (Figure 29 and Figure 30). This situation persists to the present day and is forecast to extend beyond this.

Figure 28. Hillingdon Annual Mean NO2 concentrations in 2013



Updated maps for particulate matter (PM) indicate that Hillingdon is meeting current objectives (for PM_{10} and $PM_{2.5}$). As with nitrogen dioxide, the highest concentrations are associated with the major road network. To a large extent, measures that are beneficial for NO_2 may be expected to also reduce PM concentrations.

Figure 29. Hillingdon Annual Mean PM10 concentrations in 2013

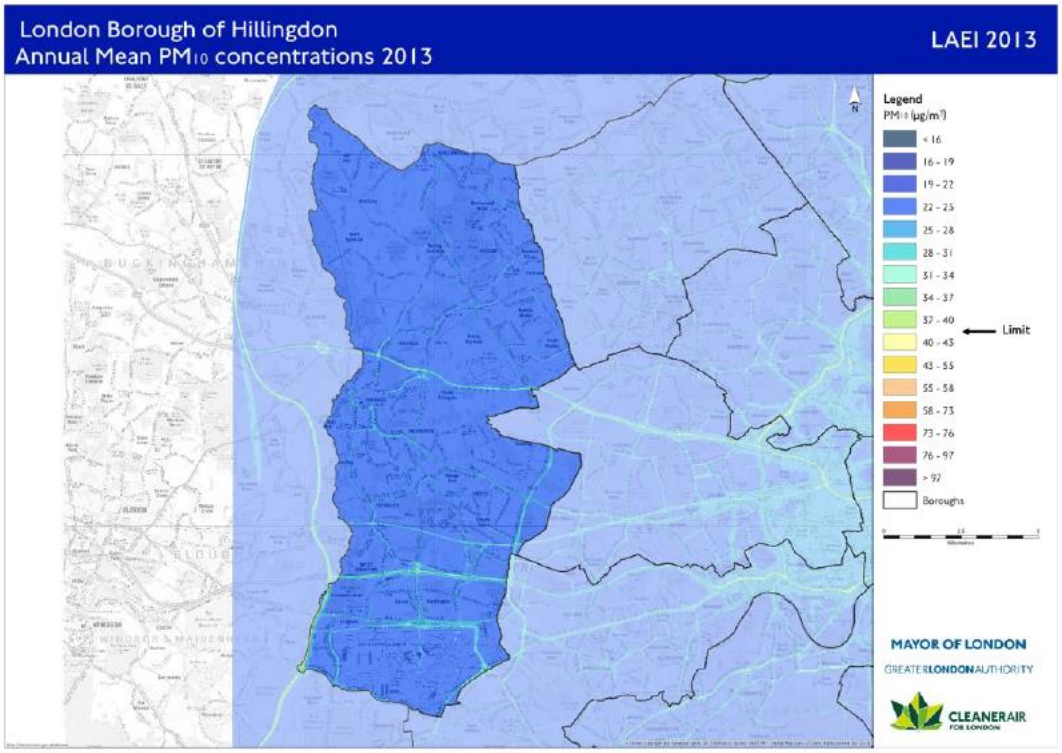
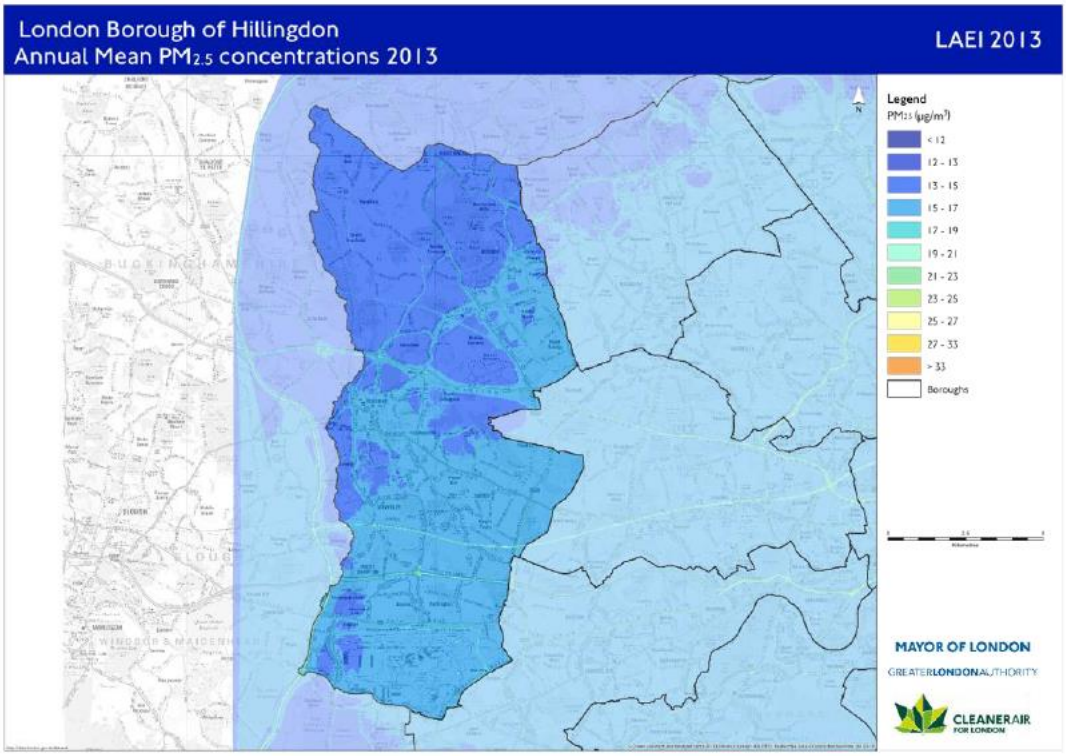


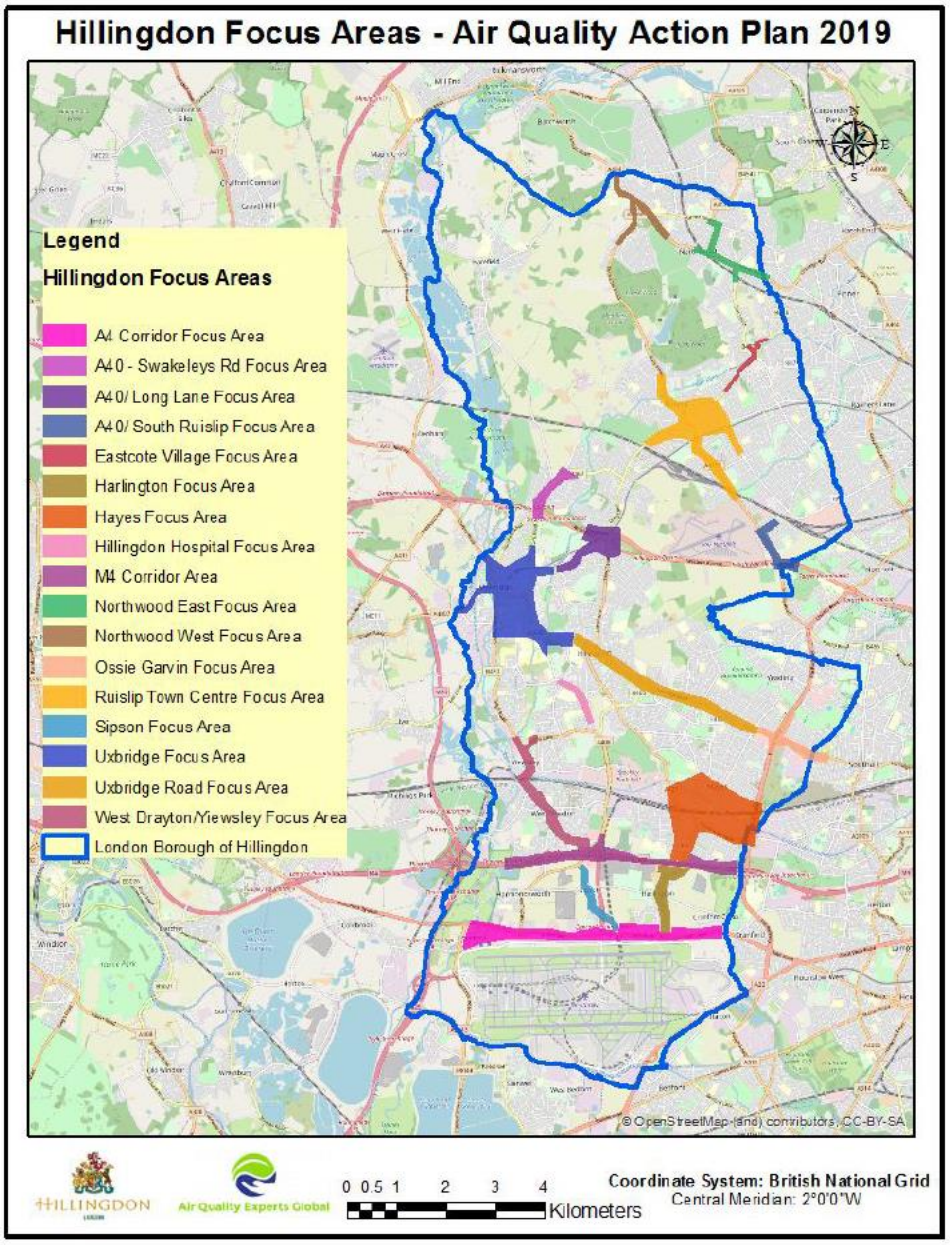
Figure 30. Hillingdon Annual Mean PM2.5 concentrations in 2013



Air quality legislation requires compliance with air quality limits to be met as soon as possible. In order to prioritise action the GLA introduced the concept of AQ Focus Areas across London. The Focus Areas are described as areas where the risk of exceeding

pollution limits is high and there is relevant public exposure. In Hillingdon the Focus areas are identified in the Figure 31 below.

Figure 31. Hillingdon Air Quality Focus Areas



Ground level ozone is another pollutant for which concentrations are at times high enough to impact upon human health and which causes summer smogs during hot, sunny periods. However, formation of ozone can take place over several hours or days and may have arisen from emissions many hundreds, or even thousands of kilometres away. For this reason ozone is not considered to be a 'local' pollutant.

Sources of pollution

The original AQAP indicated that the major sources of NOx6 and PM2.5 emissions within the borough were associated with the operation of Heathrow Airport and with road vehicles on the busy road network throughout the borough. This remains the case today, although other sources such as energy sources, the operation of construction sites, can create significant local emissions sources.

The GLA has provided updated information for each borough on the major sources of pollutant emissions. This includes a detailed breakdown in terms of types of road vehicles e.g. diesel cars, petrol cars, buses and other sources such as domestic and commercial heating, industrial processes and emissions arising from construction sites. These are shown in Figure 32 below.

Emissions at Heathrow Airport

Heathrow operation generates a substantial portion of NOx emissions in Hillingdon, around 50%, of those released within the borough boundary. Whilst not all of the released emissions will necessarily contribute to NO2 levels within the borough itself (for example, emissions from aircraft at higher elevation as they leave the borough boundary and beyond) the airport and airport related traffic on surrounding roads are clearly significant sources of pollution.

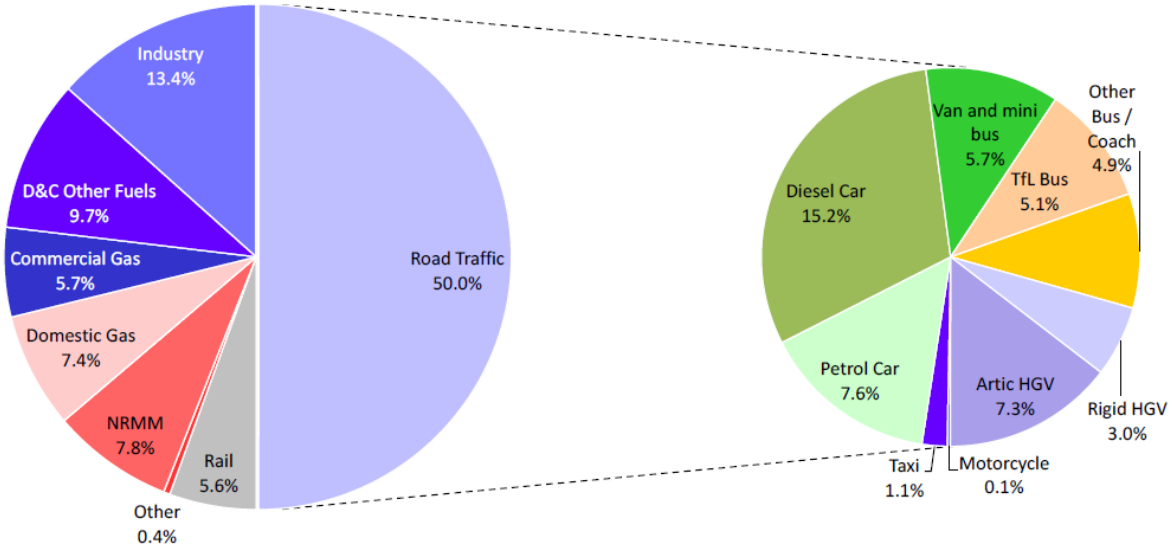
Road vehicle and public transport emissions

Road vehicle emissions contribute significantly to the pollution in the borough. These arise from trips made by residents and businesses (including Heathrow-related traffic) within the borough plus a significant proportion from trips made on the strategic road network which includes traffic passing through the borough. The chart below identifies different vehicle types and their contribution to the emissions associated with road vehicles in the borough. Just over half of traffic emissions are associated with vans, heavy goods vehicles and buses, whilst just under half come from cars, including taxis.

Other emissions

Outside of the Heathrow Airport associated emissions and road traffic emissions, there is a significant proportion of NOx arising from industry, domestic and commercial use of gas and other fuels, non-road mobile machinery, and rail. These sources tend to be more dispersed across the borough and, whilst they add to background concentrations, do not dictate the pattern of limit value exceedance to the same extent as Heathrow Airport and road traffic.

Figure 32. Main sources of air pollution in Hillingdon



Notes: D&C = domestic and commercial, NRMM = non-road mobile machinery such as cranes and diesel generators.

Monitoring

The Council has provided annual reports on monitoring in the borough since the original action plan was introduced. These reports are available on the Council's website.

There are 11 automatic continuous monitoring sites in Hillingdon. All monitor concentrations of NO2, 9 monitor concentrations of fine particles, 2 monitor ozone and 1 monitors carbon monoxide. There are a further 39 sites across the borough where NO2 concentrations are monitored using diffusion tubes (relatively inexpensive passive sampling devices that provide information on long-term average concentrations). Sites are classified as being either roadside or background, providing information on exposure of both those in areas where pollutant concentrations are highest and those living away from major pollutant sources.

Summary

Pollution within the borough arises from several different sources as shown here. These vary in their impact across the borough:

- The operation of Heathrow Airport and strategic roads such as M4, dominate in the south;
- Congested traffic contributes significantly in the more urbanised areas;
- There is potential for more localised impacts arising from point sources;
- There is also transboundary pollution brought in from other boroughs, other parts of the UK and internationally. This is especially the case for particulate matter which can travel large distances.

Sustainability issues

- Two thirds of the borough have been designated an Air Quality Management Area (AQMA) since 2003 due to high levels of nitrogen dioxide. This covered all the areas that were above the legislative limits for health. Despite measures to improve on this, pollution levels in parts of the borough, particularly close to Heathrow, remain above legislative air quality limits.
- No level of air pollution however is considered to be healthy and efforts need to be made to reduce levels across the borough.
- Updated maps for particulate matter (PM) indicate that Hillingdon is meeting current objectives (for PM10 and PM2.5), however, efforts should be made to reduce this further. As with nitrogen dioxide, the highest concentrations are associated with the major road network. To a large extent, measures that are beneficial for NO2 may be expected to also reduce PM concentrations.
- The major sources of NOx6 and PM2.5 emissions within the borough are associated with the operation of Heathrow Airport and with road vehicles on the busy road network throughout the borough. Other significant emissions arise from industry, domestic and commercial use of gas and other fuels, non-road mobile machinery, and rail. These sources tend to be more dispersed across the borough.

Likely evolution without the Local Plan

- Although the London Plan has introduced new policy (including Air Quality Focus Areas) to help improve air quality, local implementation is required so that benefits are not undermined. This will require local planning policies among broader strategies put in place by regional and national bodies.
- Increasing economic growth and development will lead to an increase in emissions, as will the associated rise in private vehicle usage.
- Investment in and promotion of public transport infrastructure, walking and cycling routes and renewable energy sources will be needed at a local level.

3.10 Climate change mitigation

Baseline

The world's climate is changing due to increased levels of gases such as carbon dioxide in the atmosphere. These 'greenhouse' gases occur naturally in the atmosphere, trapping heat that comes from the sun like the glass in a greenhouse. The 'greenhouse effect' is a natural occurrence and without it the Earth would be over 30 degrees cooler and uninhabitable. However, due to human activities such as the burning of fossil fuels (e.g. oil, gas and coal) and deforestation, concentrations of greenhouse gases in the atmosphere are rising and making the natural greenhouse effect more pronounced, trapping more of the sun's heat and resulting in a rise in the earth's average temperature.

Various gases contribute to amplifying the natural greenhouse effect. However, the main contributor to the global warming that we are now seeing is carbon dioxide. Scientific research has demonstrated that carbon dioxide levels are higher than at any time in the past 650,000 years, and this has resulted in gradual warming of the world's climate.

Uncontrolled climate change will lead to higher global temperatures, rising sea levels and more extreme, unpredictable weather conditions across the world. These events and their knock-on effects, such as drought and its impact on food production, or the flooding of coastal areas where many people live, will continue to put hundreds of millions of lives at risk.

The Environment Agency's 2020 State of the Environment Report presents some of the consequences of climate change including impacts on water resources, flooding, the health of humans as well as wildlife, changing weather patterns and rising temperatures.

London may be particularly sensitive to increases in temperature in the future because of the Urbant Heat Island effect. London is also particularly at risk from flooding as a result of climate change. London is also one of the driest (in terms of its local water resources) major capital cities in the world which means that climate change could reduce the amount of water available per head of population and with a growing population, demand for water is also expected to increase. Climate change impacts on buildings and the built environment, water resources, transport, parks and gardens, air pollution and tourism, are all exacerbated in London compared to other UK cities and regions. A population density twice that of most other UK cities exerts strong pressures upon these resources, systems and sectors.

In Hillingdon specifically, there are likely to be problems related to flooding, either from rivers, sewers, or surface water as well as overheating in the hotter summer, which may require the evacuation of vulnerable people, such as the elderly and children. Water shortages across London are also a likely reality as summers continue to get hotter and drier. The health of residents and communities in Hillingdon will also likely be affected.

The above highlights the importance of mitigating and adapting to climate change. Mitigation can mean the enhancement of 'sinks' (natural storage via trees and vegetation for example) that store and process harmful carbon emissions, as well as the reduction of carbon emissions.

Hillingdon's contribution to climate change

Total energy consumption has increased in the borough across domestic, industrial, commercial and transport uses between 2010 and 2021 (see Table 21). Greenhouse gas emissions in Hillingdon have however fallen for domestic and industrial and commercial uses in recent years. (see 0).

Energy Consumption and greenhouse gas emissions

Table 21. Energy consumption statistics for Hillingdon and London, 2015 and 2017

Total Energy Consumption (GWh)	Domestic	Non-domestic	Total
Hillingdon 2021	417.6	1080.1	1497.6
London Average 2021	375.4	675.2	1050.6
Hillingdon 2010	443	1140	1584
London Average 2010	408.1	856	1264

Source: Gov statistics[24]

Hillingdon has made positive steps in reducing carbon dioxide emissions over the last 15 years, as shown in 0 below. However, emissions per capita are still above the London average (see 0). Total emissions have been steadily decreasing, however they are still higher than the London average (see 0 and 0). This is in a large part likely to be due to transport related emissions from Heathrow.

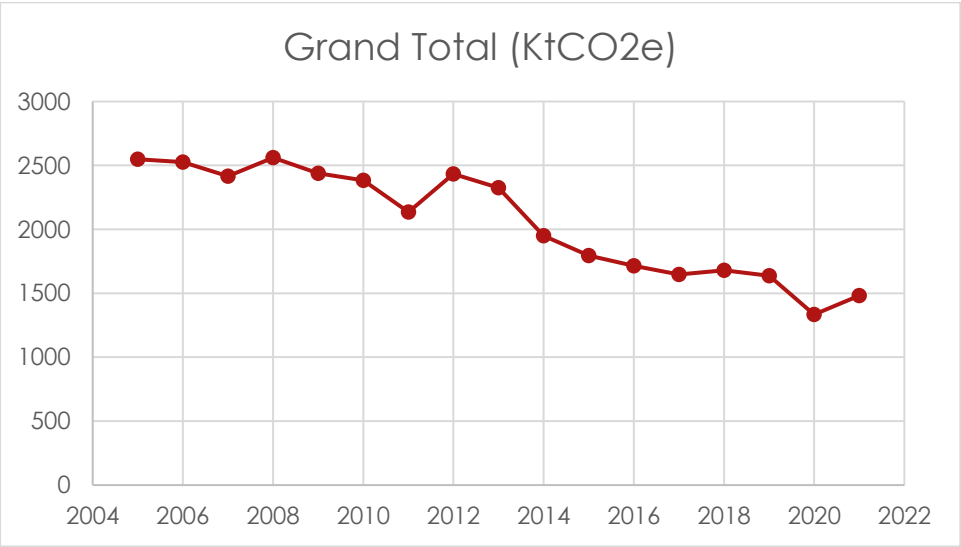
[24] Total final energy consumption at regional and local authority level 2005 to 2017 - GOV.UK (www.gov.uk)

Table 22. Carbon emissions from different sources in Hillingdon between 2005 and 2021

	Industry Total (Kt CO2e)	Commercial Total (KtCO2e)	Public Sector Total (KtCO2e)	Domestic Total (KtCO2e)	Transport Total (KtCO2e)	Land Use, Land Use Change and Forestry Total (KtCO2e)	Agriculture Total (KtCO2e)	Waste Management Total (KtCO2e)	Grand Total (KtCO2e)
2005	182.7	779.8	150.7	606.1	680.5	1.1	10.3	137.6	2548.8
2006	178	790.6	147.1	606.4	661.8	1.1	10.6	129.7	2525.3
2007	168.3	726.5	134.2	588.7	656.4	0.8	10.9	130.1	2415.9
2008	179.9	817.9	149.7	592.9	637.2	0.5	10.7	171.6	2560.4
2009	150.4	679.9	126.2	540	625.2	0.2	9.8	305.4	2437.1
2010	149.2	668	124.5	580.7	616.9	0	9.5	234.1	2382.9
2011	123.6	542.6	97.4	510.6	591.7	-0.2	8.8	260.8	2135.3
2012	145.7	692.9	121.2	550.9	605.4	-0.3	9.4	308.9	2434.1
2013	143.8	650.8	114.9	542.2	613.2	-0.7	8.8	253.4	2326.4
2014	123.3	479.3	86.4	457.8	625.2	-0.7	8.1	171.1	1950.5
2015	108.6	380.7	68.9	442.3	620.9	-0.9	7.8	165.8	1794.1
2016	103.3	313.9	60.1	425.9	655	-0.9	7.3	150.8	1715.4
2017	122.8	244	82.7	395.9	650.9	-1	9	143.4	1647.7
2018	133.8	193.2	76.4	388.6	665.4	-0.8	10.6	212.3	1679.5
2019	125.6	159.4	81.2	376.4	665.2	-0.8	10.3	219	1636.3
2020	127.6	143.8	83	369.5	484.7	-0.9	10.5	115.7	1333.9
2021	140.5	188.3	90.6	385.1	532.1	-1	8.3	137	1480.9

Source: Government Statistics

Figure 33. Hillingdon - Total carbon emissions from all sources



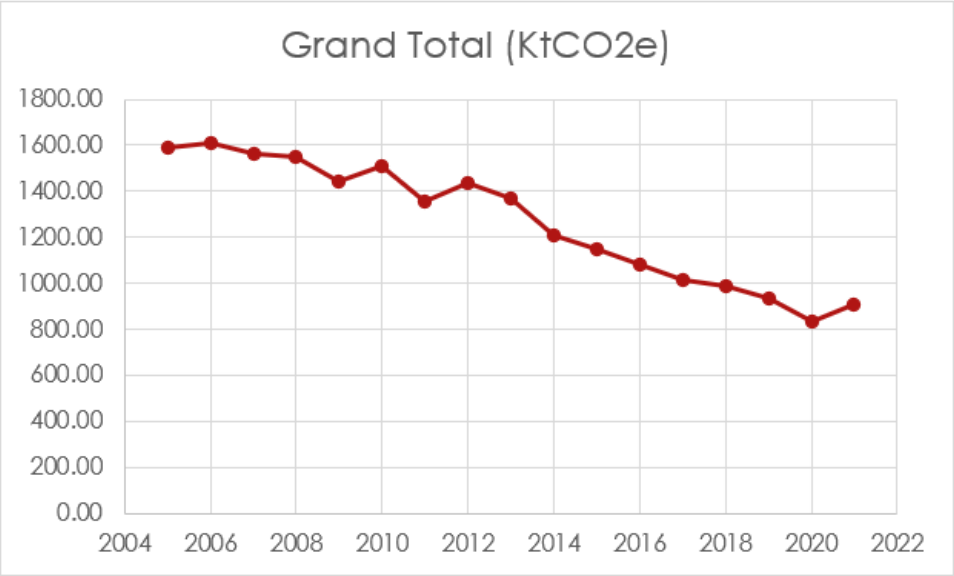
Source: Government Statistics

Table 23. Greenhouse gas emissions statistics for Hillingdon and London, 2015 and 2021

	Industry Total (Kt CO2e)	Commercial Total (KtCO2e)	Public Sector Total (KtCO2e)	Domestic Total (KtCO2e)	Transport Total (KtCO2e)	Land Use, Land Use Change and Forestry Total (KtCO2e)	Agriculture Total (KtCO2e)	Waste Management Total (KtCO2e)	London Average Total (KtCO2e)
2005	110.30	434.63	107.85	534.56	309.54	1.51	2.25	86.53	1587.16
2006	110.89	471.15	108.38	531.49	302.39	1.43	2.26	81.82	1609.82
2007	108.12	453.14	101.68	517.07	296.43	1.36	2.09	80.44	1560.32
2008	104.08	458.77	101.92	521.45	276.21	1.26	2.20	83.61	1549.50
2009	92.93	407.22	91.46	475.34	268.98	1.15	2.02	105.82	1444.92
2010	99.45	431.93	98.45	510.66	271.25	1.07	2.14	93.20	1508.15
2011	88.73	384.98	86.98	449.05	265.08	0.99	1.99	76.98	1354.79
2012	93.16	424.43	95.06	483.19	261.06	0.92	2.13	76.57	1436.52
2013	88.57	394.87	91.60	471.52	258.44	0.92	2.03	63.65	1371.58
2014	79.09	329.86	78.22	397.76	258.47	0.74	1.88	62.63	1208.66
2015	73.68	289.37	72.03	382.62	260.56	0.64	1.87	66.73	1147.51
2016	65.70	254.09	61.10	365.62	264.35	0.66	1.78	65.96	1079.27
2017	72.54	200.27	72.67	339.77	262.81	0.59	1.84	61.98	1012.47
2018	99.28	132.23	100.31	332.64	260.52	0.65	2.82	56.33	984.78
2019	93.34	116.32	91.54	319.60	253.44	0.62	2.54	58.76	936.14
2020	81.35	93.29	83.41	313.61	208.97	0.58	2.40	48.99	832.60
2021	92.81	112.33	91.75	326.28	222.00	0.55	3.10	58.70	907.52

Source: Government Statistics

Figure 34. London average - total carbon emissions from all sources



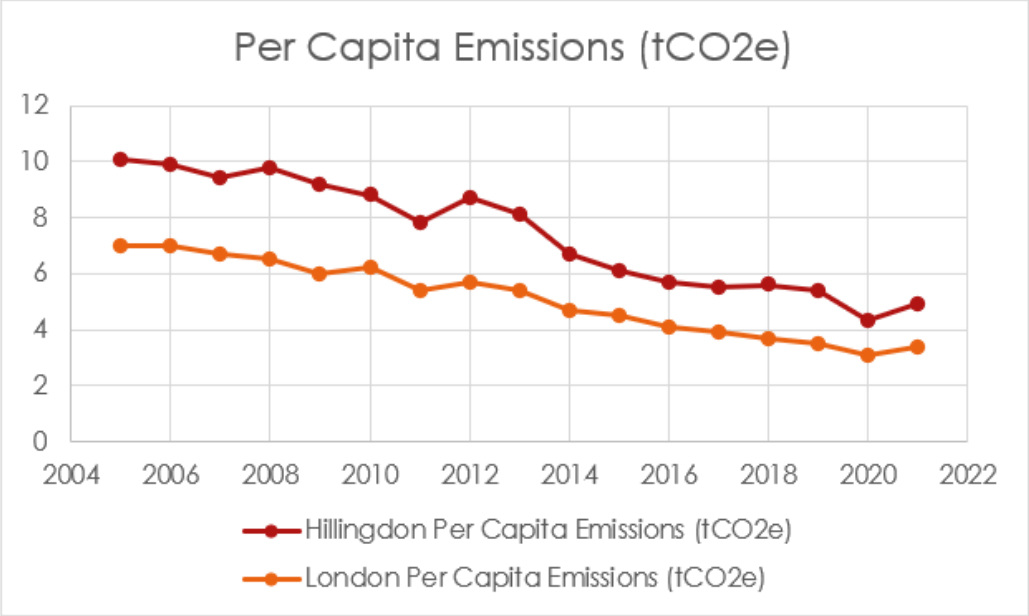
Source: Government Statistics

Table 24. Carbon emissions per capita in Hillingdon and London between 2005 and 2021

	Per Capita Emissions (tCO2e) **Hillingdon**	Per Capita Emissions (tCO2e) London
2005	10.1	7.0
2006	9.9	7.0
2007	9.4	6.7
2008	9.8	6.5
2009	9.2	6.0
2010	8.8	6.2
2011	7.8	5.4
2012	8.7	5.7
2013	8.1	5.4
2014	6.7	4.7
2015	6.1	4.5
2016	5.7	4.1
2017	5.5	3.9
2018	5.6	3.7
2019	5.4	3.5
2020	4.3	3.1
2021	4.9	3.4

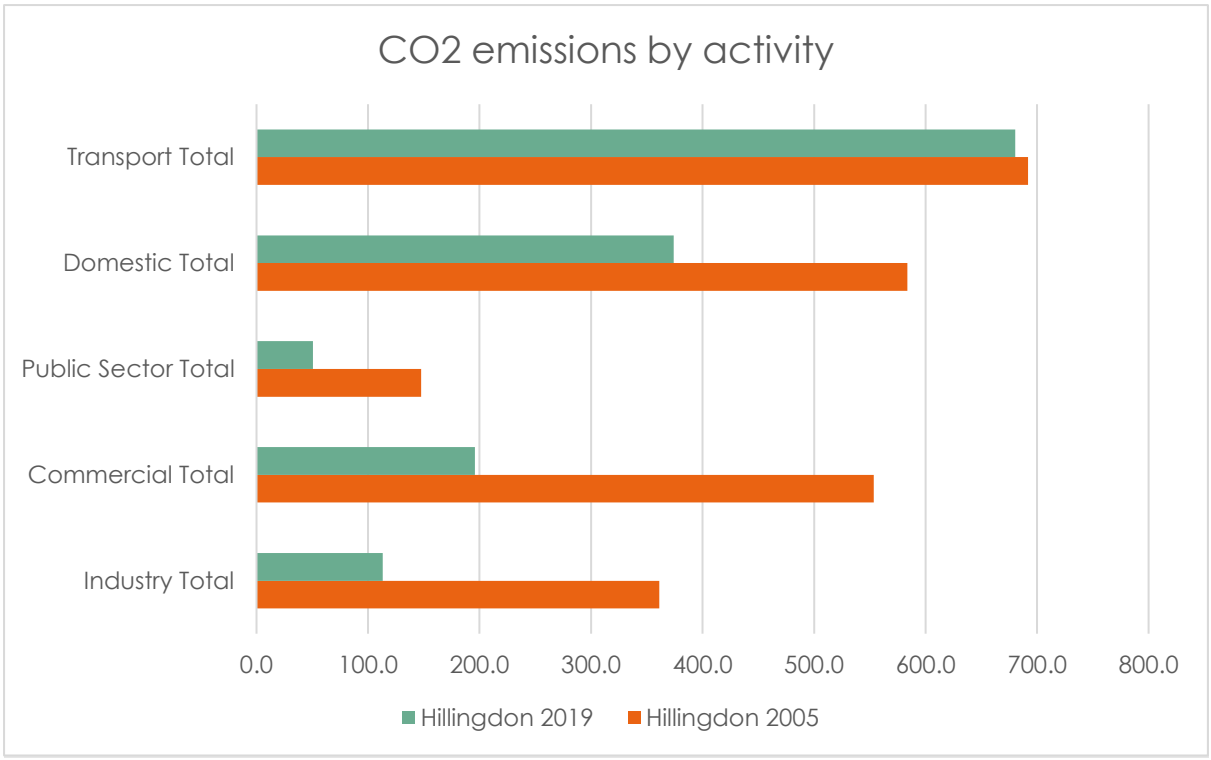
Source: Government Statistics

Figure 35. Carbon dioxide emissions per capita in Hillingdon and across London– 2005-2021



When comparing carbon dioxide emissions from different sources, Figure 36 below shows that emissions have reduced significantly across many areas, except for transport related emissions which have stayed broadly the same since 2005. Emissions from Heathrow Airport and other transport and road related activities are highest in the borough, however domestic emissions are also particularly high.

Figure 36. Comparison of sources of carbon dioxide emissions in Hillingdon between 2005 and 2019



The Council has prepared a Strategic Climate Action Plan (2021) to respond to climate change[25].

Sustainability issues

- Hillingdon's carbon dioxide emissions have been reduced over the last 15 years, however they are still above the London average.
- Transport related carbon emissions have stayed roughly the same over the last 15 years while emissions from other sources have been reduced.
- The highest sources of carbon emissions in the borough are transport related, however emissions from domestic sources are also very high.
- National and regional carbon dioxide emission reduction targets have not yet been met.

Likely evolution without the Local Plan

Carbon dioxide emissions are expected to continue to increase with economic growth and increased development. Transport and existing buildings are also significant contributors to emissions in the borough, and additional local policy measures will be needed to make effective reductions in emissions. Improving the energy efficiency of existing building stock and reducing private car usage will be important.

Local planning policies can play a part in ensuring appropriate mitigation measures are utilised and developments are designed to reduce energy consumption. They can also encourage more sustainable patterns and locations of development to minimise emissions arising through transport.

3.11 Climate change adaptation

Baseline

Climate change adaptation is about being prepared for the effects of climate change which are already in the pipeline. The climate is changing and the consequences are already being felt. Action now is about ensuring they do not get worse, but it is also an unfortunate truth that impacts are already upon us.

Over recent decades the UK's annual average temperature has warmed at nearly 0.3ºC per decade. Heatwaves are now more common and intense across the country and cold extremes significantly less likely. Sea levels are over 5 cm higher than in 1990 and continue to rise. A signal of climate change is also being detected in some extreme heavy rainfall events.

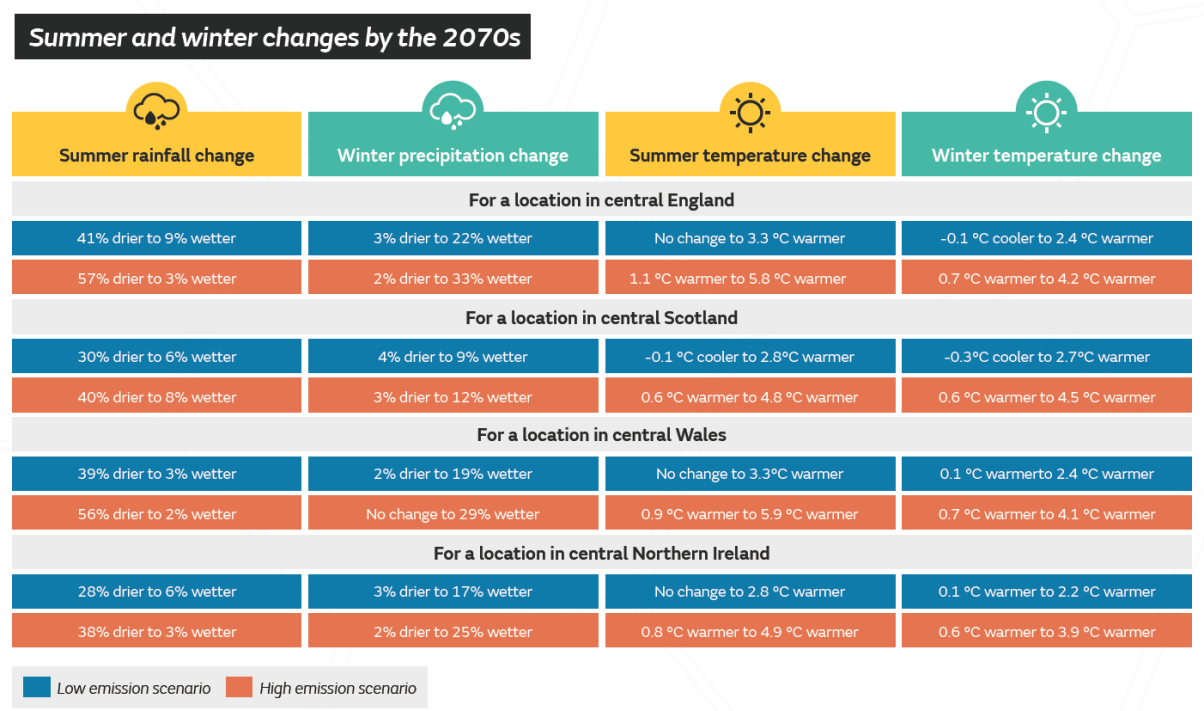
Further changes in the UK's climate is expected by mid-century. Changes in UK climate by 2050 are largely insensitive to the trajectory of global emissions over the next few decades. The UK is more likely to experience warmer and wetter winters in future together with hotter and drier summers under both high and low emission scenarios. Rainfall and temperature

25 https://modgov.hillingdon.gov.uk/documents/s52335/05%20-%20REPORT%20Cabinet%20Report%20July%202021_Climate%20Action%20Plan_Final.pdf

extremes will become more intense and frequent. Sea levels will continue to rise around the UK.

The most recent climate projections for the UK provided by the Met Office (UKCP18[26]) are illustrated in Figure 37 below, with data provided for both high and low emission scenarios. The data shows that a low emission scenario will still result in significant climate change for the UK, and so while mitigation is still a necessity to reduce the effects of climate change, climate change adaptation will be necessary regardless.

Figure 37. Climate projections by 2070s from low emissions and high emissions scenarios (UKCP18)



Given the known effects of climate change on the UK, there are some key areas which climate change adaptation in London should be concerned with:

- rising temperatures (exacerbated by the Urban Heat Island effect in London)
- flooding
- impacts on water resources
- poor air quality
- degradation of wildlife habitats
- damage to infrastructure not designed for high temperatures.

A summary of the key effects of climate change on London is provided by the 'London's Warming: The Impacts of Climate Change on London' summary report produced by the then Mayor of London in 2013. This is shown in Table 25overleaf.

[26] UK Climate Projections (UKCP) - Met Office

Table 25. Key projected effects of climate change in London

Issue	Main Points
Higher temperatures	• There is likely to be an increase in the demand for cooling and thus for electricity in summer. • Against this, there will be a reduction in demand for winter heating providing a financial advantage for bill payers and reducing incidences of fuel poverty.
Flooding	• Increased risk of flooding is expected for many parts of London. • More frequent intense winter rainfalls are expected to increase the likelihood of flooding by rivers and flash flooding when urban drainage systems become overwhelmed. • Rising sea levels and possible increased winter storminess would require more closures of the Thames Barrier.
Water Resources	• Water demand will be heightened during hot, dry summers. • Longer summers with higher temperatures and lower rainfall will reduce soil moisture and the chance to replenish groundwater supplies. • River flows are likely to be lower in summer and higher in winter. • Lower river flows in summer will raise water temperatures and aggravate water quality problems in the Thames and its tributaries, especially following heavy summer storms.
Health	• Poorer air quality poses health problems for asthmatics as well as causing damage to plants and buildings. • Higher levels of mortality related to summer heat stress are expected. • Higher winter temperatures would be likely to lead to a reduction in winter cold spell related mortality.
Biodiversity	• Warmer weather would favour conditions for increased competition from exotic species as well as the spread of disease and pests, affecting both fauna and flora. • Rising sea levels will threaten rare saltmarsh habitats. • Increased summer drought will cause stress to wetlands and beech woodland. • Earlier springs, longer frost-free seasons and reduced snowfall could affect dates of bird egg-laying, as well as the emergence, first flowering and health of leafing or flowering plants.
Built Environment	• The building industry will be likely to benefit from an increased number of available construction days. • Subsidence will worsen as clay soils dry out in summer and autumn. • Alternate wetting of clays in winter and drying of clays in summer may cause increased ground movement resulting in increased potential for damage to underground pipes and cables. • Increased temperatures will reduce comfort of occupants in domestic, commercial and public buildings, and could lead to business disruption.
Transport	• London's transport system and ancillary services are vulnerable to disruption from flooding and other extreme weather events that are expected to increase in frequency and intensity. • Increased temperatures on the London Underground, exacerbated by the urban heat island effect, will lead to passenger discomfort. • Hotter summers may damage elements of transport infrastructure, causing buckled rails and rutted roads, with their attendant disruption and repair costs. • Higher temperatures will lead to a reduction in cold weather-related disruption.
Business and Finance	• The London insurance industry could be exposed to an increased volume of claims from wind storms and flood events. • Lower income households may find it more difficult to access adequate insurance cover in the face of increased flood risk • The risk management of potential climate change impacts may provide significant opportunities for London businesses.
Tourism	• Increased temperatures could attract more visitors to London, benefiting the tourist sector. • Leisure and recreational facilities and tourist attractions will need to be able to cope with climate change by providing a pleasant environment for visitors. • High temperatures could lead to residents leaving London in search of a more comfortable environment on holidays or breaks.
Lifestyle	• Outdoor living may be more favoured, although some members of society may be less able to take advantage of this due to lack of facilities locally, fear of crime or other forms of social exclusion. • Green and open spaces will be used more intensively.

Source: London's Warming: The Impacts of Climate Change on London, 2013

Sustainability issues

- An increase in extreme weather events such as heat waves and floods, generally higher temperatures and increased cases of flood risk and drought are inevitable, even with significant reductions in carbon emissions. However, the degree of change can still be reduced.
- The Urban Heat Island effect will increase temperatures further in London.
- The changing climate will cause health impacts for residents and also place higher demands on the energy network to provide energy for cooling.

Likely evolution without the Local Plan

- Climate change effects will continue including increased temperatures, potential droughts, severe storms and flooding. The degree to which climate change impacts are felt locally may be greater without additional policy measures from the Local Plan.
- Without local planning policies, new development may not be located in the best areas to minimise the impact of climate change on the population. Local policies can also more effectively ensure new development in different parts of the borough is resilient to the effects of climate change.

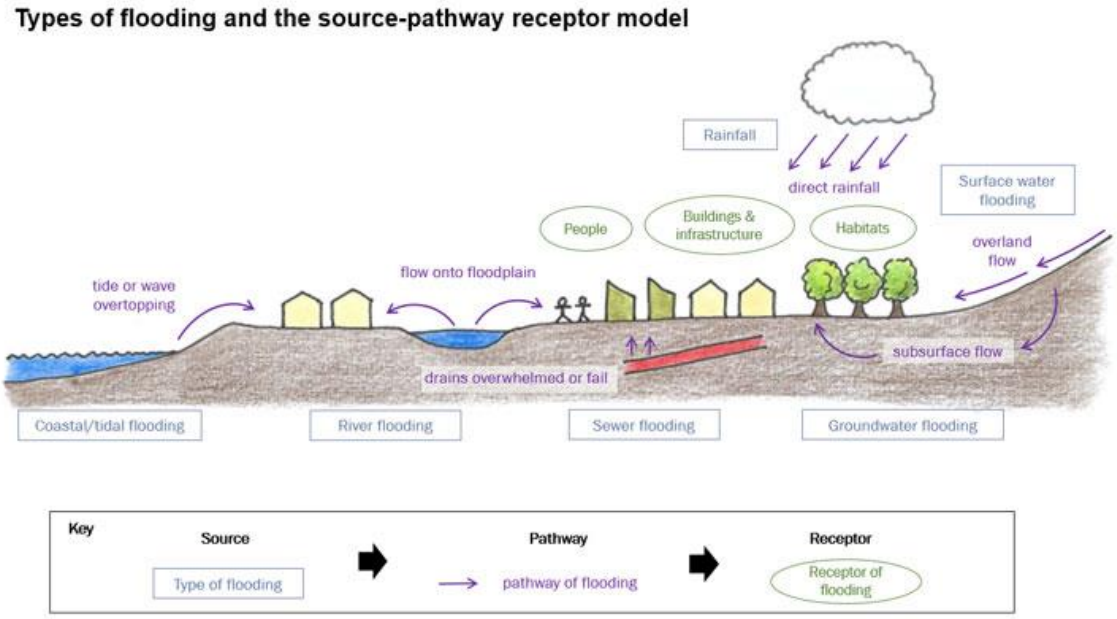
3.12 Flood and water management

The West London Strategic Flood Risk Assessment[27], which encompasses the boroughs of Hillingdon, Harrow, Hounslow, Barnet, Brent and Ealing, identifies the main sources of flooding in Hillingdon. It indicates that the borough is at risk of the following types of flooding:

- Fluvial
- Groundwater
- Sewer
- Surface Water
- Ordinary watercourse
- Artificial Sources

[27] West London Strategic Flood Risk Assessment - West London SFRA

Figure 38. Types of flooding – Pluvial, surface water, groundwater and fluvial flooding



Further information about the types of flood risk can be found here: Types of flood risk | Local Government Association and Flood risk and flood risk management | Local Government Association

Fluvial flooding

Fluvial flooding, occurs when heavy or prolonged periods of rain causes a river to exceed its capacity. Floodplains and adjacent open spaces in the natural environment help manage and convey overbank flooding. However, urbanisation can exacerbate the effects of fluvial flooding due to increased impermeable surfaces and development within the flood plain. The increase in runoff rates results in greater volumes of water entering rivers and an increase in water flows. The impact of fluvial flooding on urban environments can be severe, causing significant social, economic and environmental impacts.

The probability of fluvial flooding across the sub-region is broken down into flood zone categories by the Environment Agency. These Flood Zones are split into categories 1 – 3, with Flood Zone 1 having the lowest risk of fluvial flooding and Flood Zone 3 having the highest risk of fluvial flooding. Flood Zone 3 is further broken down into Flood Zone 3a (high probability) and Flood Zone 3b (functional floodplain). Flood Zone 3b comprises land where water from rivers or the sea has to flow or be stored in times of flood. Functional floodplain will normally comprise:

- land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or
- land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding).

Flood Zone 2 is land defined as having a medium probability of flooding between 1% and 0.1% annual probability of river flooding. The EA's Flood Zones do not take into

consideration flood defences, therefore detailed hydraulic modelling may offer a better representation of actual flood risk.

Further information about flood risk in Hillingdon can be found reviewing the flood risk evidence and assessments found here: **www.hillingdon.gov.uk/flooding**

The River Crane, River Pinn and River Colne are the primary sources of fluvial flooding in Hillingdon. In addition to the main rivers and tributaries, there are also a number of lost rivers that may contribute to fluvial and surface water flooding. Thames Water is currently conducting a project to rediscover and map these former watercourses.

The Crane is a lowland river system that flows through West London (rising in Harrow as the Yeading Brook). The catchment also includes the Portlane Brook and man-made rivers connected to the Colne.

The River Colne is one of the major rivers in the Borough. The River Colne forms the western boundary in the north of the Borough. The Colne is often referred to in two sections; the Upper Colne and the Lower Colne system differentiated by Denham Weir. The Upper Colne is predominantly rural land use and the Lower Colne can be considered urban. The Colne is a very complex river system with large reservoirs used to store potable supply water for Greater London. The Frays River and the River Pinn form some of the major tributaries into the River Colne.

Other rivers which contribute to fluvial flooding in the borough include Longford River, Upper Duke of Northumberland's River, the River Chess. The Grand Union Canal also runs through the borough from north to south.

Surface water flooding

Surface water, or pluvialflooding is the term used to describe flooding which occurs when intense, often short duration rainfall is unable to soak/infiltrate into the ground or is above the capacity of the drainage systems and therefore runs over the surface of the land causing flooding. It is most likely to occur when soils are saturated so that they cannot infiltrate any additional water or in urban areas where buildings, tarmac and concrete prevent water infiltrating into the ground.

The excess water can pond (collect) in low points, and result in the development of flow pathways often along roads but also through built up areas and open spaces. This type of flooding is usually short lived and associated with heavy downpours of rain. Surface water flooding can occur in rural and urban areas, but usually causes more damage and disruption in the latter. Flood pathways include the land and water features over which floodwater flows. These pathways can include drainage channels, rail and road cuttings.

Pluvial flooding can also occur when high intensity storms (often with a short duration) are sometimes unable to infiltrate into the ground or be drained by formal drainage systems since the capacity of the collection systems is not large enough to convey runoff to the underground pipe systems (which in turn might already be surcharging). The pathway for pluvial flooding can include blockage, restriction of flows (elevated grounds), overflows of the drainage system and failure of sluice outfalls and pump systems.

Developments that include significant impermeable surfaces, such as roads and car parks may increase the volume and rate of surface water runoff.

Urban areas which are close to artificial drainage systems, or located at the bottom of hillsides, in valley bottoms and hollows, may be more prone to surface water flooding. This may especially be the case in areas that are down slope of land that has a high runoff potential including impermeable areas and compacted ground.

Surface water flooding can affect all forms of the built environment, including: residential, commercial and industrial properties; Infrastructure, such as roads and railways, telecommunication systems and sewer systems; Agriculture; Amenity and recreation facilities.

Flooding from land is usually short-lived and may only last as long as the rainfall event. However occasionally flooding may persist in low-lying areas where ponding occurs. Due to the typically short duration, flooding from land tends not to have as serious consequences as other forms of flooding, such as flooding from rivers or the sea however it can still cause significant damage and disruption on a local scale.

As stated in the West London SFRA[28], most of the ground coverage in the sub-area is impermeable as it is heavily urbanised. This can compound surface water flooding as the runoff rate is greater on impermeable grounds compared to permeable areas. In addition, less water can drain away through infiltration, which increases the surface water flood risk in these areas.

Ordinary watercourse flooding

Ordinary Watercourse flooding in urban areas usually occurs under similar circumstances to surface water flooding but is associated with non-main river watercourses or ditches. It occurs when small open channels and culverted urban watercourses (which receive most of their flow from the urban areas) can either exceed their capacity and cause localised flooding of an area or can be obstructed (through debris or illegal obstruction) and cause localised out of bank flooding of nearby low lying areas. Extreme weather conditions can also lead to ordinary watercourses exceeding their capacity, overwhelming systems and causing water to flow onto land. Ordinary watercourses can however also react in a similar way to main rivers as they are often smaller tributaries of main rivers.

The consequence of Ordinary Watercourse flooding is dependent upon the degree of hazard generated by the flood water (as specified within the DEFRA/Environment Agency research on Flood Risks to People - FD2321/TR2) and what the receptor is (e.g. the consequence of a hospital flooding is greater than that of a commercial retailer). The hazard Ordinary Watercourses pose is a relationship between the depth and velocity of water, which, in Ordinary Watercourses, depends on:

- Constrictions in the channel causing flood water to backup;
- The magnitude of flood flows;
- The size, shape and slope of the channel;
- The width and roughness of the adjacent floodplain; and

[28] West London Strategic Flood Risk Assessment - West London SFRA

- The types of structures that span the channel.

The hazard posed by floodwater is proportional to the depth of water, the velocity of flow and the speed of onset of flooding. Hazardous flows can pose a significant risk to exposed people, property and infrastructure.

Whilst low hazard flows are less of a risk to life (shallow, slow moving/still water), they can disrupt communities, require significant post-flood clean-up and can cause costly and possibly permanent structural damage to property.

Watercourses in Hillingdon are shown in Table 26 below.

Table 26. Watercourses in Hillingdon

Watercourse	Classification	Responsibility under the FWMA
River Colne	Main River	Environment Agency
Newyears Green Bourne	Main River	Environment Agency
Mad Bess Brook	Main River	Environment Agency
Cannon Brook	Main River	Environment Agency
Joel Street Farm Ditch	Main River	Environment Agency
Ickenham Stream	Main River	Environment Agency
Yeading Brook	Main River	Environment Agency
River Crane	Main River	Environment Agency
Frogs Ditch	Main River	Environment Agency
Longford River	Main River	Environment Agency
River Pinn	Main River	Environment Agency
Duke of Northumberland River	Main River	Environment Agency
Grand Union Canal, Paddington Arm and Slough Arm	Ordinary Watercourse	Canal and Rivers Trust and Hillingdon Council

Groundwater flooding

This occurs when the water level within the groundwater aquifer rises to the surface. In very wet winters these rising water levels may lead to flooding of areas that are normally dry. This can also lead to streams that only flow for part of the year being reactivated. These intermittent streams are typically known as bournes. Water levels below the ground can rise during winter (dependant on rainfall) and fall during drier summer months as water discharges from the saturated ground into nearby watercourses.

A majority of the sub-region (as defined by the West London SFRA) is underlain by Thames Group (also referred to as London Clay) bedrock, a composition of silty clay/mudstone, sandy silts and sandy clayey silts of marine origin. This geological unit generally has a low hydraulic conductivity which means water does not easily move through it. However, because of this characteristic and poor drainage, ponding can occur if London Clay is downhill of aquifer outcrops. Other predominant bedrock geology types are Lambeth Group

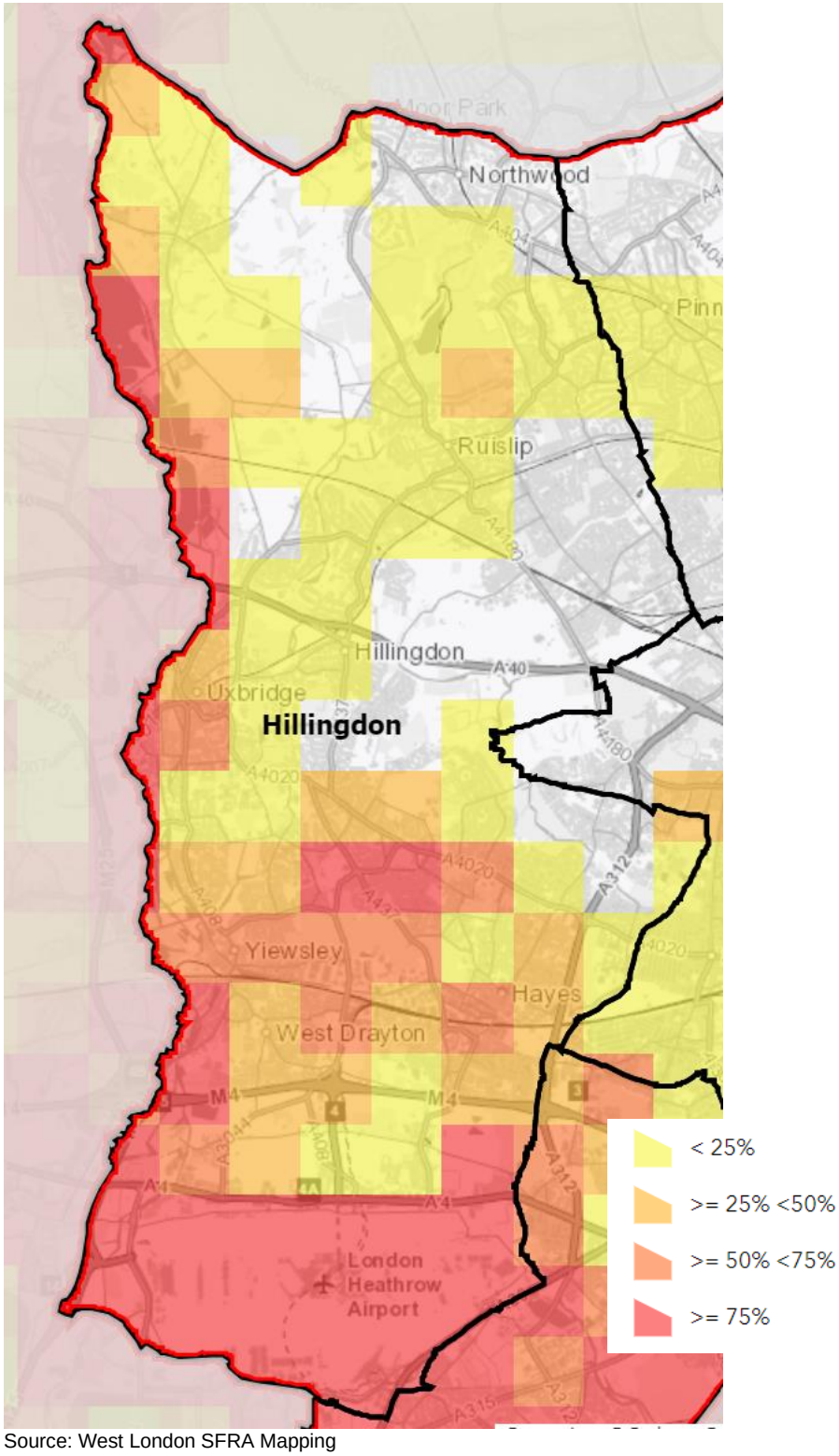
compositions and White Chalk, both of which are predominantly found in the northwest of the sub-region. White Chalk in particular can be prone to groundwater flooding due to its high hydraulic conductivity and low effective porosity, meaning it can become saturated quite quickly due to intense rainfall and recharge the water table. In areas with a high water table, water can move through chalk and out onto the surface. Superficial deposits in the region are predominantly River Terrace Deposits which are comprised of sand and gravel, with lenses of silt, clay or peat.

The main impacts of groundwater flooding are:

- Flooding of basements of buildings below ground level – in the mildest case this may involve seepage of small volumes of water through walls, temporary loss of services etc. In more extreme cases larger volumes may lead to the catastrophic loss of stored items and failure of structural integrity;
- Overflowing of sewers and drains – surcharging of drainage networks can lead to overland flows causing significant but localised damage to property. Sewer surcharging can lead to inundation of property by polluted water. Note: it is complex to separate this flooding from other sources, notably surface water or sewer flooding;
- Flooding of buried services or other assets below ground level – prolonged inundation of buried services can lead to interruption and disruption of supply;
- Inundation of roads, commercial, residential and amenity areas – inundation of grassed areas can be inconvenient; however the inundation of hard-standing areas can lead to structural damage and the disruption of commercial activity. Inundation of agricultural land for long durations can have financial consequences; and
- Flooding of ground floors of buildings above ground level – can be disruptive, and may result in structural damage. The long duration of flooding can outweigh the lead time which would otherwise reduce the overall level of damages.

In general terms groundwater flooding rarely poses a risk to life.

Figure 39. Hillingdon's susceptibility to groundwater flooding 2017



Source: West London SFRA Mapping

The SWMP indicates that areas along the western Borough boundary and the south around Heathrow Airport have the greatest potential to be affected by groundwater flooding within the Borough (illustrated in Figure 39 above). This will change over time.

Sewer flooding

Sewer flooding occurs when the capacity of the underground sewer network is exceeded, resulting the surcharging of water and sewage into the nearby environment (or within internal and external building drainage networks). The discharge of the drainage network into waterways and rivers can also be affected if high water levels in receiving waters obstruct the drainage network outfalls.

Drainage in the sub-region is serviced by Thames Water Utilities Ltd (Thames Water), who provide surface water, foul and combined sewer systems. Modern sewer systems are designed to be separate surface water and foul water systems, typically accommodating up to 1 in 30 year rainfall events. However, sewer system segments across London vary in capacity due to age. Older segments have a smaller capacity and may not be designed to accommodate rainfall events as significant as 1 in 30 year events.

The impact of sewer flooding is usually confined to relatively small localised areas but flooding is associated with blockage or failure of the sewer network, flooding can be rapid and unpredictable. Flood waters from this source are also often contaminated with raw sewage and pose a health risk. The spreading of illness and disease can be a concern to the local population if this form of flooding occurs on a regular basis.

Drainage systems often rely on gravity assisted dendritic systems, which convey water in trunk sewers located at the lower end of the catchment. Failure of these trunk sewers can have serious consequences, which are often exacerbated by topography, as water from surcharged manholes will flow into low-lying urban areas.

The diversion of “natural” watercourses into culverted or piped structures is a historic feature of the London drainage network. Where it has occurred, deliberately or accidentally it can result in a reduced available capacity in the network during rainfall events when the sewers drain the watercourses catchment as well as the formal network. Excess water from these watercourses may flow along unexpected routes at the surface (usually dry and often developed) as its original channel is no longer present and the formal drainage system cannot absorb it.

The risk of flooding from sewers is increasing due to the increasing urbanisation of areas and rising rainfall intensities. Several recent flood events across the country have been attributed to the inability of the drainage network to contain runoff during severe storm events and the occurrence of events which exceed the design capacity of the drainage network may be increasing.

The data provided by Thames Water for use in this SWMP (Table 27 below) shows postcodes where properties are known to have experienced sewer flooding prior to June 2010.

Table 27. Postcode areas in the borough known to have experienced sewer flooding pre-2010

Post Code Sector	2 in 10 external	2 in 10 internal	1 in 10 external	1 in 10 internal	1 in 20 external	1 in 20 internal	Severe	Total Properties
HA2 9	0	0	0	0	3	3	0	6
HA4 0	1	0	1	0	4	0	1	7
HA4 6	1	0	6	2	15	4	7	35
HA4 7	0	0	1	0	2	16	0	19
HA4 8	0	0	0	0	5	1	3	9
HA4 9	1	0	2	0	8	0	1	12
HA5 1	0	0	0	0	0	3	4	7
HA5 2	0	0	1	0	0	8	5	14
HA5 3	0	0	0	0	2	3	0	5
HA6 1	1	0	7	0	6	8	3	25
HA6 2	0	0	0	0	4	7	0	11
HA6 3	0	0	0	0	2	3	0	5

Source: Hillingdon SWMP

Further information about the roles and responsibilities of different organisations in managing flood risk can be found here: [Managing flood risk: roles and responsibilities | Local Government Association]

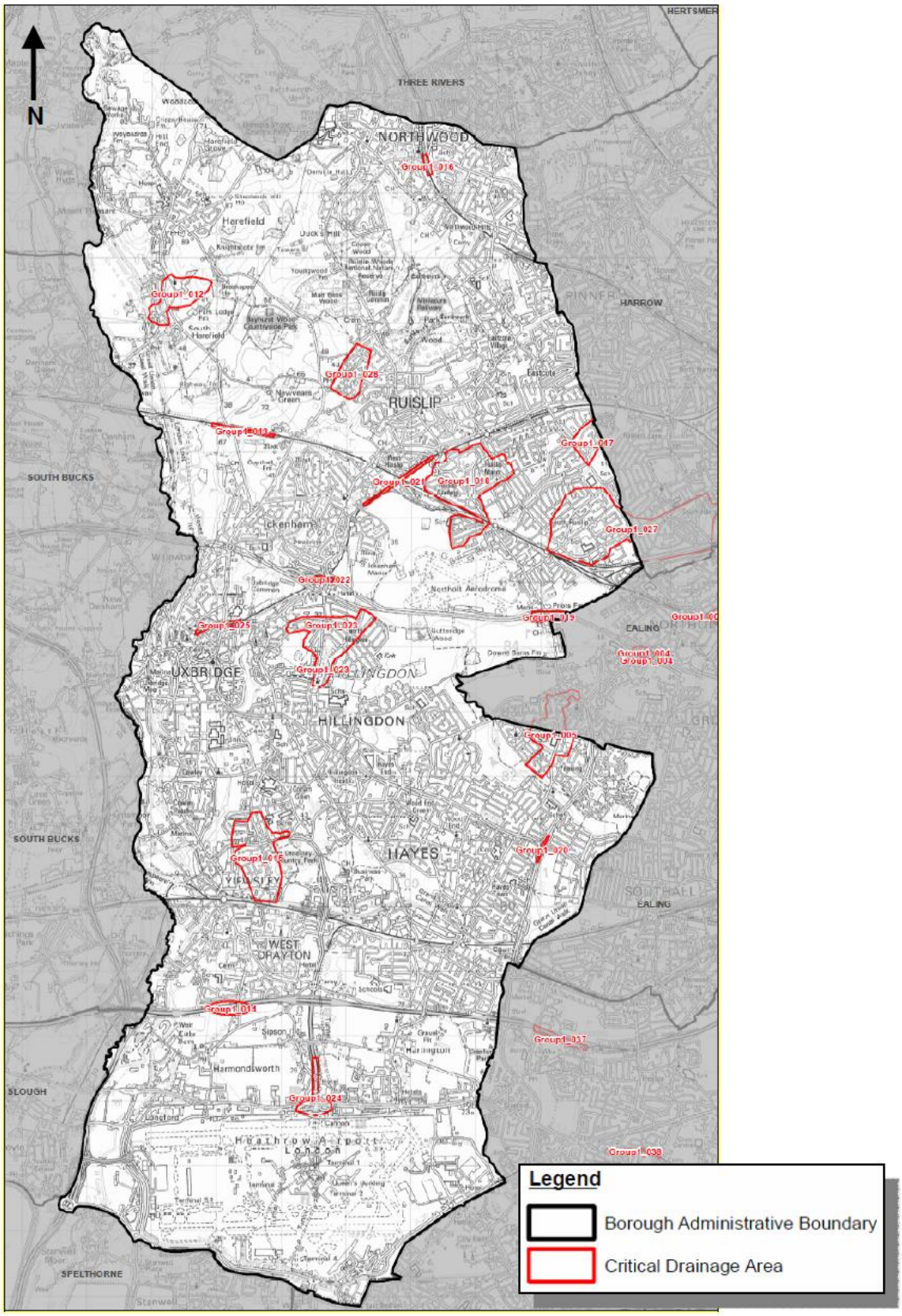
Critical drainage areas

A critical drainage area as defined by the Drain London Tier 2 Technical Specification is “a discrete geographic area (usually a hydrological catchment) where multiple and interlinked sources of flood risk (surface water, groundwater, sewer and/or river) often cause flooding in a Flood Risk Area during severe weather thereby affecting people, property or local infrastructure.” CDAs in Hillingdon are shown in Figure 40.

Within these CDAs, Local Flood Risk Zones have been identified. These are defined as “the actual spatial extent of predicted flooding in a single location. LFRZs are discrete areas of flooding that do not exceed the national criteria for a ‘Flood Risk Area’ but still affect houses, businesses or infrastructure.” Local Flood Risk Zones (LFRZs) across the LB of Hillingdon have been identified based on both the probability and consequence of flooding from the above ‘local’ sources.

Post Code Sector	2 in 10 external	2 in 10 internal	1 in 10 external	1 in 10 internal	1 in 20 external	1 in 20 internal	Severe	Total Properties
UB100	0	0	1	0	2	2	8	13
UB108	1	0	5	0	2	5	0	13
UB109	0	1	5	3	8	11	0	28
UB3 2	0	0	0	0	2	4	0	6
UB3 3	0	0	0	0	1	0	0	1
UB4 8	0	0	0	0	3	1	0	4
UB4 9	0	0	0	0	1	0	0	1
UB7 7	0	0	0	0	10	11	0	21
UB7 8	0	0	0	0	3	3	0	6
UB7 9	0	0	1	0	3	1	0	5
UB8 1	1	2	3	6	0	0	0	12
UB8 2	1	0	2	0	13	4	1	21
UB8 3	0	0	0	0	10	2	0	12
UB9 6	0	0	1	0	0	3	0	4
Total	7	3	36	11	109	103	33	302

Figure 40. Critical Drainage Areas in Hillingdon



Analysis of the number of properties at risk of flooding has been undertaken for the rainfall event with a 1 in 100 probability of occurrence in any given year. A review of the results demonstrate that 29,300 residential properties and 1,300 non-residential properties in the LB of Hillingdon could be at risk of surface water flooding of greater than 0.03m depth (above an assumed 0.1m building threshold) during a 1 in 100 year rainfall event.

A review of these statistics coupled with local knowledge of the study area identifies that the following CDAs, located within Table 28, are at greatest risk of flooding in terms of the number of receptors at risk.

Table 28. Critical Drainage Areas in Hillingdon and the types of development within them at the greatest risk of flooding

CDA ID	Infrastructure		Households		Commercial / Industrial	
	All	> 0.5m Deep	All	> 0.5m Deep	All	> 0.5m Deep
Group1_027	4	1	1290	4	13	0
Group1_018	3	1	921	1	16	0
Group1_015	3	0	593	19	14	0
Group1_005	6	0	565	0	1	0
Group1_023	2	0	376	0	7	0
Group1_028	1	0	353	5	1	0

The majority of surface water flooding within the Borough is as a result of topographical low areas and obstructions to natural overland flowpaths, along with runoff within historical river valleys. Several rail lines are predicted to be at risk due to the elevations of the finished track being lower than the surrounding areas and within cuttings.

The maps on the following website, provided through the work of the West London SFRA, illustrate flood risk from a number of different sources: GIS mapper for sewer, groundwater and artificial flood risk (arcgis.com).

There are ongoing projects to manage the flood risk within some of these CDA's. Details on some of this work can be found here: Flood and Water Management Projects in Hillingdon (arcgis.com)

Buffer Zones

It should be emphasised that increase development near a watercourse, or specifically within 8m of a fluvial watercourse, can increase flood risk on a local and catchment scale. Provision of natural, undeveloped buffer zones can help contribute to natural flood management whilst also allowing access for maintenance and emergency works.

Sustainability issues

- Hillingdon is at risk from the following types of flooding: fluvial, groundwater, sewer, surface water, ordinary watercourses and artificial sources.
- The River Crane and Colne catchments, and their tributaries (including the Yeading Brook and River Pinn) are the primary sources of fluvial flooding in Hillingdon.
- Almost 30,000 residential properties at risk of surface water flooding in Hillingdon.
- Flood risk will increase over time due to the effects of climate change.
- Loss of natural permeable layers through urbanisation will increase flood risk.
- Critical Drainage Areas have been identified across Hillingdon.

Likely evolution without the Local Plan

- Flooding events are likely to increase and the number of properties at risk could increase without local plan policies, in addition to the London Plan and NPPF.
- A Local Plan is required to ensure a sequential, risk-based approach to the location of new development is undertaken.
- Local policies will need to take account of Critical Drainage Areas and include appropriate policies to tackle the loss of natural permeable layers.

3.13 Waste

Baseline

The policy aim in London is to move towards a circular economy, where materials are reused, remanufactured or recycled rather than thrown away. This type of shift could result in significant environmental and economic benefits.

The West London Waste Disposal Authority (WLWA) is the statutory Waste Disposal Authority for six West London boroughs, including Hillingdon. The West London Waste Plan 2015 (WLWP) sets out policy and sites for waste management.

The WLWP states that in 2012 the WLWA and its constituent Boroughs dealt with around 657,000 tonnes of municipal waste. Of this total some 154,000 tonnes was recycled, 90,000 tonnes was composted, and 93,000 tonnes was sent to Materials Recovery Facilities (MRFs) from which waste went on to other routes. Ultimately, 413,000 tonnes were sent either to Energy from Waste (EfW) or to landfill sites in Oxfordshire and Buckinghamshire (just over 80% by rail from the WLWA's transfer stations in Brentford and South Ruislip) (See Table 29).

Table 29. Waste management in the West London Waste Authority Area in 2012

Municipal Solid Waste management	Tonnes	Percentage
Recycling	154,000	23
Composting	90,000	14
Energy from Waste	117,000	18
Landfill	296,000	45
TOTAL	**657,000**	**100**

In Hillingdon specifically, residual household waste per household has increased significantly since 2015/16, however the percentage of household waste being reused, recycled or composted has fallen by almost 8%, as shown in Table 30. Whilst it remains above the London average for household recycling as shown in there has still been a downward trend in recycling rates in recent years.

Table 30. Waste management in Hillingdon from 2015 - 2019

Year	Authority	Authority type	Residual household waste per household (kg/household) (Ex NI191)	Percentage of household waste sent for reuse, recycling or composting (Ex NI192)	Percentage of municipal waste sent to landfill (Ex NI193)	Collected household waste per person (kg) (Ex BVPI 84a)
2015-16	Hillingdon LB	Collection	495.6	44.1%	-	323.2
2016-17	Hillingdon LB	Collection	502.5	43.4%	-	321.5
2017-18	Hillingdon LB	Collection	520.3	40.0%	-	316.6
2018-19	Hillingdon LB	Collection	567.6	36.7%	:	327.4

Residual household waste per household has increased in the last few years. The percentage of household waste being reused, recycled or composted has fallen slightly since 2018/19, however it is the second highest rate when compared to other West London boroughs (see Table 31).

Table 31. Comparison of waste management in different boroughs in West London from 2018 - 2021

Authority	Percentage of household waste sent for reuse, recycling or composting (Ex NI192)			
	2018-19	2019-20	2020-21	Difference 2019-20 to 20-21
Brent LB	0.376	36.5%	34.3%	-2.2%
Ealing LB	0.549	47.7%	48.7%	1.0%
Harrow LB	0.416	41.7%	34.2%	-7.5%
Hillingdon LB	0.428	39.9%	41.9%	2.0%
Hounslow LB	0.303	31.2%	35.9%	4.7%
Richmond	0.422	42.5%	38.9%	-3.6%

From 2009/10 increasing quantities of waste, not recycled or composted, have been diverted from landfill by sending it to Energy from Waste Facilities. The WLWA has a contract to send residual waste to the Lakeside Energy from Waste plant near Slough, until 2034/35. This contract has an annual tonnage of 25,000 tonnes until 2014/15 when for one year the tonnage increases to 45,000 tonnes. The following year (2015/16) the tonnage increases to 90,000 tonnes and remains at that level until the final year of the contract. In addition, materials sent to certain Material Recovery Facilities in the Plan area are then sent to recycling, Energy from Waste facilities and landfill respectively. The dominance of landfill has been broken by use of other management routes so that less than 50% of waste managed by the WLWA was landfilled in 2012.

The WLWP addresses the remainder of this waste and the provisions of the London Plan. This sets a target for London 'to manage as much of London's waste within London as practical, working towards managing the equivalent of 100% of London's waste within London by 2026.' To achieve this, each borough has been given a share of London's total municipal and commercial waste to manage (the apportionment) for which it must identify sufficient and suitable potential sites for the development of waste management facilities.

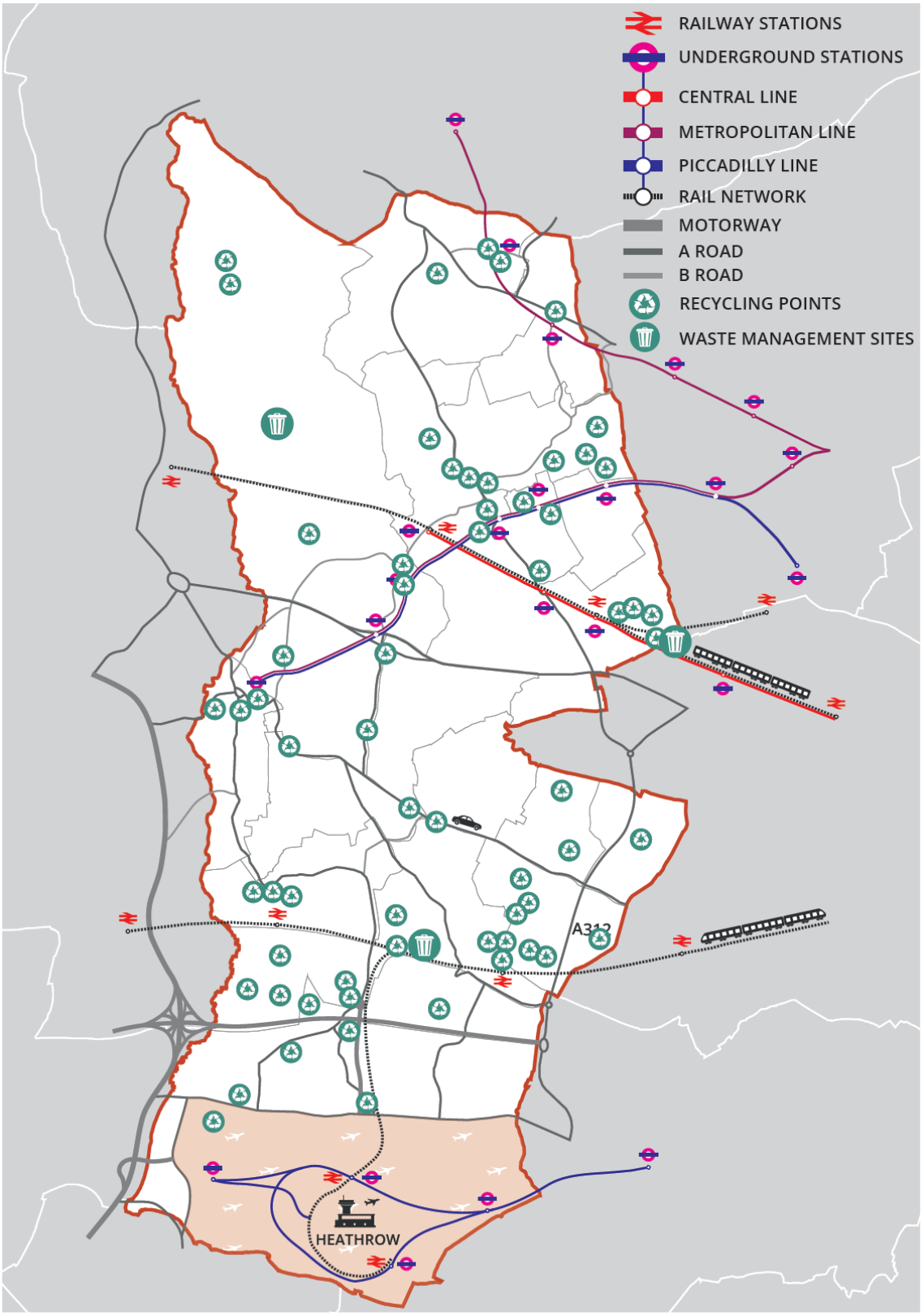
The WLWP notes that without any additional capacity coming online, West London will be unable to meet the apportionment targets contained in the London Plan. The WLWP identifies 25 existing waste management sites in Hillingdon to be protected. Of these sites, it also identifies one which has potential for capacity expansion by redevelopment – the Rigby Lane Waste Transfer Station[29].

The London Plan outlines targets to increase recycling in municipal waste to 65% by 2030 and meet or exceed targets of 95% reuse/recycling/recovery of construction and demolition waste now. The plan also forecasts that by 2021 per annum the borough will be producing 101,000 tonnes of household waste and 144,000 tonnes of commercial and industrial waste and by 2036, 131,000 tonnes of household waste and 173,000 tonnes of commercial waste.

[29] West London Waste Plan

Waste management and recycling points in Hillingdon and close to the boundary are shown in Figure 41.

Figure 41. Waste management and recycling points in Hillingdon (Source: Hillingdon Strategic Infrastructure Plan 2017).



Fly tipping

Hillingdon is below average for London Boroughs for the number of fly tipping incidents reported in 2022/23 (ranking 11th lowest of the 32 boroughs), however fly tipping is an ongoing problem in Hillingdon, with 5,517 incidents reported in that year[30]. While fly tipping generally falls outside of the remit town planning, provision of adequate waste and recycling facilities on site and crime prevention through urban design measures can reduce offending.

Sustainability issues

- In Hillingdon, residual household waste per household has increased significantly since 2015/16, however the percentage of household waste being reused, recycled or composted has fallen by almost 8%.
- Waste from all sources will continue to increase as the population grows and development pressures increase, however, reuse, recycling and recovery rates need to increase at the same or higher rate.
- It is essential that an appropriate number of waste management facilities are developed to deal with an increase population and to deliver growth in the borough.
- The aim in London is to move towards a circular economy, where materials are reused, remanufactured or recycled rather than thrown away. This kind of shift could result in significant environmental and economic benefits.
- The London Plan outlines targets to increase recycling in municipal waste to 65% by 2030 and meet or exceed targets of 95% reuse/recycling/recovery of construction and demolition waste now.
- Identified waste sites should be protected from redevelopment to other uses to maintain capacity in accordance with the West London Waste Plan.
- Fly tipping is an ongoing problem which can be reduced with better waste storage facilities in buildings and crime prevention through urban design measures.

Likely evolution without the Local Plan

- In West London, six London boroughs agreed to co-operate to produce a single waste plan for their combined area that now forms part of each of their respective Local Plans. It also forms part of the development plan for the Old Oak and Park Royal Development Corporation (OPDC). This was adopted as part of the Development Plan in 2015 and details how the authorities will deal with waste generated in its area over the next 15 years. There is a commitment between the local authorities to commence a review of this document and ensure ongoing implementation of national and regional policies. However, the Local Plan remains an important document for ensuring reductions in waste arisings, safeguarding waste management facilities and ensuring operations are undertaken efficiently.

[30] Defra, Local authority fly-tipping enforcement league table data 2021-22 to 2022-23

3.14 Soil and geology

Baseline

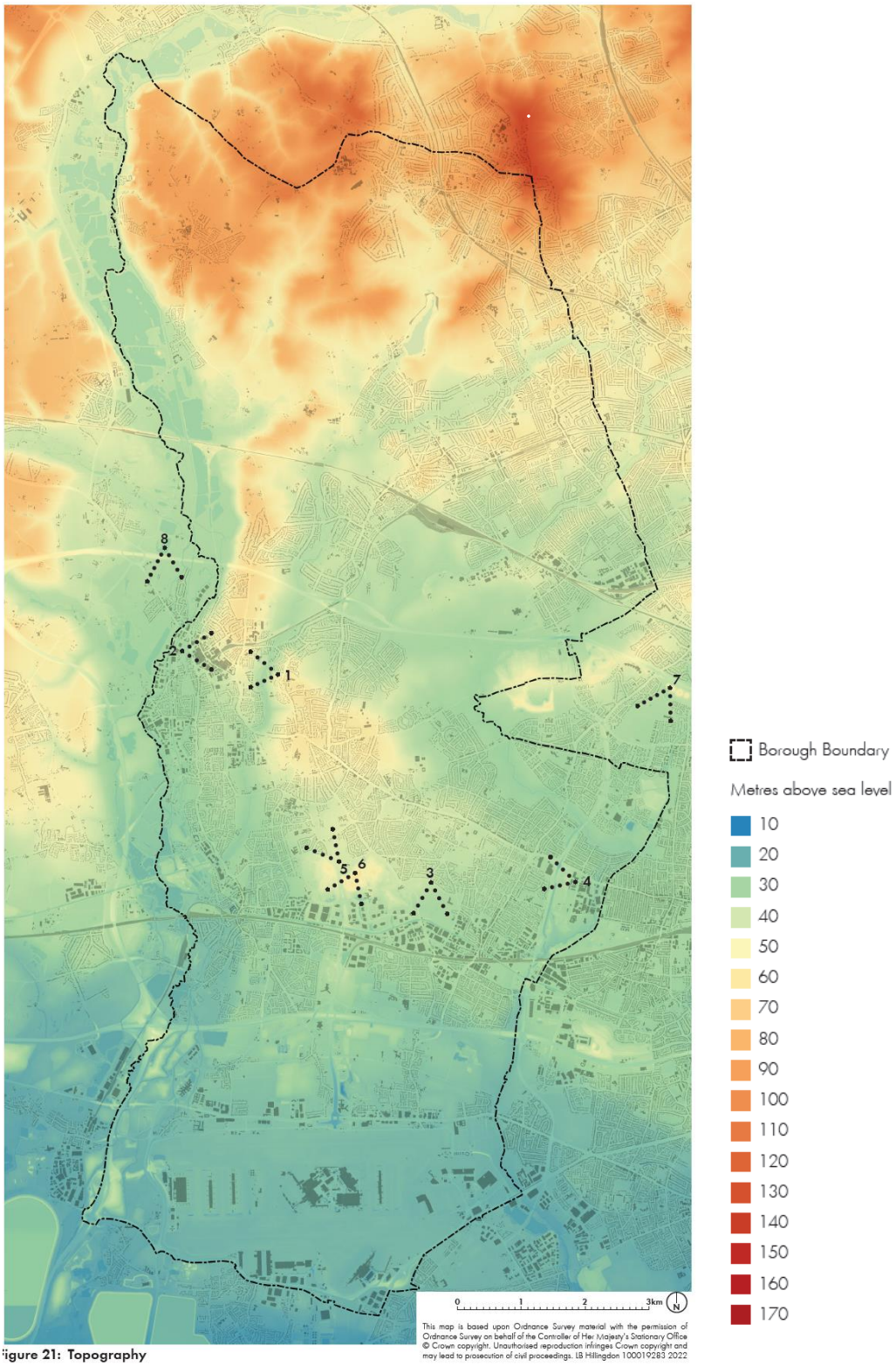
Topography

As shown in the satellite imagery below (Figure 42), the highest elevations within the Borough are in the north of the Borough, between Harefield, Ruislip and Northwood with areas of high ground located near Hillingdon.

The lowest elevations are located in the south of the Borough near Heathrow Airport. Hillingdon is a predominantly flat and relatively low lying landscape.

Along the western boundary of the borough is the River Colne Valley. As such the north west of the borough supports some attractive views westwards out across the Colne Valley.

Figure 42. Hillingdon topography



igure 21: Topography
Source: Hillingdon Townscape Character Study 2023

Further information can be found in Hillingdon's Townscape Character Study 2023.

Soil, geology and hydrogeology

The dominant solid geology for the LB of Hillingdon is the London Clay Formation[31]. Outcrops of the Lambeth group are located within river valleys near the north of the borough (around Ruislip and Northwood). Along the western boundary of the borough some areas of Chalk are located near the River Colne.

Drift deposits overlying the solid geology in the southern area of the district consist of pockets of Langley Silt (sandy clay and silt 'brick earth') overlying the River Terraced Deposits (mainly gravels), which have been locally excavated creating lakes and reservoirs where they have not been backfilled and areas of in-filled ground where they have.

Within the vicinity of West Drayton, Langley silt is found to extensively overlie the gravels. In the northern part of the district (Hillingdon and further north) drift deposits are limited to pockets of Glacial Sand and Gravel, which includes undifferentiated head (the glacial deposits will consist mainly of sands and gravels and the head deposits of sandy clay and silt). Along the line of river channels, alluvial deposits are located and in some areas the underlying solid formation has been exposed.

There is also a presence of shrinkable clay soils. Figure 43 and 0 show the geological composition of Hillingdon.

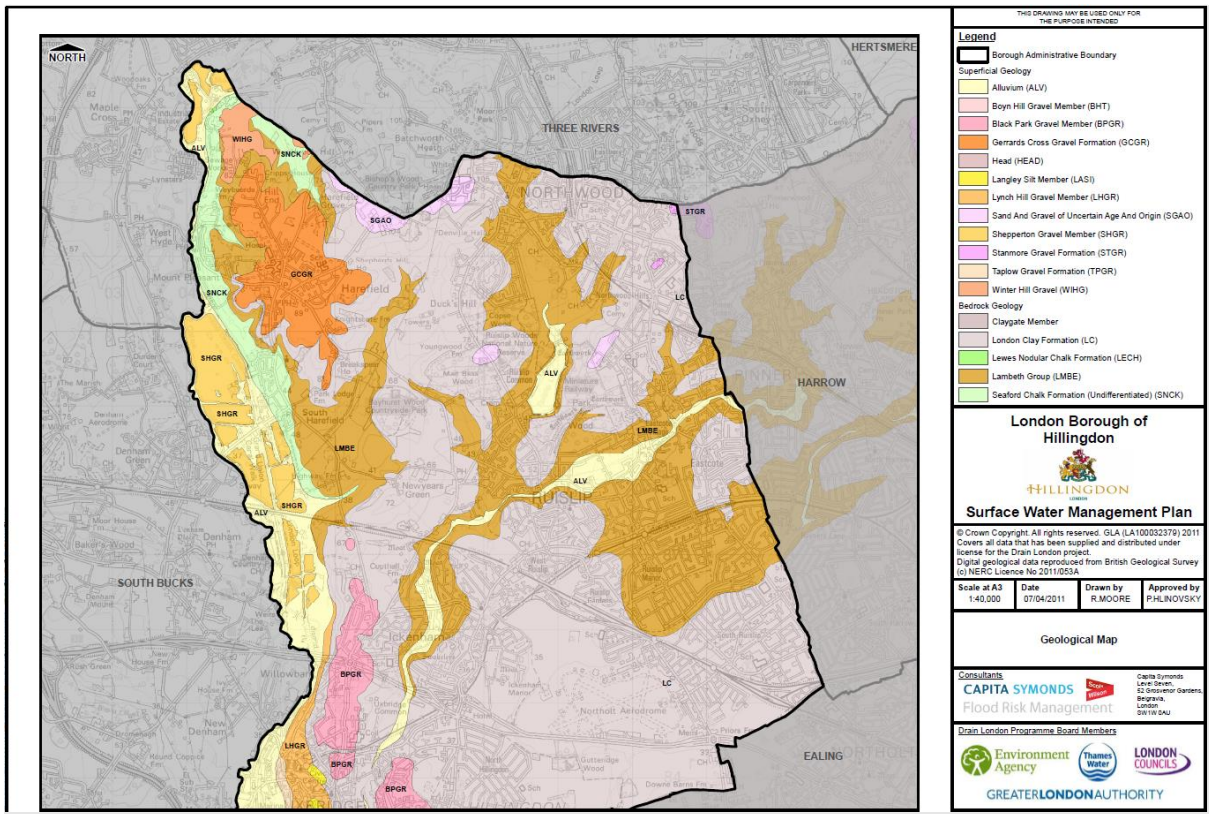
The surface soil types as identified by Cranford University match the subsurface geological sequence. The northern half of the Borough is typified by slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. Freely draining slightly acid loamy soils are found in the southwest, and Loamy soils with naturally high groundwater in central areas and in the southeast of the Borough.

Parts of the Borough are covered by areas that are classified as aquifers and are therefore considered capable of containing sufficient groundwater to provide a base flow to rivers and support local or regional water supplies. In the north and centre of the Borough, parts of the Lambeth Group and Alluvial deposits in river valleys are classified as Secondary A Aquifer. In the south of the Borough close to Hayes, Harlington and Heathrow, the granular deposits are classified as Principal Aquifer. The Colne Valley along the west of the Borough has a mosaic of Principal and Secondary A aquifer designations.

The variations in geology, soil types and hydrogeology across the Borough result in different hydrological characteristics within each drainage catchment. These variations will also alter the suitability of different flood risk management interventions in each area.

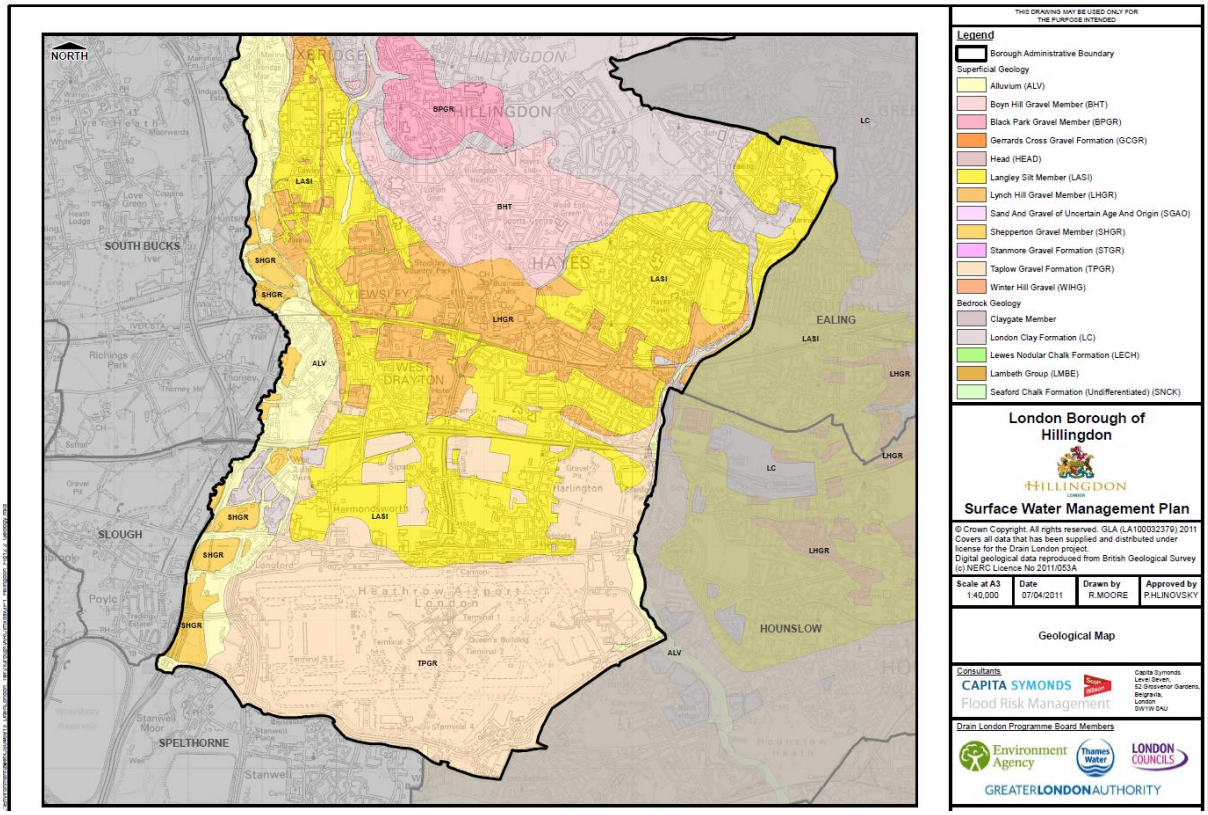
[31] London Borough of Hillingdon - Contaminated land inspection strategy

Figure 43. Geological map of northern part of LB Hillingdon



Source: Hillingdon Surface Water Management Plan

Figure 44. Geological map of southern part of LB Hillingdon

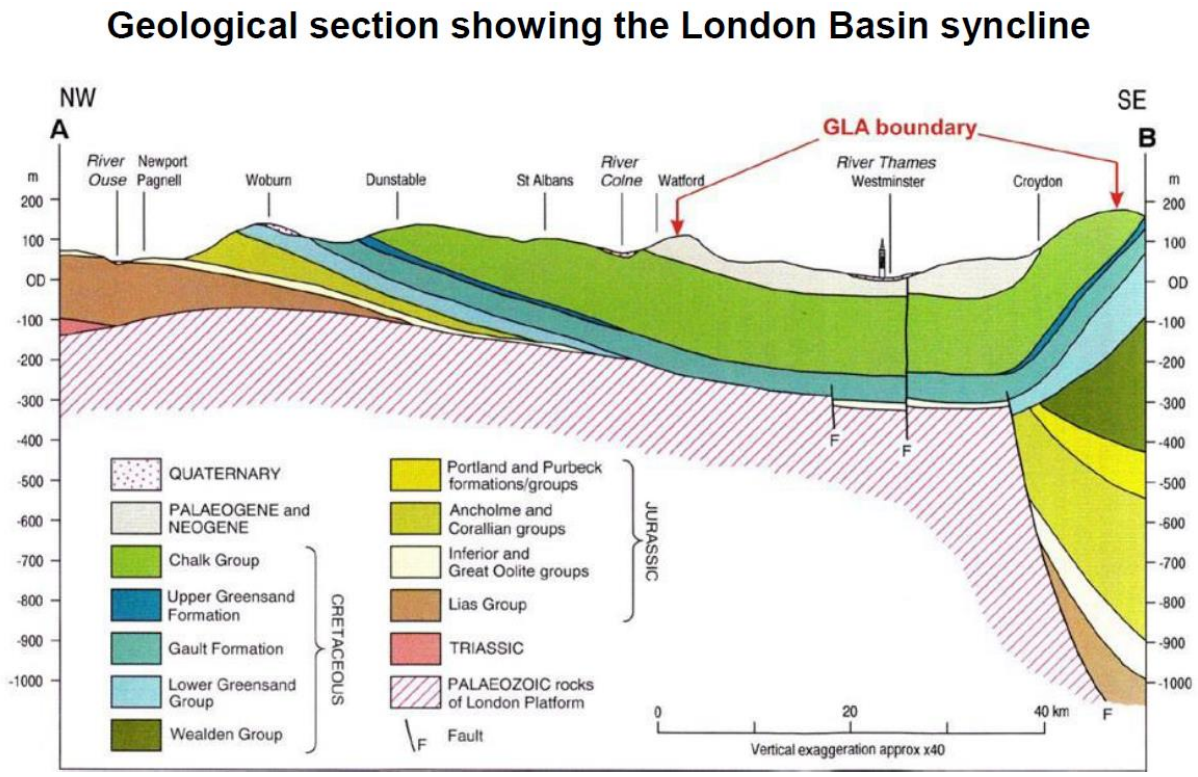


Source: Hillingdon Surface Water Management Plan

Geodiversity

Geodiversity is the natural range (diversity) of geological (rocks, minerals, fossils), geomorphological (landform and processes), soil and hydrological features. It includes their assemblages, structures, systems and contributions to landscapes. Understanding geodiversity and the services it provides helps with the sustainable management of natural resources and the earth's changing natural systems.

Figure 45. London and the Thames Valley, geological section



Source: After Sumbler, M .G. (1996) British regional geology: London and the Thames Valley, 4th Edition, British Geological Survey (Reproduced as Figure 8 in the 'London's Foundations' Report)

Geodiversity is recognised as an important aspect of nature conservation and it is a material consideration within planning decisions. There is one geological Site of Special Scientific Interest (SSSI) in Hillingdon at Harefield Pit, and seven sites in the Greater London area.

There is also a Regionally Important Geological Site designated in Hillingdon in The Gravel Pits in Northwood. The London Geodiversity Action Plan 2019-2024 identifies additional candidate Regionally and Locally Important Geological Sites to be considered.

Land contamination

Hillingdon's land use history has been largely agrarian and remained so well into the early 20th century, including amongst other things a large number of orchards, nurseries and market gardens. Small areas of industry occurred by the river and in town centres such as Uxbridge (early industry often related to agriculture), and along major transport routes such as the canals and railways, after they first appeared in the late 18th and late 19th/early 20th century, respectively. Some of the larger industries to move into the area included the manufacturing of chemicals and paints (Astor Stag, Trimite), records and recording equipment (Gramophone & Typewriter Co./HMV/EMI), metal products manufacturing (Steel Barrel Works, Power Plant Gears) and asbestos products manufacturing (Cape Boards, Bell's United Asbestos Company). A few still remain today.

In terms of land coverage, the predominant industry in Hillingdon appears to have been mineral extraction and brick making, which largely coincided with the development of

residential areas in and around London in the early part of the 20th century. In Hillingdon housing for the increasing numbers of industrial workers and their families had to be built and these are located mainly to the south of the borough. The expansion of 'Metroland' – advertised as a rural retreat for those working in the city, made possible by good rail links, resulted in housing developments located mainly in the north of the borough. Mineral extraction has also left behind a significant legacy of excavated land most of which was later filled with domestic and other types of waste from Hillingdon and other neighbouring authorities. There are 83 recorded landfill sites in Hillingdon of which two are still operational, accepting inert wastes.

Since the implementation of the strategy began a considerable and diverse number of potentially contaminative uses have been identified in the borough using historical Ordnance Survey maps and files within the EPU as well as from other sources. Figure 46 below shows all potentially contaminated land areas identified in the borough to date. These include areas occupied by manufacturing industries, depots, railway land, petrol stations, and landfill sites amongst others. There is currently one entry on the Council's Contaminated land public register, shown as a Part 2A determination on the map. The site is New Years Green Lane Landfill Site, New Years Green Lane, Harvil Road, Harefield. The register is intended to act as a full and permanent record of all the regulatory action taken by the Council in relation to the remediation of the land, to include information about the condition of the land.

Potentially contaminated land are areas identified by Hillingdon as land which need to be investigated under Part 2A of the Environmental Protection Act, or rather land where the historical uses may have given rise to land contamination.

Figure 46. Potentially contaminated land identified in Hillingdon

Sustainability issues

- The dominant solid geology for the LB of Hillingdon is the London Clay Formation. Outcrops of the Lambeth group are located within river valleys near the north of the borough (around Ruislip and Northwood). Along the western boundary of the borough some areas of Chalk are located near the River Colne.
- Geodiversity is recognised as an important aspect of conservation in its own right. There are existing sites designated for their geological value, with others that have been recommended for review.

- Land contamination can affect soil and water quality.
- As development pressures increase, Hillingdon's soils, water and geodiversity are at risk of being eroded and their quality being reduced.
- Soils are also important carbon sinks and unchecked development will continue to erode this benefit.
- The borough has identified a number of potentially contaminated land areas which may require remediation before being used.

Likely evolution without the Local Plan

- The opportunity to further establish the importance on the need to protect Hillingdon's geodiversity and soil quality through the Development Plan would be missed.
- The implementation of national and regional planning policy is reliant on local implementation and therefore will not be achieved without a Local Plan. Local planning will be required to identify, promote and protect these areas.

3.15 Water quality and water security

Baseline

London's bodies of water provide high-value locations for development, amenity and transport, but not one of the capital's 47 waterways or bodies of water are at a 'good' status as defined by the EU Water Framework Directive. The WFD includes groundwater and surface water bodies, with the objective of achieving 'good' quantitative and chemical status.

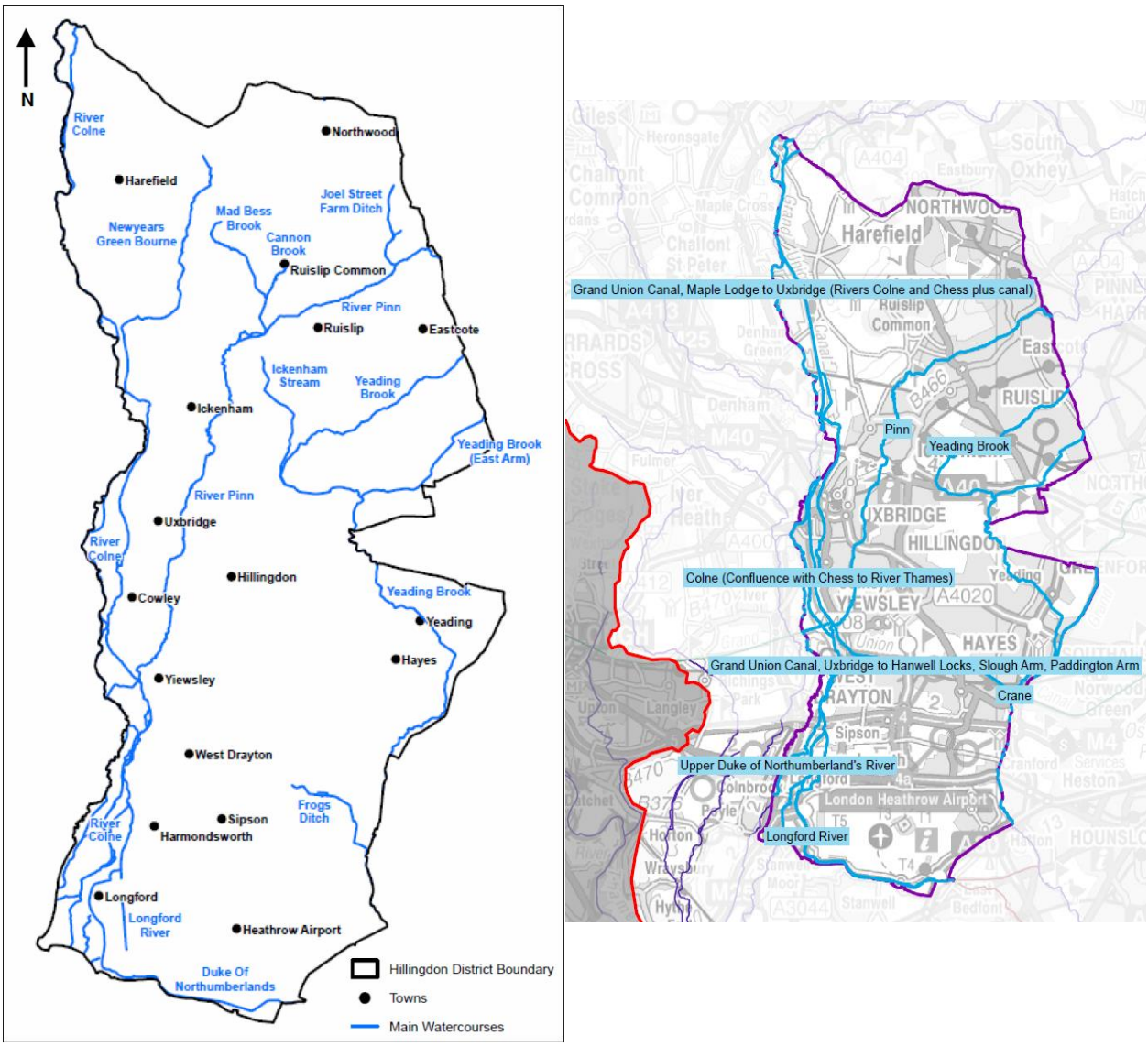
The London Infrastructure Plan 2050[32] states that London's growing population will mean the demand for water in the city will increase. Climate change is expected to create drier summers, so there will be less water when we need it. In addition, many of our key development sites do not have sufficient water mains capacity – we therefore need to secure more water and invest in more pipes to get it to people and businesses.

The following watercourses are located within the Hillingdon borough boundary (also see Figure 47):

- River Colne (including the tributaries of the Frays River and New Years Greene Bourne);
- River Crane (including the Yeading Brook);
- River Pinn;
- Duke of Northumberland River & Longford River;
- Grand Union Canal.

[32] London Infrastructure Plan 2050 | London City Hall

Figure 47. Main watercourses in Hillingdon



Water status

The WFD indicator of the health of the water environment determines whether a water body is at good status or potential. This is an assessment of a range of quality elements relating to the biology and chemical quality of surface waters and quantitative and chemical quality of groundwater. To achieve good ecological status or potential, good chemical status or good groundwater status every single element assessed must be at good status or better. If one element is below its threshold for good status, then the whole water body's status is classed as less than good. Table 32 below shows the number of reasons for Hillingdon's waterbodies for not achieving good status (RNAGS) and reasons for deterioration (RFD), split by sector.

Table 32. Reasons for Hillingdon's waterbodies not achieving good status and reasons for deterioration

Sector	RFD	RNAG	Grand Total
Agriculture and rural land management	0	0	0
Domestic General Public	0	7	7
Industry	0	1	1
Local and Central Government	0	2	2
Mining and quarrying	0	0	0
Navigation	0	0	0
No sector responsible	2	1	3
Other	0	0	0
Recreation	0	0	0
Sector under investigation	1	0	1
Urban and transport	0	15	15
Waste treatment and disposal	0	0	0
Water Industry	0	8	8
Grand Total	3	34	37

According to the South East River Basin District River Basin Management Plan (2015)[33], many significant water management issues arise from current activities that provide a wide range of benefits and it is therefore not possible or desirable to fully resolve the issues:

Physical modifications - affecting 43% of water bodies in this river basin district

People have made many physical changes to rivers, lakes and estuaries, for example, flood defences and weirs, and changes to the size and shape of natural river channels for land drainage and navigation. These modifications alter natural flow levels, cause excessive build up of sediment in surface water bodies and the loss of habitats and recreational uses. In many cases the uses and associated physical modifications need to be maintained. In these circumstances it may not be possible to achieve good ecological status.

Pollution from waste water – affecting 40% of water bodies in this river basin district

Waste water, or sewage, can contain large amounts of nutrients (such as phosphorus and nitrates), ammonia, bacteria, harmful chemicals and other damaging substances. Sewage can be the main source of phosphorus and harmful chemicals and of nitrate. It can enter water bodies where sewage treatment technology to remove enough of the phosphorus and harmful chemicals doesn't exist, from leakages from privately owned septic tanks and, in wet weather, storm overflows can discharge untreated sewage having a significant impact on bathing waters. Population growth and changes in rainfall patterns are increasing the pressure on the sewer network.

[33] South East river basin district river basin management plan - GOV.UK (www.gov.uk)

Pollution from towns, cities and transport - affecting 9% of water bodies in this river basin district

Rainwater draining from roofs, roads and pavements carries pollutants, including grit, bacteria, oils, metals, vehicle emissions, detergent and road salt drains to surface waters, including estuaries and coastal waters. Many homes and workplaces have 'misconnected' drains, meaning that dirty water often enters surface waters and groundwater rather than foul sewer drains.

Changes to the natural flow and level of water - affecting 7% of water bodies in this river basin district

Reduced flow and water levels in rivers and groundwater caused by human activity (such as abstraction) or less rainfall than usual can mean that there is not enough water for people to use and wildlife might not be able to survive. Reduced flow affects the health of fish and exaggerates the impacts of barriers such as weirs. Climate change research shows that by 2050 England can expect significant seasonal variations, with higher winter and lower summer flows, and a reduction in flow overall. In the long term, there will be less water available to abstract for drinking, industry and irrigating crops.

Negative effects of invasive non-native species - affecting 2% of water bodies in this river basin district

Non-native invasive species can have significant economic impacts. The cost of controlling invasive species to make sure that flood defences and the natural environment are not compromised is rising. American signal crayfish are becoming widespread and affect animals such as fish and invertebrates. Other species such as mitten crabs destroy habitats like reed beds and can cause banks to collapse by burrowing into them. Climate change is thought to drive certain species northwards, increasing their frequency and variety in the future and affecting the condition of water bodies.

Pollution from rural areas - affecting 30% of water bodies in this river basin district

Some approaches to land management have increased the amount of soils and sediment that are being washed off the land carrying phosphorus into waters which can cause excessive algae growth called 'eutrophication'. A changing climate means that more intense rainfall is likely to occur, increasing the risk of impacts further. Nitrate from fertilisers has built up in groundwater over decades and will take a long time to reduce. Sedimentation from erosion, forestry practices, saturated and compacted fields and livestock trampling on river banks has affected river ecology by smothering fish spawning grounds. Other impacts include bacteriological contamination from animal faeces and inappropriately stored and applied livestock slurry being washed off the land, pesticides from farming, forestry, golf courses and parks. These contaminants pose a particular threat to bathing waters, shellfish waters and drinking water.

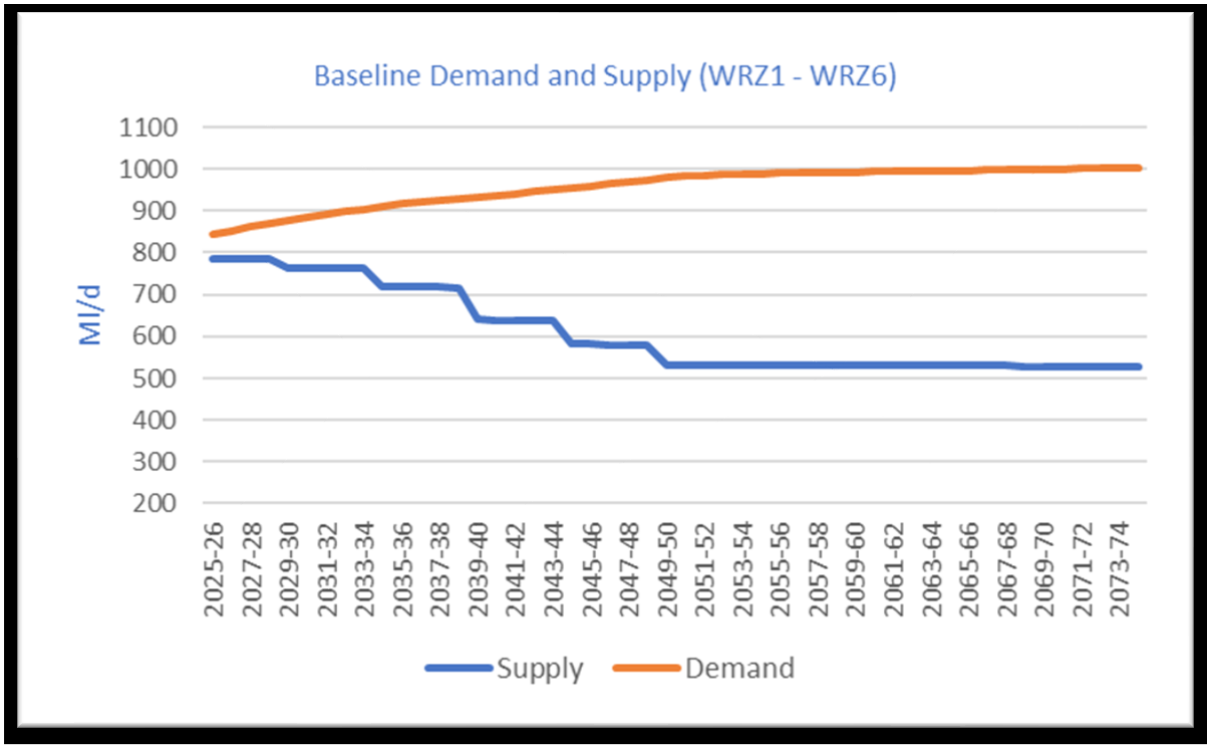
Water security

Affinity Water supply water for the London Borough of Hillingdon. Affinity Water produce a Water Resources Management Plan (WRMP) every five years. The latest draft Affinity Water WRMP (2024) includes the following challenges:

- A continued forecast of substantial population and housing growth, which will increase the demand for water within the region by around 10% by 2050,
- 10% of globally rare chalk streams in the area, which should be protected,
- Supply is groundwater dominated and abstraction can harm ecologically sensitive areas, including chalk streams,
- One of the lowest annual rainfall per person in the UK, and
- A need for more water connections between areas.

The WRMP estimates demand and supply of water to plan for future provision. The London Borough of Hillingdon falls within the grouping of Water Resource Zones 1-6 called Central Communities. As set on Figure 48 below, the WRMP shows a significant reduction in supply from 2030 to 2050, largely due to planned reductions in water abstracted from groundwater to meet environmental targets and protect chalk streams and other habitats. Affinity Water also need to take account of the impacts of climate change and to improve drought resilience. In response the WRMP states that the task is to pursue a full range of demand-side measures whilst also appraising a wide variety of supply-side solutions.

Figure 48. Forecast demand and supply of water in the 'Central Communities' (which includes Hillingdon)



Source: Affinity Water WRMP, page 125.

Waste water treatment

Thames Water are responsible for removing and treating sewage and wastewater in the London Borough of Hillingdon. According to the Thames Water Drainage and Wastewater Management plan 2025-2050, the key challenges are:

- Population growth: Population in the region to grow by more than 2 million people by 2045. (the same as the entire population of Birmingham and Leeds),

- Climate change: Droughts, heatwaves and summer rainstorms becoming up to 20% more extreme,
- Loss of green space: We are continually losing green and permeable areas to housing, transport infrastructure, and many other uses This means that more rainwater cannot soak into the ground, and it runs into sewers and rivers more quickly, increasing the risk of flooding, and
- An environment in need: Of the 501 waterbodies in the river Thames basin, 94% are at less than good ecological status. 32% of the reasons for not achieving good status are down to water company activities, the remainder are principally attributed to activities such as urban and transport, and agricultural and rural land management.

Planning can help in mitigating these problems, by reducing water runoff from developments through use of Sustainable Urban Drainage Systems (SUDs).

Water protection

Groundwater supplies a third of our drinking water. In some areas of southern England, up to 80% of the water from your taps is from groundwater. It also keeps many of our rivers flowing. Groundwater bodies in the UK are default drinking water protected zones defined as “rivers, lakes and groundwater that currently (or will in the future) supply more than 10m3/day of water for human consumption, or serve more than 50 people”.

The Environment Agency must protect groundwater sources used to supply drinking water from pollution. Sources include wells, boreholes and springs. Source Protection Zones have been defined which show the level of risk to the source from contamination. This could be from any activity that might cause pollution in the area. For example, storing pollutants like petrol underground, soakaways from septic tanks to the ground. The closer the activity, the greater the risk. Land contamination can also pose a serious risk to groundwater resources.

The north-west of the borough and a small area centrally located within the borough, are located over Source Protection Zones (SPZ) designated by the Environment Agency. They cover 7 abstraction points falling within the borough, and 2 just outside the western boundary as shown on Figure 49 on page 117**Error! Reference source not found.**Figure 49 below.

SPZs have been defined using models to estimate:

- how long it will take for a pollutant to travel from the water below ground (any point below the water table) to the source (the point where water is taken), and
- the area around the source which needs protecting from potential pollutants.

Inner zone – SPZ1

This zone is 50 day travel time of pollutant to source with a 50 metres default minimum radius.

Outer zone – SPZ2

This zone is 400 day travel time of pollutant to source. This has a 250 or 500 metres minimum radius around the source depending on the amount of water taken.

Total catchment – SPZ3

This is the area around a supply source within which all the groundwater ends up at the abstraction point. This is the point from where the water is taken. This could extend some distance from the source point.

The shape and size of the SPZs are based on a number of factors, which are used to develop a model of the groundwater environment on which the zones are defined. Therefore the size and shape of the zones have changed since the last review. The Environment Agency has provided updates of this information since the strategy was first published. Potentially contaminated sites in the vicinity of source protection zones are given higher priority.

Figure 49. Source Protection Zones and Abstraction Points in Hillingdon

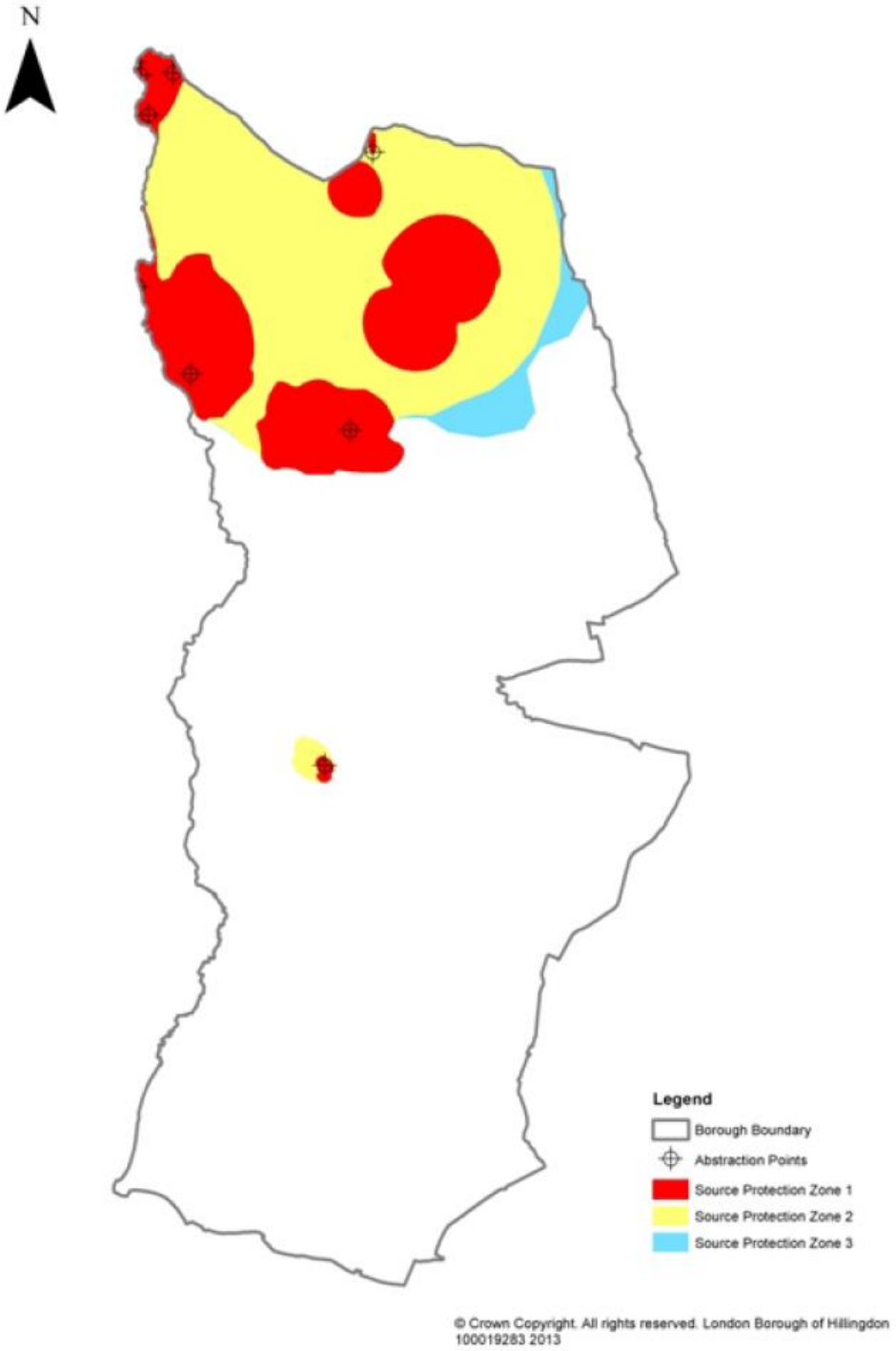
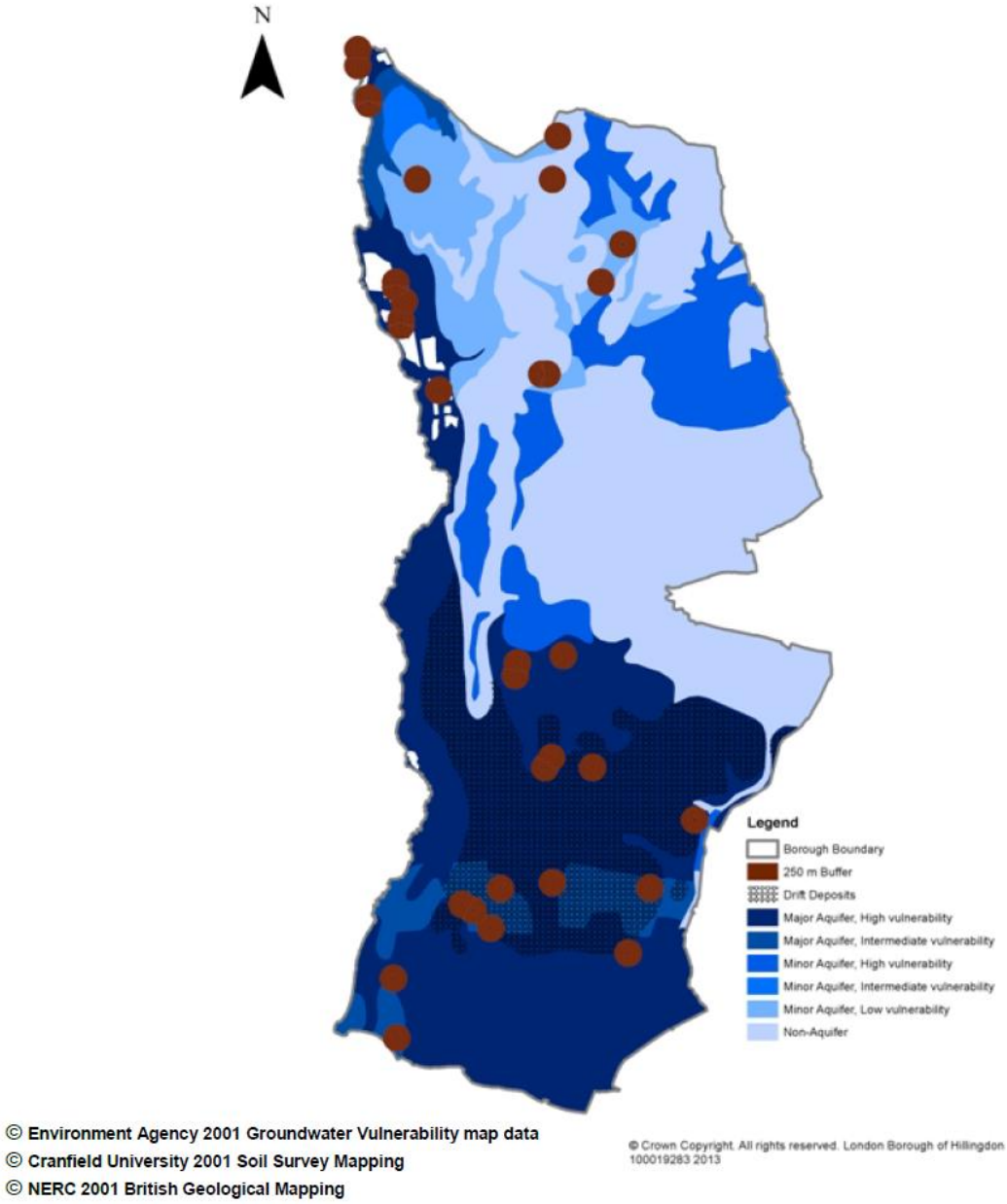


Figure 50. Additional abstraction points and groundwater vulnerability in Hillingdon



There are 3 Water Framework Directive (WFD) groundwater bodies present in Hillingdon (Mid Chilterns Chalk, Lower Thames Gravels, and Radlett Tertiaries). The WFD focuses on ensuring good qualitative and quantitative health, i.e. on reducing and removing pollution and on ensuring that there is enough water to support wildlife at the same time as human needs.

Further information about the WFD can be found here: [The Water Framework Directive and FCERM | Local Government Association].

The London Borough of Hillingdon has 20 per cent of all the standing water in Greater London, and an important network of rivers and canals. Therefore, surface water quality is also an important issue for Hillingdon. Contamination of these waters has implications on water abstraction, the conservation of existing ecosystems, and their amenity value. These waters and particularly the seven main rivers that flow through the borough: the Colne, Fray's, Pinn, Wraysbury, Duke of Northumberland, Crane and Yeading brook, and their tributaries and associated ditches also need to be considered for their potential to accumulate and/or transport contaminants to other areas.

Sustainability issues

- The London Borough of Hillingdon has 20 per cent of all the standing water in Greater London, and an important network of rivers and canals. Contamination of these waters has implications on water abstraction, the conservation of existing ecosystems, and their amenity value.
- London's bodies of water provide high-value locations for development, amenity and transport, but not one of the capital's 47 waterways or bodies of water are at a 'good' standard as defined by the EU Water Framework Directive.
- Water quality needs to be significantly improved and prevented from getting worse.
- London is an area of 'serious water stress'. Demand for water significantly exceeds supply in London. This deficit is forecast to continue to increase over the next 80 years as the population increases, the impacts of climate change continue to get worse and through increased exports of water to neighbouring areas.
- Water consumption needs to be reduced and new water resources need to be planned for.

Likely evolution without the Local Plan

- Without local measures in addition to the London Plan and NPPF, water quality could decrease and demand for water could increase. Meanwhile, supply of water will continue to remain an issue which will worsen over time.
- Local Planning policies for sustainable urban drainage systems (SUDS) will be essential to reduce water usage and runoff.
- This issue needs to be tackled in multiple ways, including habit changes for London and Hillingdon's population to use less water, some of which is beyond the scope of the Local Plan.

3.16 Biodiversity

Baseline

As stated in *Biodiversity: The UK Action Plan (1994), "*biodiversity is the variety of life forms we see around us. It encompasses the whole range of mammals, birds, reptiles, amphibians, fish, insects and other invertebrates, plants, fungi, and micro-organisms such as protists, bacteria and viruses." Biodiversity in the UK has been largely influenced by human development and the human use of land and natural resources has had a significant impact on species and their habitats. Either directly or indirectly, most of the UK's ecosystems have been affected by human activity[34]. The pace of change and loss of biodiversity has been accelerating significantly in recent decades. Different aspects of biodiversity are however vital to continued human development as well, and irreversible changes to biodiversity could lead to potentially severe consequences for humans as well as the other species and their habitats as well. Often, the value of biodiversity may not be known until future discoveries, such as the importance of the Pacific Yew in finding a cure for cancer, and so given that understanding, all biodiversity should be protected, if not for the biodiversity itself, for its potential future value to humans[35]. Organisms are interlinked and do not live in isolation. In a food-web for example, the loss of one species in the web will impact other species in the web. Where natural resources are concerned, this would have an economic impact as well.[36]

The main factors influencing biodiversity in the UK include the following[37]:

- Rocks, landform and soils – these, together with the climate were the primary determinants of biodiversity in the UK and around the world.
- Climate – climate is a significant factor in determining which species can grow, survive and thrive in different parts of the UK and around the world. Climate change therefore has a significant effect on biodiversity as well.
- Human influence – how humans use the land, whether it be for farming, forestry, urban development, etc, will determine the effects on biodiversity in that area. People have now become the prime regulators of biological diversity in the UK.

Biodiversity in Hillingdon

The natural environment is one of the borough's greatest resources. Environmental quality is however under threat from many directions, mainly human activity and climate change.

There are a number of environmental assets in the borough. These are sites with significant nature conservation value. Sites of Special Scientific Interest (SSSI) are a representative sample of England's finest wildlife and geological sites. Other environmental assets designated in the borough include National Nature Reserves (NNR) and Local Nature Reserves (LNR).

34 Biodiversity – The UK Action Plan | JNCC Resource Hub
35 ibid
36 Biodiversity – The UK Action Plan | JNCC Resource Hub
37 ibid

SSSI land comprises 480.6 hectares of land in the borough. Approximately 121 hectares of this SSSI land is shared with South Bucks as the designation crosses borough boundaries. Table 33 below shows the main habitat types that make up SSSI land in the borough.

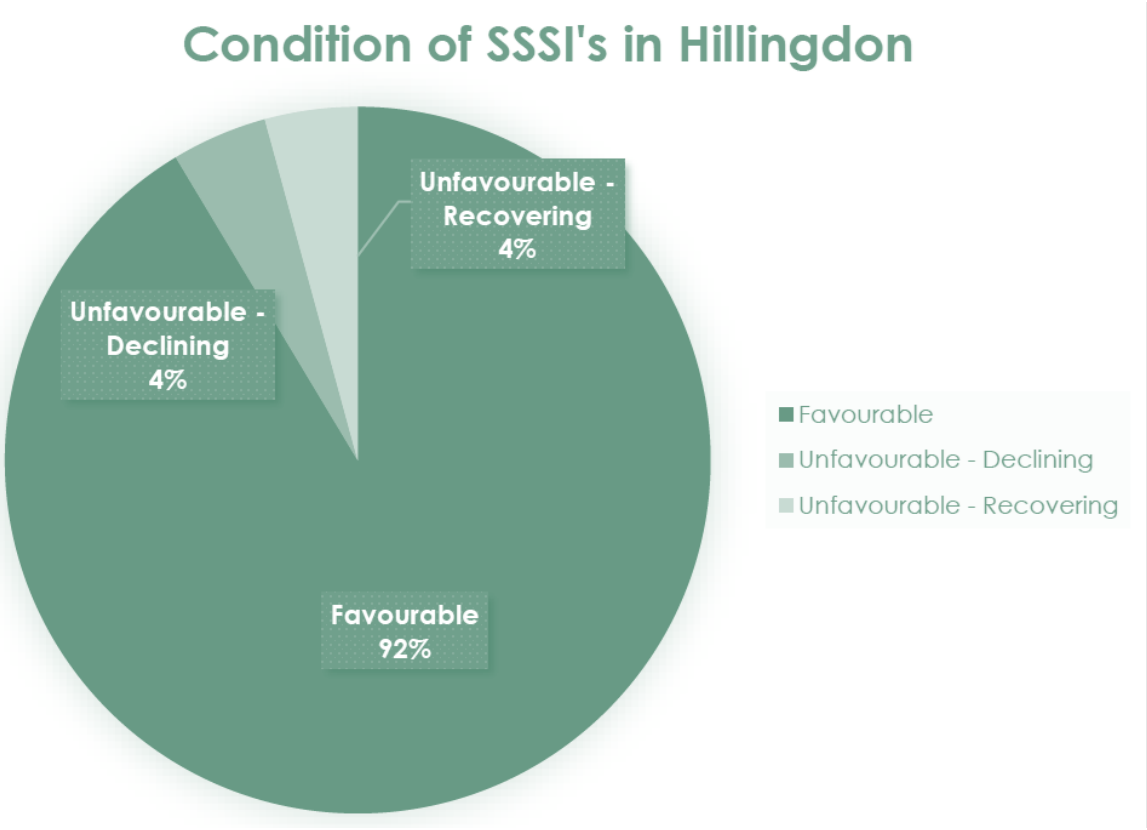
Table 33. SSSI Habitat types in Hillingdon by area and percentage of the total

SSSI Habitat Type	Area (ha)	% of borough SSSI area
ACID GRASSLAND - Lowland	20.3748	4.2
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	311.0411	64.7
CALCAREOUS GRASSLAND - Lowland	6.9749	1.45
EARTH HERITAGE	1.796	0.37
NEUTRAL GRASSLAND - Lowland	26.2972	5.46
STANDING OPEN WATER AND CANALS	114.1842	23.75
Total	**480.6682**	

Source: Natural England

Natural England also monitors the condition of SSSI's. Figure 51 shows that the majority of SSSI's in Hillingdon remain in favourable condition. Favourable condition means that the SSSI 's habitats and features are in a healthy state and are being conserved by appropriate management. Despite this assessment, Hillingdon's and the wider UK's natural environment faces significant challenges and biodiversity / natural environment improvement will need to be actively managed to protect and enhance it. Natural England also assess whether proposals to carry out operations within a SSSI have a positive or negative effect on the condition of a site.

Figure 51. Condition of SSSI's in Hillingdon



Source: Natural England

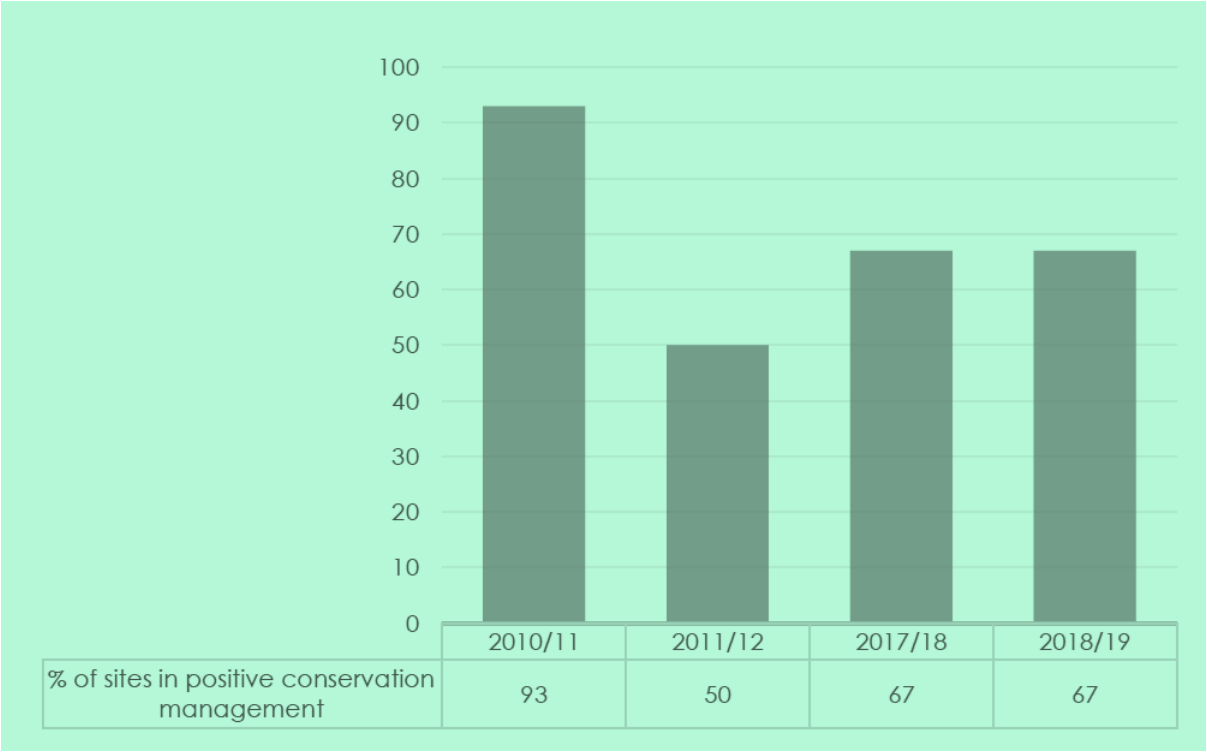
As well as SSSIs, there are other important sites of value for their nature. Sites of Importance for Nature Conservation Value (SINCs) are designations given to protect these sites and they also known as Local Wildlife Sites. According to GiGL[38], there are 87 SINCs in the Borough which cover 2.143ha. This equates to 18.5% of the Borough. The Council are currently working with GiGL to ensure an updated and full record of adopted SINCs is published.

Local Sites are non-statutory areas designated at local level for their significant nature conservation value, either for wildlife or geology. Sites in positive conservation management are defined as those sites which are being managed to conserve their nature conservation interest.

Assessing the extent of positive management can help to identify sites where positive management is lacking and will help to focus the efforts of Local Site Partnerships in ensuring Local Sites are managed and their nature conservation value is maintained or enhanced.

[38] Greenspace Information for Greater London – the capital's environmental records centre (gigl.org.uk)

Figure 52. Percentage of sites in positive conservation management in Hillingdon



	2010/11	2011/12	2017/18	2018/19
% of sites in positive conservation management	93	50	67	67

As shown in Figure 52, the percentage of sites in positive conservation management has increased significantly since 2011/12, from 50% to 67% in 2018/19, however these figures remain significantly below the 93% recorded in 2010/11. The reasons for this are difficult to pinpoint without more detailed analysis however possible reasons include:

- The designation of additional local sites not yet in positive management
- A lack of information about whether sites were still in positive management
- An actual decrease in positive management of sites,
- Local Sites that have come out of funding schemes and are awaiting approval for a new scheme, and
- Merging several small sites together into larger areas, thereby reducing the overall number of sites.

Biodiversity Net Gain

Under the Environment Act 2021 all planning permissions granted in England will have to deliver at least 10% biodiversity net gain. Biodiversity Net Gain (BNG) aims to leave the natural environment in a measurably better state than before.

BNG will represent an opportunity to improve biodiversity in the borough but also achieve other IIA objectives at the same time such as managing flood risk, mitigating against climate change and improving air quality.

Sustainability issues

- Hillingdon has a large number of environmental assets in the borough including over 480 hectares of SSSIs, SINCs and locally designated sites too. The natural environment is one of the borough's greatest resources, however environmental quality is under threat from many directions, mainly human activity and climate change.
- People are now the prime regulators of biodiversity in the UK.
- Increased development pressure, economic growth and intensification of existing development have had a negative effect on biodiversity.
- As the population grows the natural environment has come under increased pressure for recreational use. Habitats and species can suffer as a result.
- The national implementation of Biodiversity Net Gain (BNG) is likely to take place during the Local Plan Review and may require a locally tailored approach to ensure its implementation is optimised.

Likely evolution without the Local Plan

- Usage of, and damage to the natural environment will increase and more active management of the natural environment will also be required, which at times will go beyond the scope of the Local Plan. Without robust Local Plan policies to protect the natural environment development will not adequately protect and enhance existing sites or create new habitat.
- Local policies in addition to the London Plan and existing Local Plan policies will be required to provide more protection and enhancement of the natural environment, as potential sources of damage to it intensify. The Local Plan can be a tool for identifying ecological value, securing protection through a hierarchy and identifying appropriate mitigation where necessary.
- Investment in protection of the natural environment will also be needed.

3.17 Green infrastructure

Baseline

Green infrastructure is a network of parks, green spaces, gardens, woodlands, rivers and wetlands, as well as urban greening features such as street trees and green roofs. It has an important role in achieving the following[39]:

- promote healthier living and provide spaces for physical activity and relaxation
- cool the city and absorb stormwater to lessen the impacts of climate change
- filter pollutants to improve air and water quality
- make streets clean, comfortable and more attractive to encourage walking and cycling
- store carbon in soils and woodlands
- create better quality and better-connected habitats to improve biodiversity and ecological resilience.

[39] Green Infrastructure | London City Hall

Networks of linked open spaces and green corridors can encourage cycling and reduce dependency on the car, contributing to lower levels of traffic.

Green infrastructure can provide sustainable urban drainage solutions, whilst trees cool air and provide shade. It can also be utilised to compliment the appearance of new and existing development.

Hillingdon is the second largest of London's 32 Boroughs covering an area of 42 square miles (11,571 hectares), over half of which is a mosaic of countryside including canals, rivers, parks and woodland.

Hillingdon is particularly well served by Green Corridors and the Grand Union Canal and Colne Valley provide important routes for people and wildlife. The network of Public Rights of Way: bridleways and public footpaths provide important links between open spaces and residential areas and allow access across the wider countryside.

Hillingdon has 4,870 hectares of Green Belt (42%) and 107 hectares of Metropolitan Open Land. More details is set out in the section on land use and landscape, on page 51.

Open spaces

Overall, according to Hillingdon's 2011-2026 Open Space Strategy, there is just over 7 hectares of open space with unrestricted access per 1000 population (based on the 2007 mid-year estimates with a Borough population of 250,675).

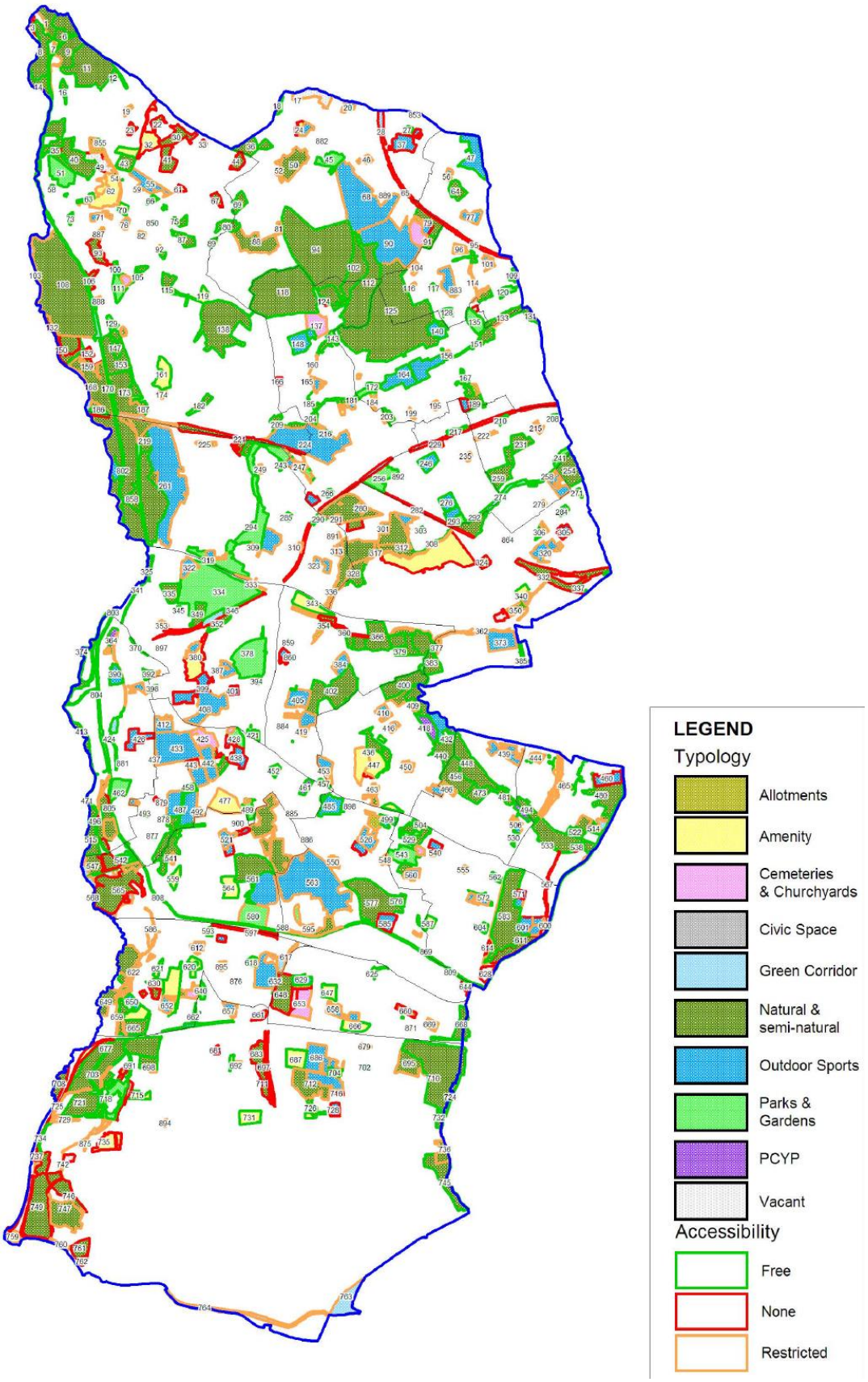
Natural and semi-natural greenspace constitutes the largest component under this measure and accounts for nearly 5 hectares per 1000 population. Excluding natural and semi-natural greenspace there are 2.05 hectares of open space per 1000 population, however in total there is 7.01 hectares of unrestricted open space per 1000 population. This compares to 6.65 hectares per 1000 population in Hounslow, as identified in their 2011 Core Strategy, and 1.97 hectares per 1000 population in Ealing, as identified in their 2012-2017 Green Spaces Strategy. Other categories are shown in Table 34 below.

Table 34. Types of open spaces in Hillingdon by area and percentage of the total (2005)

Open Space Type	Number of sites	Total area (ha)	Percentage of total accessible open space	Hectares of unrestricted open space per 1000 population
Amenity green space	42	110.30	6.3	0.44
Civic space	1	0.61	0	0
Green corridor	26	69.97	4	0.28
Natural and semi-natural	147	1244.32	70.8	4.96
Outdoor sports	20	94.90	5.4	0.38
Parks and Gardens	32	210.76	12	0.84
Provision for children and young people	52	26.73	1.5	0.11
Total	320	1757.59	100	7.01

However, the distribution of open space across the Borough is not even (see Figure 53). The South of the Borough has on average 16.5 hectares per 1000 population, the north just over 10.0 hectares and the more urban Central area just 4.4 hectares. There is even greater variation at a ward level with Pinkwell Ward having 1.7 hectares per 1000 population and Harefield Ward 32.8 hectares.

Figure 53. Distribution of open space in the borough



As the population grows, managing the impacts of human activity on green infrastructure, as well as ensuring there is sufficient green infrastructure for the local population to enjoy will be challenging and something the Borough must plan appropriately for.

The Green Flag Award Scheme recognises and rewards well managed parks and green spaces, setting the benchmark standard for the management of recreational outdoor spaces across the United Kingdom and across the world. It is a useful and objective measure of the quality of open space in the borough.

Hillingdon has 60 Green Flag awards in 2021. This is the most held for parks and open spaces nationally and internationally. 3 parks received the award for the first time in 2021.

Sustainability issues

- Over half of the borough is made up of green infrastructure including canals, rivers, parks, food growing spaces, green spaces, private gardens and woodland.
- Green infrastructure provides many vital benefits and needs to be protected and enhanced.
- As the population increases and development pressure increases, existing green infrastructure will come under increased pressure for alternate uses and may deteriorate.
- There are large areas of open space in the borough however the distribution across the borough is not even. The South of the Borough has on average 16.5 hectares per 1000 population, the north just over 10.0 hectares and the more urban Central area just 4.4 hectares. There is even greater variation at a ward level with Pinkwell Ward having 1.7 hectares per 1000 population and Harefield Ward 32.8 hectares.
- As the population grows, managing the impacts of human activity on green infrastructure, as well as ensuring there is sufficient green infrastructure for the local population to enjoy will be challenging and something the Borough must plan appropriately for.
- Increasing accessibility of existing areas may be an opportunity to bring the benefits of green infrastructure to more residents and invest in the protection and enhancement of these places too.

Likely evolution without the Local Plan

- Deterioration of green infrastructure may increase and will have a negative effect on health and wellbeing, water quality, carbon storage and climate change, biodiversity air quality and sustainable urban drainage.
- Local policies will help mitigate against this impact and also contribute solutions to the increase and enhancement of green infrastructure in the borough.

3.18 Transport

Baseline

Public transport

The existing public transport network in Hillingdon consists of bus, rail and London Underground services and is most strongly developed along east to west routes, with all rail and Underground lines and many bus services travelling from central London to the west. This is illustrated in Figure 54 on the following page.

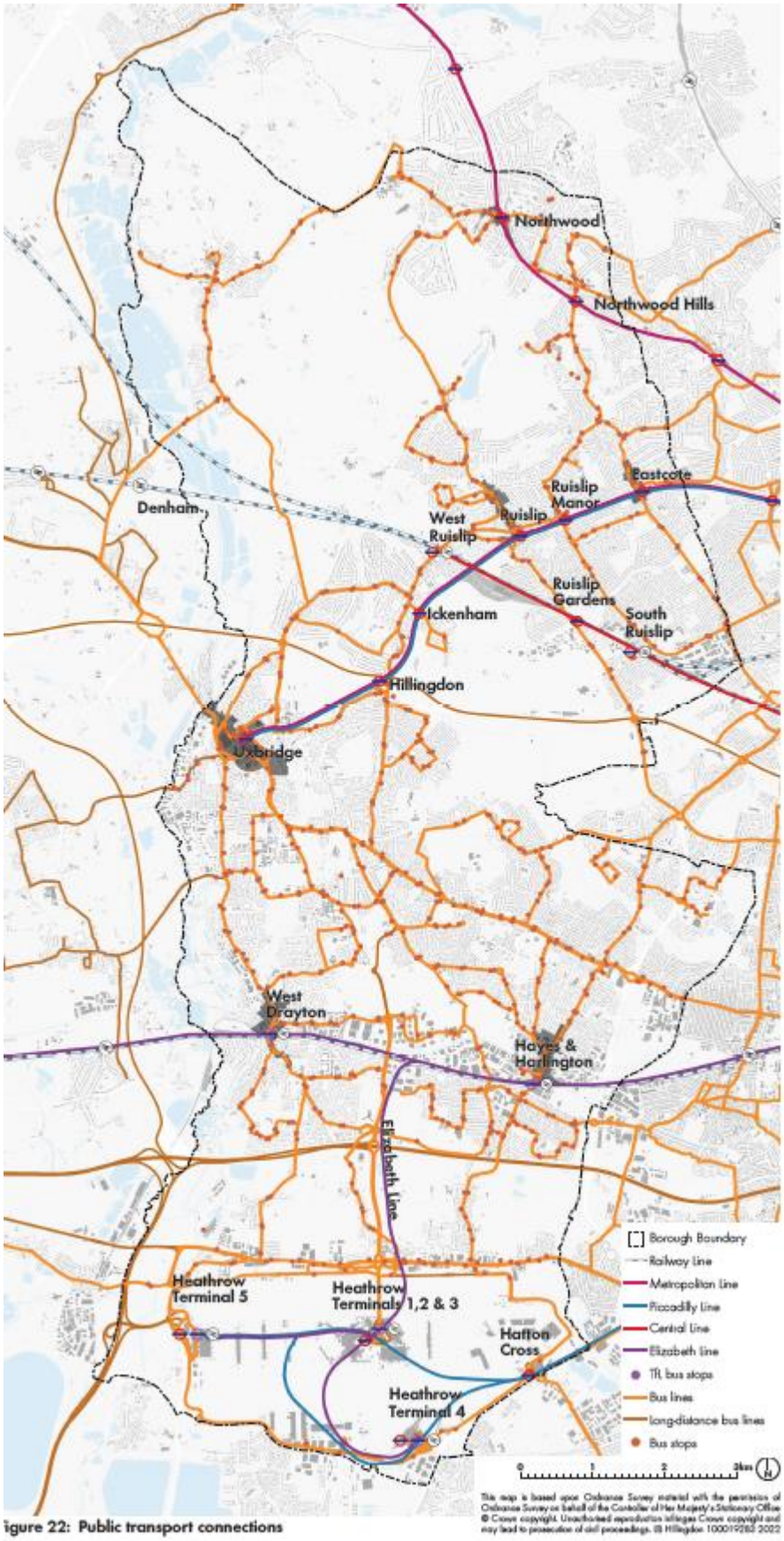
The borough has excellent radial links connecting parts of the borough to Central London, however orbital transport links connecting centres within the borough via public transport are less well connected. Movements between the north and the south of the borough generally rely on bus services. TfL have sought to improve north south connections through bus 'Superloop' services including new SL9 which connects Heathrow with Harrow. There is scope for further enhancements in bus priority and connections with active travel (walking and cycling) routes.

LB Hillingdon is served by three London Underground lines; the Metropolitan Line, Central Line and Piccadilly Line. Three principal railway lines run through LB Hillingdon, the Great Western Main Line, the Chiltern Main Line and the Elizabeth Line. The Great Western Main Line runs east to west through the south of the borough with stations at West Drayton and Hayes and Harlington. The Chiltern Main Line runs east to west through the north of the Borough with stations at West Ruislip and South Ruislip. The Chiltern Main Line runs between London Marylebone and the Oxfordshire/The West Midlands.

The Elizabeth Line opened in 2022 and offers a direct rail link from Reading and Heathrow Terminals to the City, east London, Essex and Kent, travelling through the southern part of Hillingdon on the route of the existing Great Western Main Line. The service significantly reduces the travel time into London. A route map is shown in Figure 54 below.

High Speed Two rail network (HS2) is the government's proposed high speed rail network, which is planned to run through the borough, south of Ruislip, and create a high-speed link from London to the West Midlands. HS2 will also provide connections to local rail stations through a new station at Old Oak Common. It is projected to open between 2029 and 2033. It will have significant construction impacts on existing infrastructure within the borough over the short to medium term.

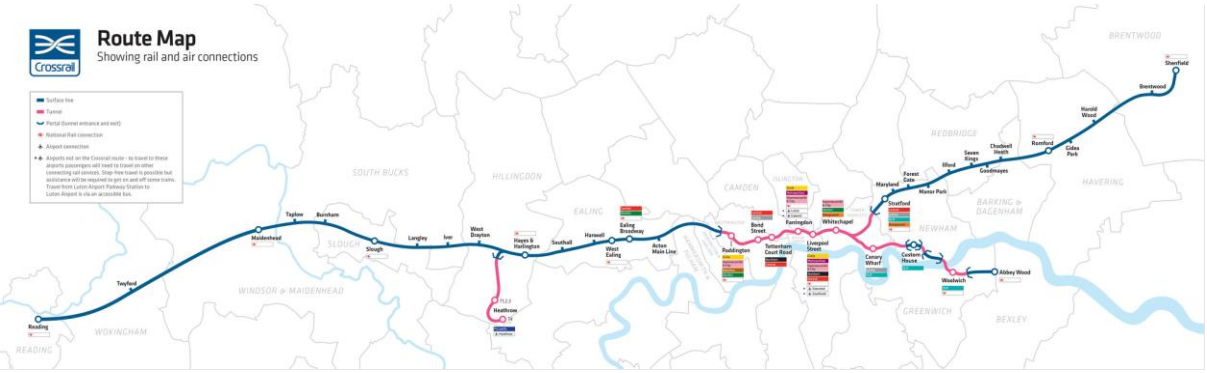
Figure 54. Hillingdon's existing public transport network



igure 22: Public transport connections

Source: Hillingdon Townscape Character Study 2023

Figure 55. Elizabeth Line Geographical Route



Public transport access

Public Transport Access Level (PTAL) is a measure of access to public transport in London. PTAL ratings range from 1 to 6 with 6 representing the highest level of access to public transport. Figure 56 below shows the projected PTAL rating for 2021 across the borough, based on data from 2020.

Despite the public transport connections, the overall PTAL of the borough is low. Evidence from 2017 identified that PTAL within the majority of Hillingdon is low, with 86% of the population in an area of PTAL 2 or lower[40]. This is significantly lower than the average for London (49%) and even outer London (64%).

There is a need to update this data as it does not include recent public transport improvements including the Elizabeth Line and Superloop bus services, which will bring more of the population into better access to public transport. The Council will seek to updated evidence to inform the Local Plan.

[40] Hillingdon, Steer Davies Gleave, Hillingdon Parking Standards Justification 2017

Figure 56. PTAL 2021 projection (based on 2020 TfL data)

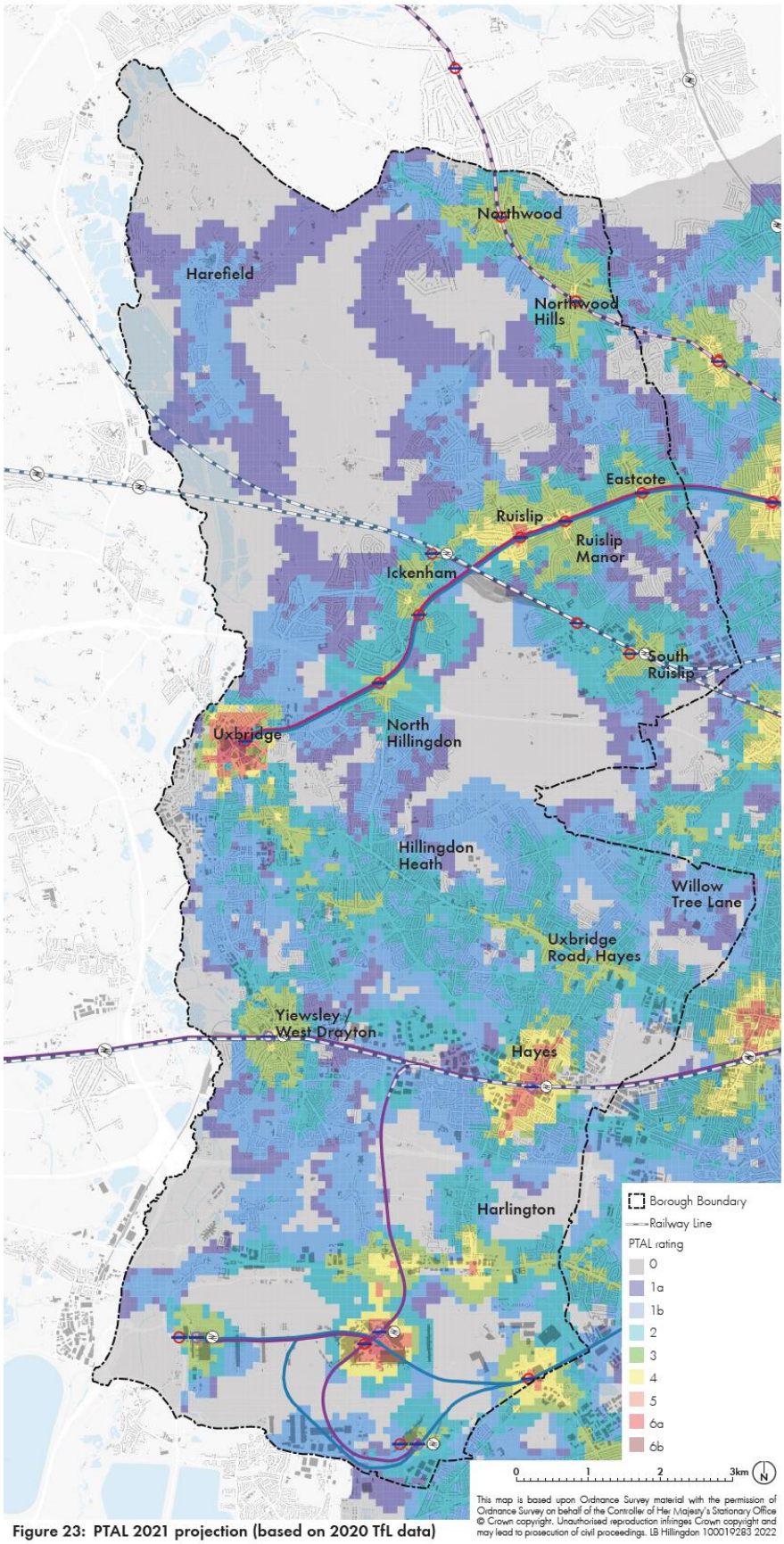
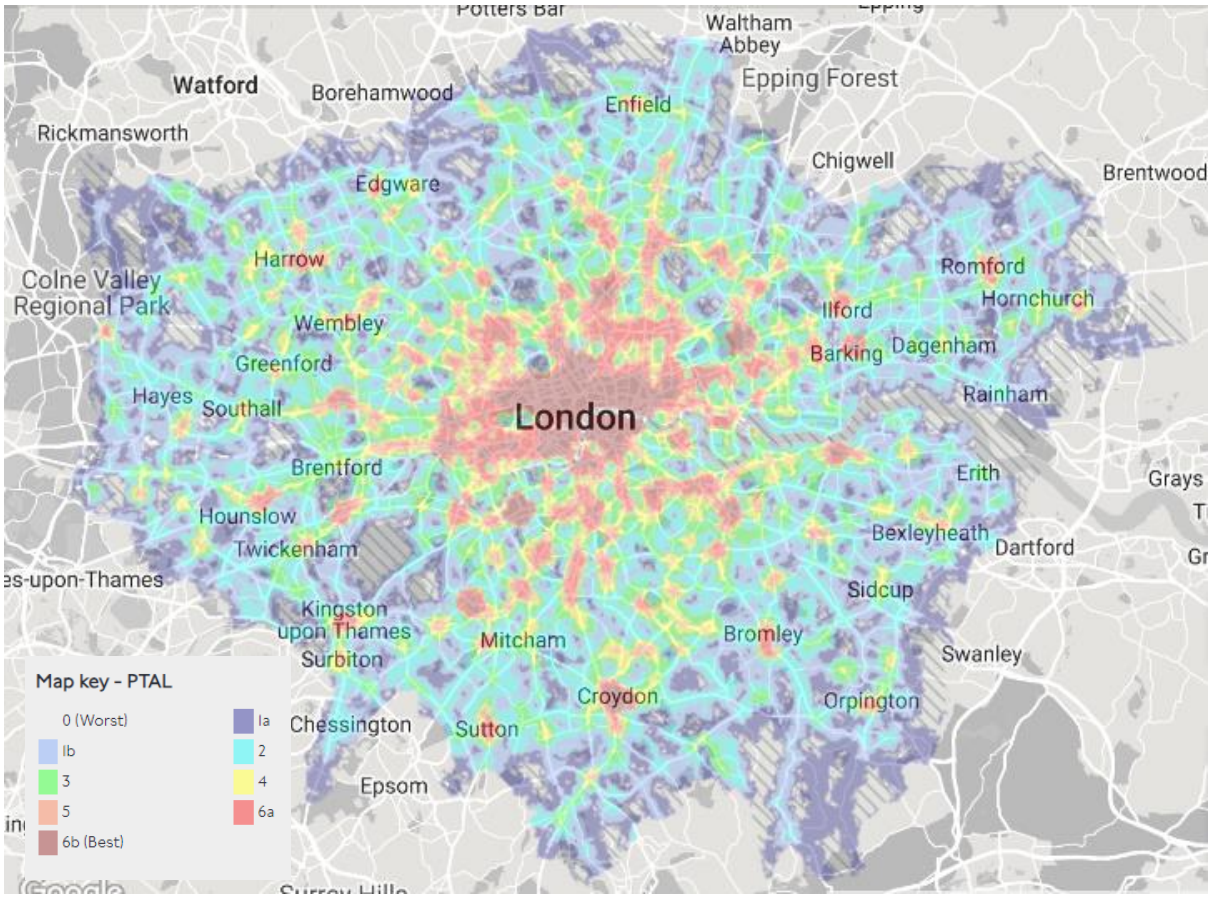


Figure 23: PTAL 2021 projection (based on 2020 TfL data)

Source: Hillingdon Townscape Character Study 2023

Figure 57. Public transport access level London



Source: TfL WebCat, 2021 forecast

In common with many outer London boroughs, the PTAL across Hillingdon is subject to significant variation given the reduced frequency of services further away from the locally important areas.

Areas with the highest PTAL in the borough correspond with the areas served by regular London Underground services. As such, Uxbridge, Heathrow Airport and Hayes and Harlington have concentrations of PTAL 5 and 6 ratings. In between key local centres, areas that are served by London Underground services such as Ruislip, Ickenham, Northolt and Northwood have a PTAL rating of between 3 and 4 within the confines of the centres. In addition, key bus corridors, notably along Uxbridge Road and Bath Road, have a PTAL rating of 3. However, most of the borough has a PTAL of 2 or below reflecting the limited public transport options available outside the local town centres.

Car ownership

Car ownership levels in the borough are the second highest in London. A total of 78% of households have at least one car. This compares to 75% in Harrow, 67% in Hounslow, 63% [illegible] sus 2021). Outer London boroughs in general have higher car ownership levels as the quantity and frequency of bus, train and tube services is much reduced, with larger gaps in services and larger distances covered. The number of

cars owned per household is the highest of the London boroughs, with 1.22 cars per residential unit.

Walking and cycling

In Hillingdon walking accounts for 5.1% of journeys to work, and 1.1% are by bicycle, this is lower than the averages for London, inner London and outer London (refer to Table 35 on 138).

The Council does not have a comprehensive cycle network at present and there is an opportunity to improve on this. Figure 58 below shows the boroughs existing cycle network. While there are cycle routes at various locations in the borough, there is no complete network which allows easy access to the borough's main centres from anywhere in the borough. Cycling can offer an alternative to the car for shorter journeys where there are measures that reduce dangers from traffic and offer a more attractive environment for cycling. This may include vehicle access restrictions, lower vehicle speeds, priority for cyclists or overcoming barriers posed by road, rail or canal infrastructure.

Measures are being taken to improve the boroughs cycle infrastructure. The Council is working to produce a walking and cycling strategy, which will include a programme of active travel improvements. A cycle hire scheme was introduced in 2019, which connects Brunel University with Uxbridge town centre and West Drayton station improving the active travel link between the campus and town centre.

Towpaths offer a traffic free and pleasant route for walking and cycling. The Council, working with TfL and the Canal and Rivers Trust is working to undertake the Grand Union Canal Cycleway project being delivered between Paddington and West Drayton to improve conditions for walking and cycling, and further opportunities exist to improve towpaths to create a network of routes.

The Council seeks installation of cycle parking in new development and on the public highway, however there remains a lack of quality dedicated cycle parking.

Figure 58. Active travel network in Hillingdon

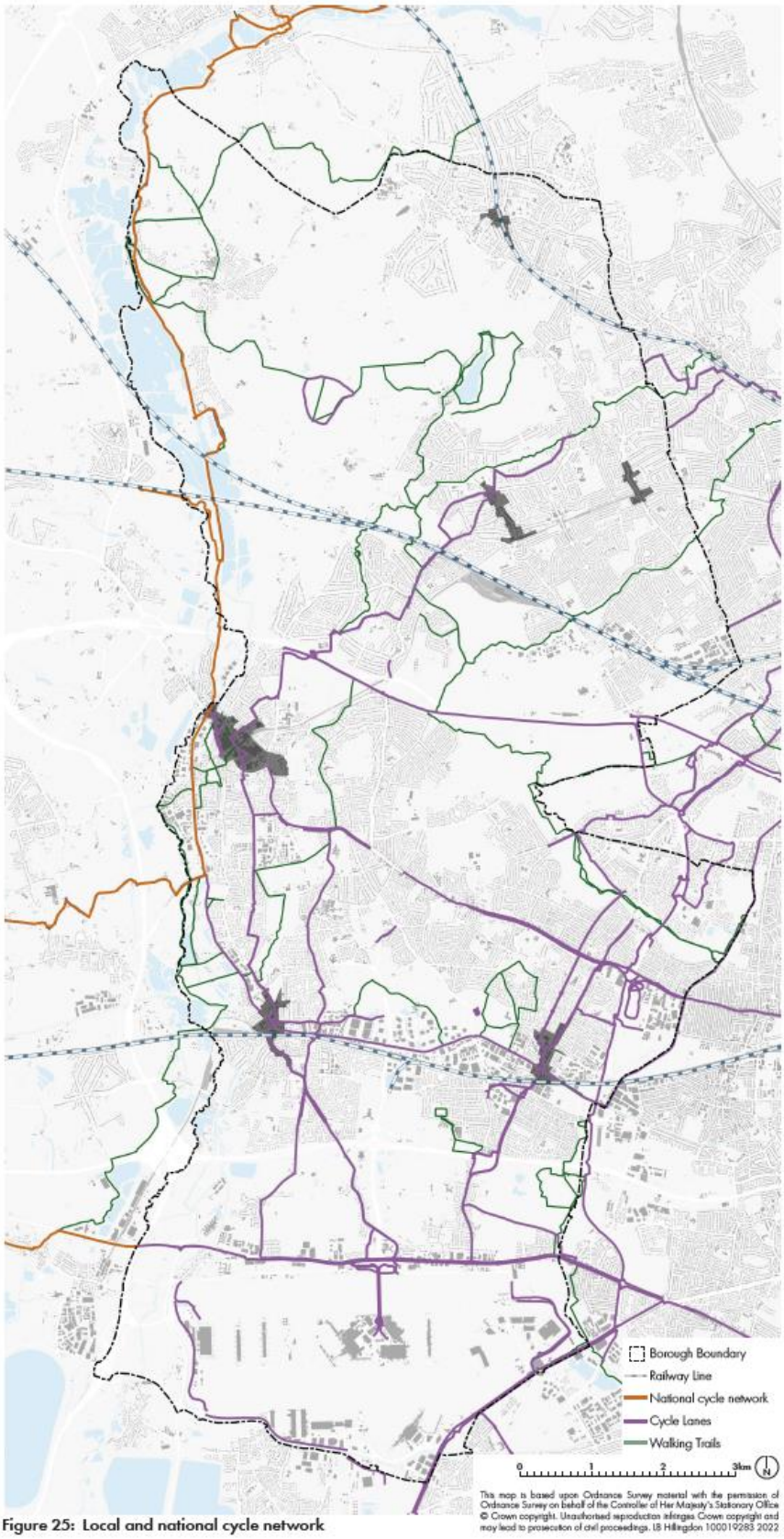


Figure 25: Local and national cycle network

Source: Hillingdon Townscape Character Study 2023

Road Network

Owing in part to its outer London location, many strategic roads run through or within close proximity to the Borough. Key routes within the borough are shown in Figure 59 and are described in further detail below.

Hillingdon's existing road network has direct links to central London and other parts of the country via the motorway and strategic road network. The Strategic Road Network (SRN) routes that run within or adjacent to the borough and are operated by National Highways include:

- The M25 London orbital motorway running north to south immediately to the west of the Borough;
- M40 which starts in the north west of the borough and provides access to the Midlands
- M4 running east to west through the southern half of the borough linking London with the south west; and
- A3113 to the immediate west of Heathrow Airport.

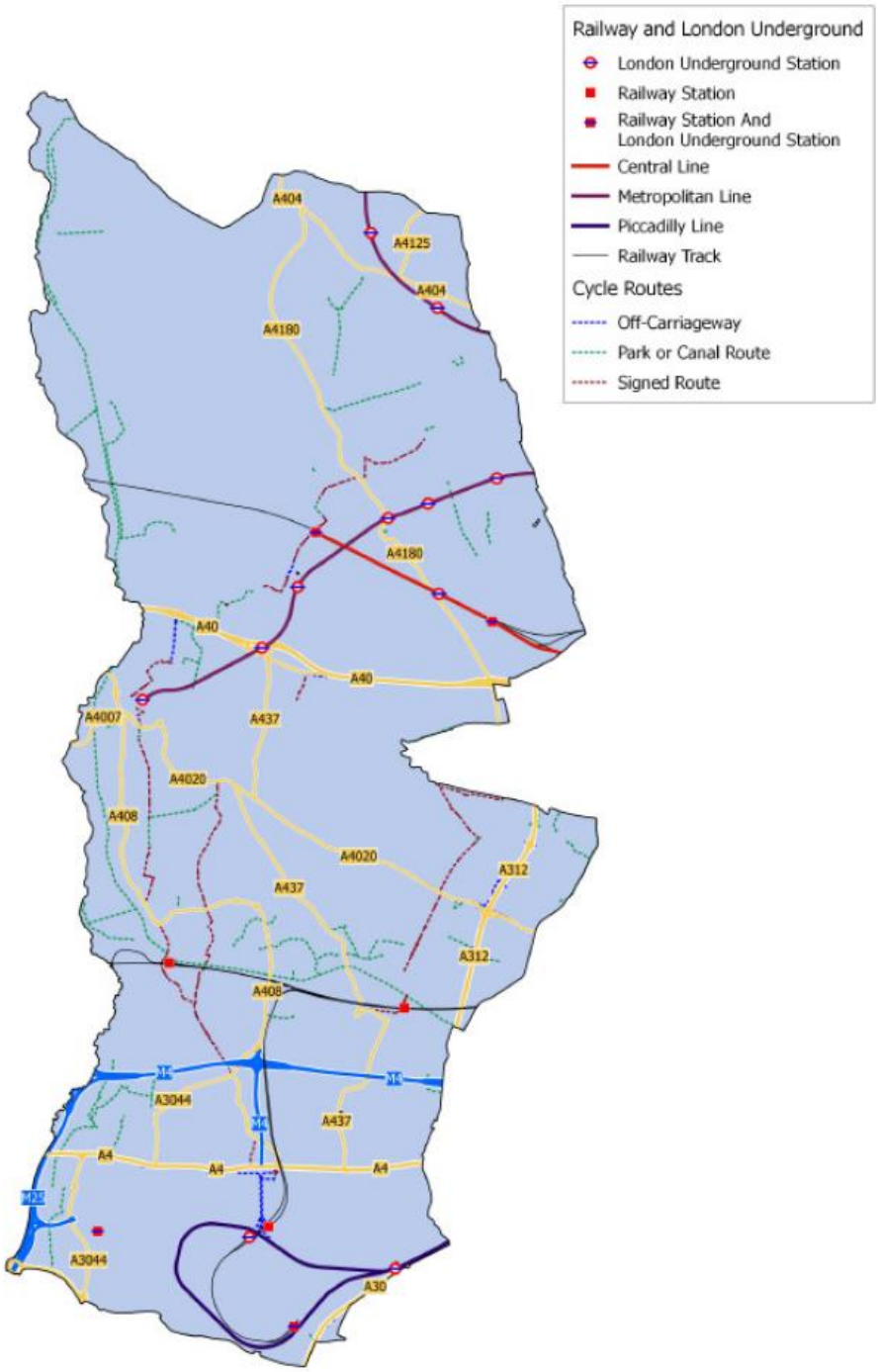
The SRN in and around the borough contains some of the busiest sections of the SRN in the country (M25 and M4). It is regularly under significant stress, particularly during peak periods, but also during the inter-peak from Monday to Friday. Care should be taken to manage impacts on the SRN.

The Transport for London Road Network (TLRN) routes that run within or adjacent to the borough and are maintained by TfL include:

- A40 (Western Avenue) which transitions from the M40 in the north west of the borough to run east-west through the northern part of the Borough;
- and A312 (the Parkway) between Polish War Memorial and Junction 3 of the M4.

Accordingly, LB Hillingdon is extremely well connected to the wider strategic highway network, albeit some of these connections are highly congested.

Figure 59. Key road, rail and cycle routes within Hillingdon



In Hillingdon 25% of people use active travel to get to work (walking, cycling, and public transport). This is lower than the average of Outer London Boroughs (31%), the London average (31%) and the Inner London average (37%) as set out in Table 35 below. Driving is the largest mode share for trips to work at 38.8%, higher than London and the inner and outer London averages.

Table 35. Method used to travel to work

	Hillingdon	**Outer London**	London	**Inner London**
Work mainly at or from home	31.6%	37.3%	42.1%	49.1%
Underground, metro, light rail, tram	6.6%	9.3%	9.9%	10.8%
Train	2.6%	5.6%	5.3%	4.9%
Bus, minibus or coach	9.4%	8.7%	8.9%	9.1%
Taxi	0.5%	0.5%	0.5%	0.6%
Motorcycle, scooter or moped	0.5%	0.7%	0.7%	0.7%
Driving a car or van	38.8%	27.4%	20.6%	10.7%
Passenger in a car or van	2.6%	2.0%	1.5%	0.8%
Bicycle	1.1%	1.9%	3.0%	4.4%
On foot	5.1%	5.5%	6.4%	7.7%
Other method of travel to work	1.2%	1.2%	1.2%	1.1%

Source: ONS Census 2021, TS061 - Method used to travel to work

Central and southern Hillingdon are generally well served by the London Underground, National Rail services and a radial bus network. By contrast the north of the Borough is less densely built up, key services and facilities are more sparsely distributed resulting in longer trip lengths with many more points of origin and destination. This pattern of land use makes public transport more expensive to provide resulting in some areas having little or no public transport services particularly on Sundays and evenings.

As result of this limited travel choice, many residents have relied on private car to satisfy their daily travel needs. The Mayor of London has set out ambitious targets for mode share which include a London-wide target for 80% of all trips to be by public transport, cycling or walking by 2041 and a target for Hillingdon of 56%. Improved public transport, active travel links should be prioritised to ensure access to essential services and facilities as well as employment opportunities, education and training, healthcare, leisure and visiting family and friends.

There are some crowding problems on rail at specific times and locations and public transport frequency and connectivity needs to be improved to tackle the Borough's predominant travel by private vehicles.

Hillingdon is surrounded by motorways, M40, M25, M4 as well as main roads A4, A40, A312, and A404 all of which carry significant traffic flows generated in part by the demand to access Heathrow Airport which increases congestion while delaying journey times for buses. In addition, the borough lacks a coherent cycle network, reducing the ability for people to partake in active travel.

Future

There are opportunities to reduce car dependency within the borough, through improvements to active travel links, facilitating multi-modal journeys, and improving public transport access and links. There will also be opportunities through the Local Plan to reduce car dependence and decisions on the distribution of development growth will have an impact on the level of car-dependence moving forward.

Hillingdon's location on the periphery of London with key strategic road links passing adjacent and through the borough will make managing general vehicle traffic, challenging for the Council. This will need to be addressed through collaborative working with TfL and neighbouring boroughs to reduce traffic levels, particularly through-traffic and improve air quality throughout the borough with a prioritised focus in the identified air quality hotspot areas.

Improving orbital north-south connections within the borough for more sustainable modes remains a goal for the Council. Recent years have seen improvements through completion of the Elizabeth line and associated bus network improvements and new bus 'Superloop' services.

There is a general lack of strategic cycle networks relative to other boroughs, restricting the opportunity for a modal shift to cycling. The borough has the opportunity to fill the gap for areas with lower Public Transport Access Levels (PTAL) by providing attractive active travel links to public transport hubs, facilitating multi-modal journeys and maximising the potential of the existing public transport network.

The Hillingdon Strategic Infrastructure Plan (SIP) 2017 outlines a need to invest in transport infrastructure improvements for walking and cycling routes, public transport, roads, bridges and junctions to accommodate growth in the borough and switch to more sustainable modes of transport. A new strategic infrastructure plan will be prepared as part of the Local Plan which will include changes to the network since 2017.

Aviation

Hillingdon is home to two major airports, Heathrow and Northolt. In addition, further to the West of Harefield outside of Hillingdon is Denham Airfield. Heathrow is one of the busiest and largest international airports in the world. It covers an area of 1,227ha and manages an average of 1,299 air transport movements per day (2017 figures). RAF Northolt is much smaller scale. The airfield is the RAF's focus for its London-based operations.

All three airports create limits on the height to which buildings can be developed in the surrounding area. The height limits created by Heathrow Airport are shown on Figure 60 below.

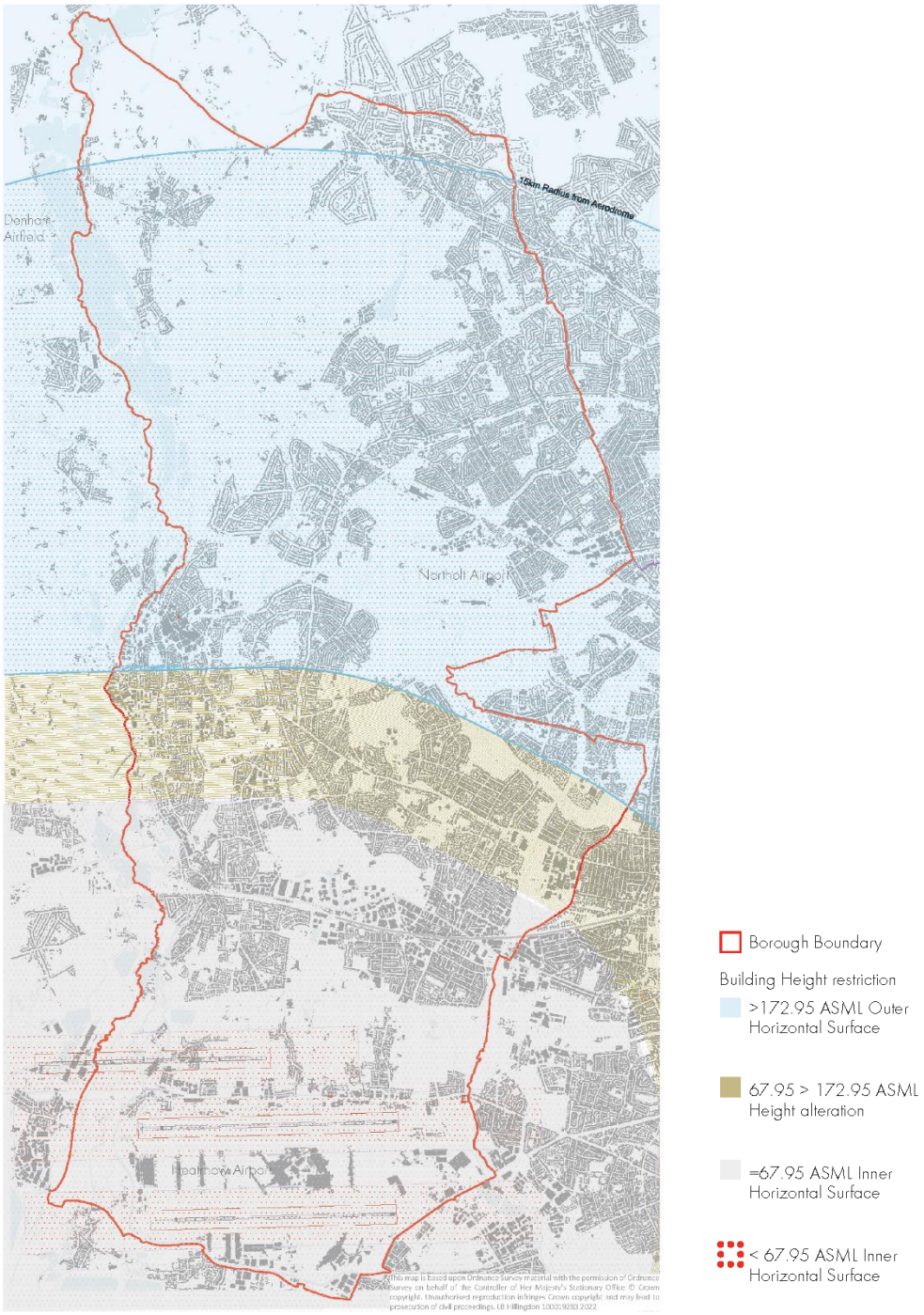
Northolt and Denham Airfield review each application on a case-by-case basis.

Hayes as an approximate AOD of 32.0m with a defined height limit of 67.95m. This results in possible 11 residential storeys (assuming 3m floor to floor height).

Uxbridge has an approx. AOD height of 43m with a defined height limit of 172.95m. This results in possible 43 residential storeys (assuming 3m floor to floor height).

Buildings within the yellow height restriction zone could reach between 11 and 43 storeys.

Figure 60. Height restrictions created by Heathrow Airport



Source: Hillingdon Townscape Character Study 2023

Sustainability issues

- PTAL varies across the borough, however large parts, particularly in more rural parts of the borough are characterised by relatively low levels. There are limited public transport options available outside the local town centres.
- A high proportion of Hillingdon's residents travel by private car, significantly higher than the Outer London average.

- Central and southern Hillingdon are well served by the public transport services in comparison to the north, which is less densely built up and the sparse distribution of facilities and services leads to longer trip lengths.
- There is an opportunity to further improve North to south orbital connections.
- There is a low level of existing cycle infrastructure in the borough. Opportunities exist to increase trips by bike by providing quality segregated cycle routes and improving conditions for cyclists on existing roads through measures such as vehicle access restrictions, lower vehicle speeds and improved crossings.
- There are significant opportunities to reduce car-dependency and maximise the benefits from recent and planned investment in public transport infrastructure in the borough, which will have positive effects on other sustainability indicators.
- Airports in and near Hillingdon create a constraint on the height of buildings. This will have effects on the design of large-scale developments and tall buildings.

Likely evolution without the Local Plan

- Without local planning policies, including supporting the London Plan, poor connectivity and reliance on the private car will worsen as the population grows and the pressure on the existing transport system increases. Increased traffic and congestion would cause a host of negative impacts, including on air quality, carbon emissions, noise, amenity, road safety and travel times. There is a risk that new development would be located in the least sustainable parts of the borough without local policy direction.
- Investment in public transport infrastructure by other bodies will have a significant effect. Local plan policies are needed to work in concert with improved provision to reduce car reliance and to maximise the benefits from recent and planned investment in line with the London Plan.

3.19 Energy infrastructure

Baseline

Policy context

The supply of energy to homes and businesses is crucial to the functioning of our city, daily activities and economy. Population and economic growth in London continues to lead to an increase in energy demand. This will mean more pressure on the supply of energy to the capital. Depending on the scale of additional supply required, this investment could be significant.

The UK Government has committed to a 2050 Net Zero target. The decarbonisation of transport and heating, alongside low and net zero carbon generation, and improvement in the energy efficiency of homes and buildings are critical to meet this. The energy infrastructure environment is especially dynamic at present, particularly as a real strategic shift towards carbon reduction and the use of renewable energy sources have become core to national and sub-national policy direction.

The Mayor's overarching energy objective for 2050 is to ensure London's energy infrastructure is developed in a way that delivers:

- Security and reliability of supply;
- Affordability and cost-competitiveness of energy;
- An 80% carbon dioxide emissions reduction by 2050 in line with Mayoral and national government policy.

The Mayor's London Environment Strategy (2018) aims for London to be a zero carbon city by 2050, this is underpinned by three high-level objectives:

- Decarbonise London's homes and workplaces while protecting the most vulnerable by tackling fuel poverty;
- Develop clean and smart, integrated energy systems using local and renewable energy resources; and
- Deliver a zero-emission transport network by 2050.

As with many types of infrastructure, energy infrastructure cannot be planned for at purely a borough level, and it must be addressed at a regional and national level. London's energy infrastructure must supply energy securely and reliably, provide affordable and cost-competitive energy, and deliver an 80% reduction in carbon dioxide emissions by 2050, in line with Mayoral and national government policy. New and existing energy infrastructure must also be made resilient to climate risks.

Key actions required include:

- Ensuring security of energy supply and connections
- Retrofitting existing buildings to reduce energy usage
- Producing low carbon energy
- Producing energy locally

A 2018 report by the West London Sustainability and Climate Change Policy Commission also sets out four strategies to transition to a 'Green City':

- Reducing carbon emissions from electricity to zero by 2032 and heat by 2050, by reducing energy consumption and increasing the use of renewable distributed energy;
- The roll out of smart city technologies to drive more efficient consumption and quality of life;
- The adoption of circular economy principles by West London business; and
- A cleantech cluster in West London supporting low carbon growth.

How energy is provided

The West London Alliance Strategic Infrastructure Delivery Plan (WLA SIDP) sets out how energy is provided in the west London area.

Electricity provision consists of National Grid for the transmission network and overall system operation, Distribution Network Operators (DNOs) for the distribution networks and Licensed Electricity Suppliers (LES) for the sale to end users. In West London, the electricity DNOs are UK Power Networks (UKPN) and Scottish & Southern Electricity Networks (SSEN).

The DNOs agree investment plans with Ofgem through the regulated business plan process and Ofgem's main interest is protecting against unnecessary price rises. In general, there is no investment 'ahead of need' due to the uncertainty of supply requirements and risk of excess costs (than what can be recovered through customer bills)[41]. Rather, requests made outside of regulated plans for development capacity are covered by the requestees, resulting in sunk costs for first movers that can constrain viability and delay developments. The developing London Energy Plan recognises these challenges and is proposing solutions such as the bearing of risk by developers for unused provision or excess cost, with potential contribution from boroughs.

For gas, the DNOs in the boroughs are Cadent Gas and Southern Gas Networks, alongside smaller networks for licensed operators. National Grid operates the National Transmission System (NTS) which transports gas from terminals to Local Distribution Zones (LDZ), including London. Connections are assessed on a first come first basis and not ahead of need, so that capacity available today may not be available tomorrow, which impacts development certainty.

Overall, electricity demand is expected to increase in London in response to population growth and through the increased demand from electric vehicles and electric heating systems. The electricity network is at capacity in some areas of London and this will need to be addressed according to the rate and locale of projected population growth, such as for the Opportunity Areas, with substations and wiring infrastructure requirements expected.

Usage and requirements

Several of these substations are currently at maximum capacity. Studies have estimated infrastructure pressures and requirements, including an estimate that the current system is constraining over £200m in electricity infrastructure investment that would unlock new development areas, with GLA estimating a need for 8 to 9 new substations for London.

Demand for natural gas in London has been decreasing, with a 25% reduction since 2000 and this is expected to continue due to improved efficiency, decarbonisation of the electricity grid and availability of low carbon decentralised energy alternatives. The London Plan identifies that local infrastructure improvements may be required to supply energy centres as part of heat networks, that will support growth in Opportunity Areas, and there may also be a requirement for the provision of new pressure reduction stations.

Hillingdon has the fourth highest electricity consumption of the local planning authorities in London, behind Westminster, Tower Hamlets and the City of London as set out in Table 36 below. There is particularly high consumption in the non-domestic sector. It is likely that this consumption will increase following development of energy intensive data centres in the borough.

[41] SSEN undertake strategic planning through Distribution Future Energy Scenarios (DFES), which is an annual publication that models network load scenarios out to 2050.

Table 36. Electricity consumption in London Local Planning Authorities 2022

Country or region	Local authority	Total consumption (GWh): All Domestic	Total consumption (GWh): All Non-Domestic	Total consumption (GWh): All meters
Inner London	Westminster	451	2724	3175
Inner London	Tower Hamlets	411	2006	2417
Inner London	City of London	26	1622	1647
Outer London	Hillingdon	392	1181	1573
Inner London	Camden	313	1169	1482
Outer London	Ealing	444	898	1342
Inner London	Newham	362	945	1307
Inner London	Southwark	409	845	1254
Inner London	Kensington and Chelsea	322	884	1207
Outer London	Hounslow	357	808	1165
Outer London	Brent	399	738	1136
Outer London	Croydon	531	582	1113
Outer London	Barnet	580	455	1035
Inner London	Islington	282	683	965
Inner London	Lambeth	396	564	960
Outer London	Enfield	434	501	935
Inner London	Wandsworth	461	468	929
Inner London	Hammersmith and Fulham	263	614	877
Inner London	Hackney	317	516	833
Outer London	Bromley	484	343	827
Outer London	Greenwich	345	432	776
Inner London	Haringey	328	407	736
Outer London	Bexley	327	395	722
Outer London	Havering	351	358	709
Outer London	Merton	284	425	708
Inner London	Lewisham	373	266	638
Outer London	Sutton	287	335	622
Outer London	Waltham Forest	311	299	610
Outer London	Redbridge	359	231	589
Outer London	Richmond upon Thames	299	282	581
Outer London	Barking and Dagenham	235	317	552
Outer London	Kingston upon Thames	236	287	523
Outer London	Harrow	319	194	513

Source: Department for Energy Security and Net Zero: Subnational electricity consumption, Great Britain, 2005 - 2022

Energy provision is instrumental to London's decarbonisation target, whereby electricity accounts for nearly half of the city's CO2 emissions. GLA analysis of GHG emissions shows that 36% of emissions come from homes, where heating and water are the significant drivers, 40% from workplaces and 24% from transport.

As such, retrofitting existing buildings and the application of standards in new build developments is important alongside energy demand reductions and the provision of low carbon and decentralised sources to enable carbon reduction targets to be achieved. Modelling shows that the decarbonisation of energy grids is critical, beyond transport emissions, for London to reach net zero. Carbon capture and storage will also be part of the solution for the remaining emissions that cannot be directly reduced.

In West London, in recent years there has been a rapid influx of new electricity connection requests from large demand users (e.g. data centres). The scale of electricity demanded by these users has created capacity constraints on both the distribution and transmission networks in the region, absorbing remaining electricity capacity. Regionally unique processes have been put in place to facilitate smaller scale connections in the short-term, although significant constraints remain for large demand users. This has the potential to be a key constraint for economic growth, infrastructure delivery and ambitions to decarbonise.

Further details

Further details on energy infrastructure needs, requirements and challenges for the west London area, and a more detailed analysis of the policy context, can be found in the WLA SIDP and work being taken alongside the Infrastructure Coordination Service and relevant partners.

Sustainability issues

- Energy infrastructure cannot be planned for at just borough level and will require wider strategic planning.
- London's energy infrastructure must supply energy securely and reliably, provide affordable and cost-competitive energy, and deliver an 80% reduction in carbon dioxide emissions by 2050, in line with Mayoral and national government policy.
- Key requirements include ensuring security of energy supply, retrofitting existing buildings to reduce energy usage, producing low carbon / renewable energy and producing energy locally.
- The proportion of energy coming from renewable sources must be increased.
- Energy infrastructure must be resilient to the effects of climate change.
- There is a regional constraint on power connections which may slow or prevent new development coming forward, particularly schemes involving larger connections.

Likely evolution without the Local Plan

- Without local policies, energy supply issues are likely to worsen over the longer term. The London Plan and NPPF contain useful measures, however additional local measures could help decrease energy usage, provide new sources of energy and help produce energy more sustainably. They can also help locate new energy infrastructure in the areas where it is most needed and useful in the borough. There are also specific requirements to look at energy infrastructure in areas of high growth.
- Whilst ensuring sufficient power supply and connectivity is outside the remit of the local planning authority, it is important to understand this work so that solutions can be coordinated and implemented as swiftly as possible.

3.20 Digital connectivity

Baseline

An internet connection is now considered the fourth utility, with new services moving online and companies increasingly reliant on the web for business. This is enhanced with emerging future working trends, patterns of consumption and leisure time and supporting growth sectors with green and knowledge intense businesses. Digital connectivity supports the productivity of existing businesses, the start-up and survival rate for new businesses, as well as efficiencies in public service provision.

From a regional perspective, in order to remain the world's most competitive city, and an attractive place to live, London needs to ensure the availability of affordable high-speed internet for every resident and business.

Robust full fibre and 5G systems are a requirement for 'Smart City' technologies and will help future-proof West London's local places, with the facilitation of more efficient travel, consumption patterns, sustainability and climate change responses and quality of life improvements.

The Government has made commitment to full fibre for 15million properties by 2025 and coverage across all parts of the UK by 2033. For 5G, the Government has made commitment for the majority of the UK to be covered by 2027

The 2017 Digital Connectivity in London report placed the city's economic productivity and international competitiveness at threat from its digital deficiency. London ranked 30th out of 63 cities across the UK for high speed broadband coverage. Across London there is a push to address this.

The London Plan (Policy SI6) sets out digital requirements for development proposals to support London's future competitiveness:

- ensure that sufficient ducting space for full fibre connectivity infrastructure is provided to all end users within new developments, unless an affordable alternative 1GB/s-capable connection is made available to all end users;
- meet expected demand for mobile connectivity generated by the development;
- take appropriate measures to avoid reducing mobile connectivity in surrounding areas; where that is not possible, any potential reduction would require mitigation; and
- support the effective use of rooftops and the public realm (such as street furniture and bins) to accommodate well-designed and suitably located mobile digital infrastructure.

The main challenges around digital connectivity in London include:

- Addressing areas of London which have poor connectivity, and
- Increasing take-up of superfast broadband.

The West London Alliance are also working together to implement a West London Digital Strategy with a principle of shared learning, engagement with providers, the collation and use of supporting data, common approaches to network access and the development of 5G use cases.

The presence of fibre optic cables that pass through the south of the Borough along the M4 corridor, which the cross the Atlantic, makes this part of London attractive for certain uses (e.g Data Centres).

Current provision

Around 52% of London had full fibre to the premises (FTTP) connection in 2019, and the latest Ofcom data[42] (as at 2023) shows a current London average of full fibre availability to be 52.55%. This is a significant improvement over that time period.

For Hillingdon the latest connectivity data shows That 46.4% of the borough has access to full fibre.

In terms of access to super fast, gigabit and full fibre broadband, Hillingdon's digital connectivity is very similar to the London average, as shown in Table 37 on page 148:

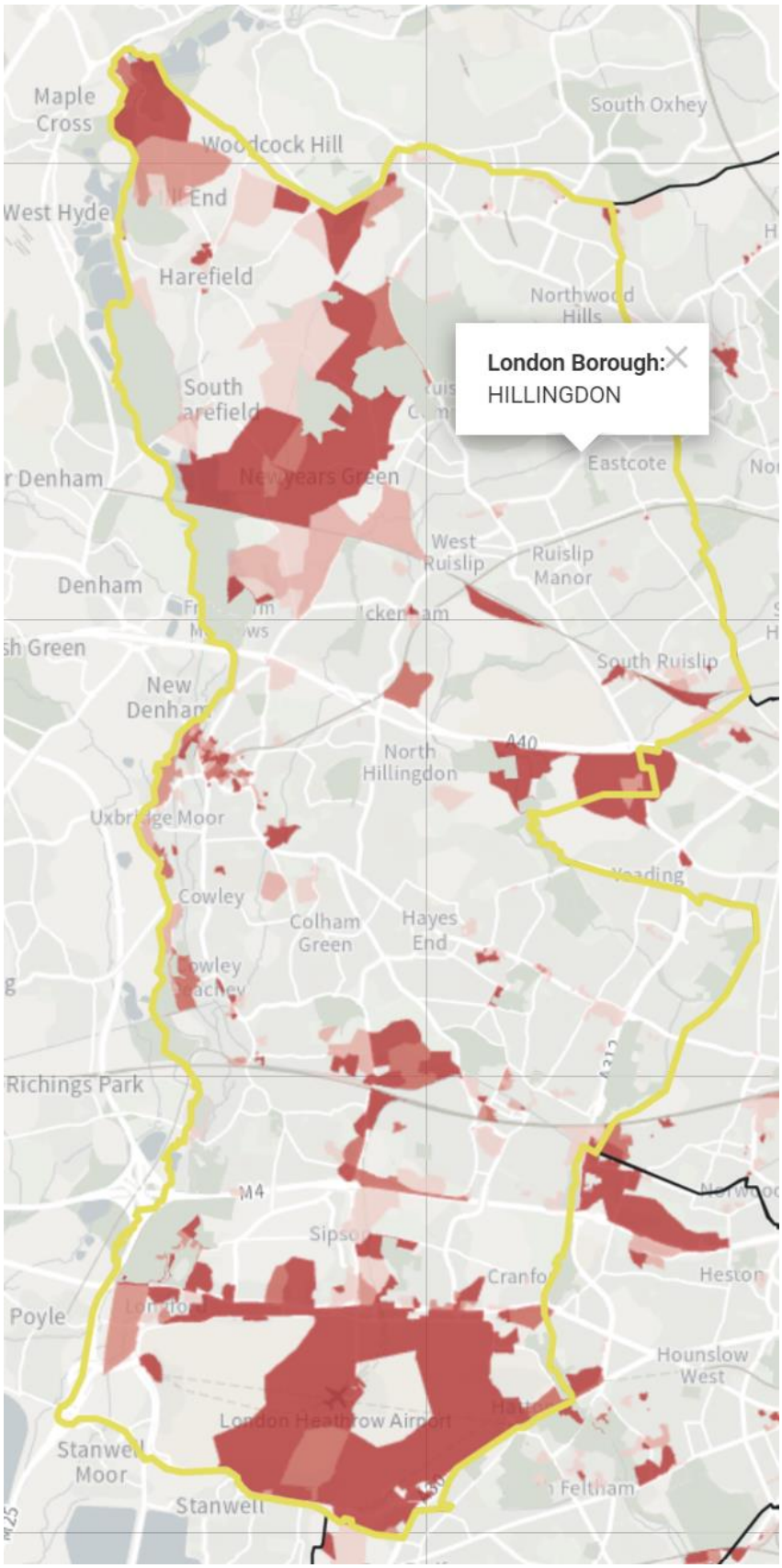
[42] London Connectivity

Table 37. Digital connectivity in Hillingdon. Proportion of properties with access to different broadband services

	Super-fast	Gigabit	Full fibre
London average	97%	84%	53%
Hillingdon	97%	88%	46%

Source: Ofcom 2023

Figure 61. Areas with limited digital connectivity in Hillingdon



Source: Ofcom

Areas with very limited access to any speed of broadband services are found in West Ruislip, Harefield and large areas in the south of the borough. These are highlighted in darker red in the map above. Areas with poorer broadband connectivity than other parts of the borough are highlighted in shades of red, the darker areas indicating poorer digital connectivity.

Further details

Further details on digital infrastructure needs, requirements and challenges for the west London area, and a more detailed analysis of the policy context, can be found in the WLA SIDP, as well as the London Connectivity Map.

Sustainability issues

- Some areas in the borough have poor digital connectivity.
- Full fibre to the premises connectivity is not widespread in Hillingdon.
- The presence of fibre optic cables that pass through the south of the Borough make it attractive to certain users.

Likely evolution without the Local Plan

- Installation of the broadband and 5G network is not a core responsibility of the Local Plan, as it needs to be carried out by digital infrastructure providers. However, the Local Plan can require that new buildings and developments include the most up to date digital infrastructure. The Local Plan can also help deliver digital infrastructure through policies on the design and location of 5G infrastructure, which are often contentious.

3.21 Education infrastructure

Baseline

Early years and child care

Hillingdon has 18 children's centres where they provide a range of services, activities, information and guidance tailored to meet the requirements of families with children aged five and under.

Reporting in the London Borough of Hillingdon Strategic Infrastructure Plan (Hillingdon SIP) in 2017, there were a lack of places for disadvantaged two-year olds whose parents are entitled to free child care, which is a significant issue in the Hayes area. There was a shortfall of 299 places to meet current need across the borough and 109 in Townfield and 57 in Botwell, where there will be significant growth in Hayes Housing Zone. Provision for 0-5 childcare was at 98% capacity.

The Government has recently announced plans for greater funding of early years child places. From September 2024 eligible children aged between nine months and two years will get 15 hours, and from September 2025 eligible children aged between nine months and three years will get 30 hours. This will create an increase in demand for new places, in a context whereby the number of places has been declining nationally. The current shortage of

places is already particularly acute in London, where childcare costs are considerably higher than in any other English region (London Education Report 2021).

Primary and secondary

The current school population in the London Borough of Hillingdon is 53,179 (according to the School Census, January 2023). This has been rising over the last 8 years as show in Figure 62, below. Among the maintained schools, academies and free schools, there are: 68 primary schools, 22 secondary schools, 7 special schools, 1 Alternative Provision and 1 nursery. 50 are maintained, 40 are academies and 9 are free schools. The distribution of these across the borough is shown in Figure 63.

Figure 62. Pupils on roll – as per Jan School census, 2014/15 to present

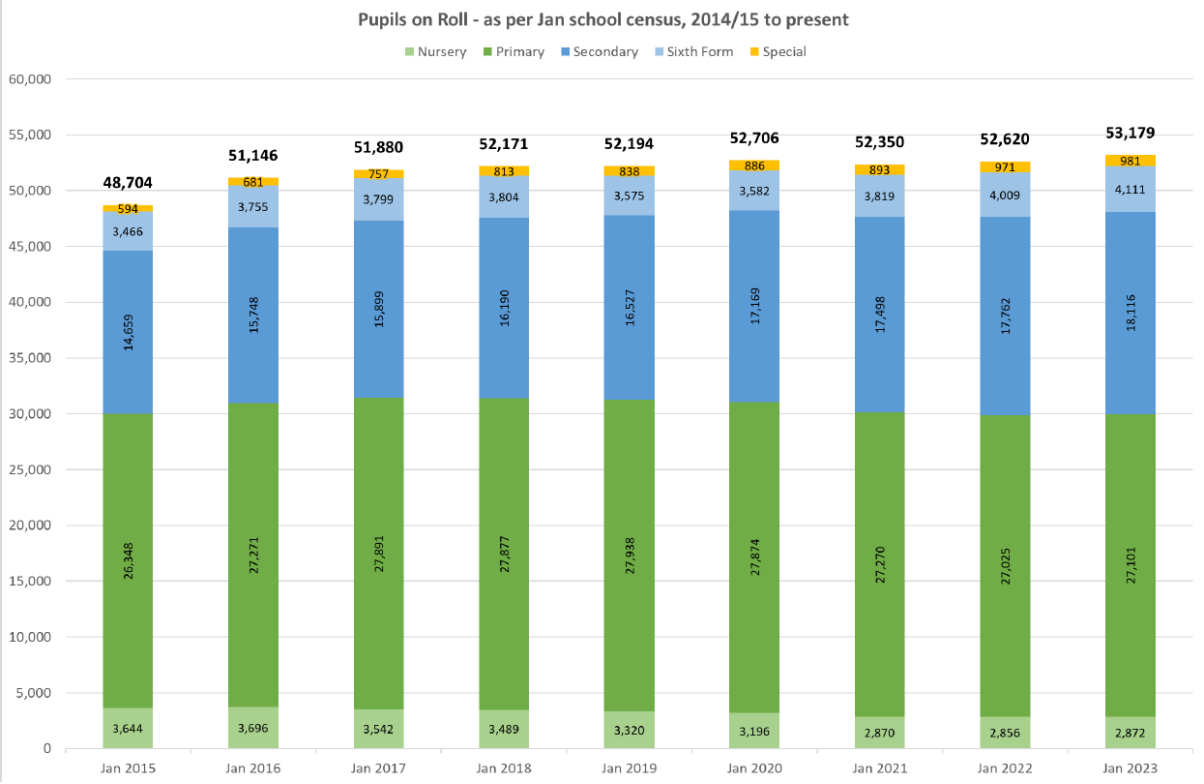
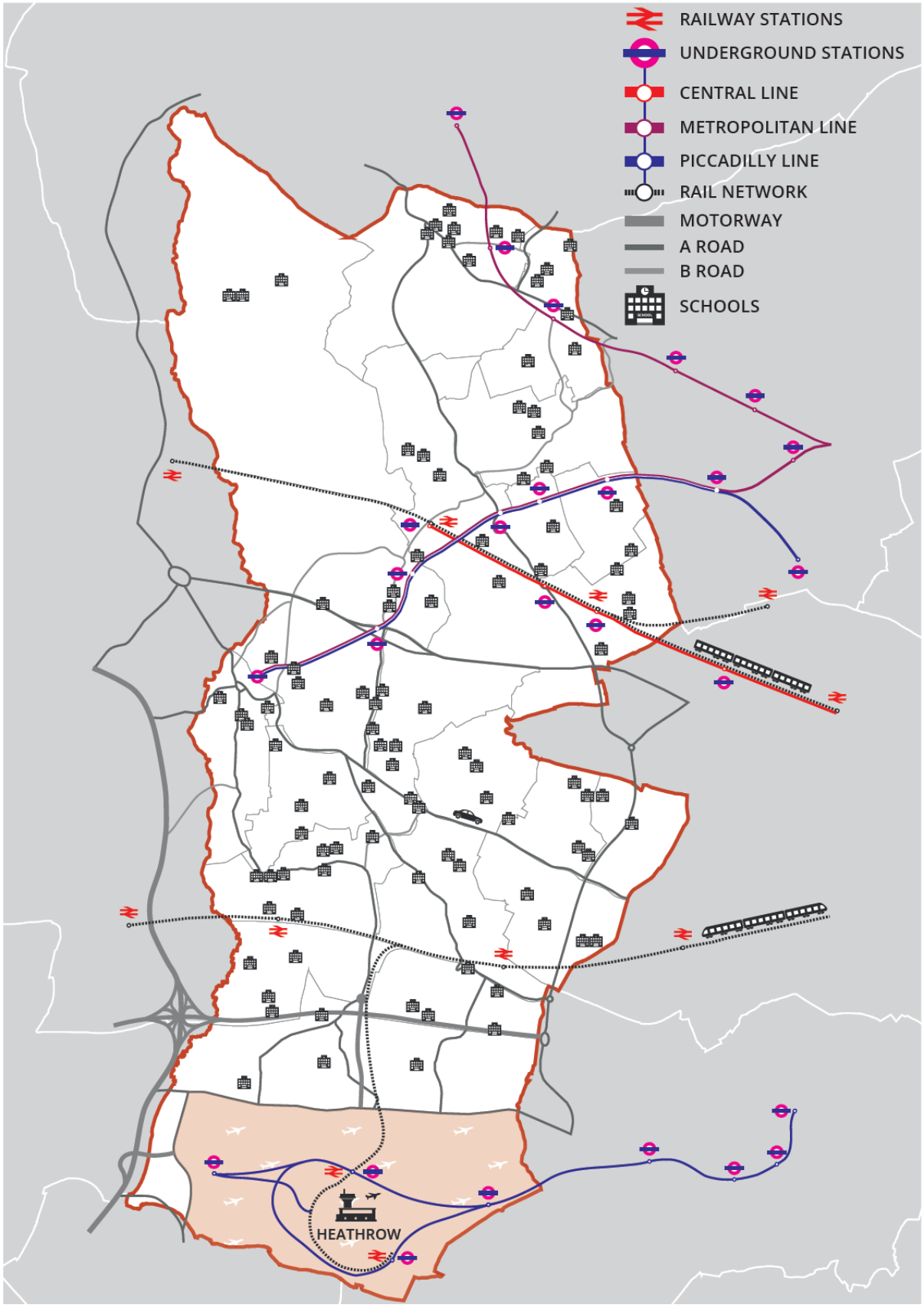


Figure 63. Distribution of schools across LB Hillingdon (2017)



Primary school places

- There has been a falling birth rate in Hillingdon since 2016 which has led to a long-term trend of falling demand for primary school places.
- The demand for primary school places in 2022 was approximately 27,100.
- The demand is projected to gradually decline in coming years, estimated to reduce to approximately 23,900 by 2030 (a decline of around 12%).
- In response, a number of primary schools have reduced their places to account for lower demand.
- There are no primary schools in Hillingdon where a shortfall of capacity has been identified.

Secondary school places

- For secondary school places, there is projected to be increased demand in the next three years, followed by a return to current levels.
- Parental preferences for good or outstanding schools leads to additional pressure in some schools and excess space in others.
- The demand for secondary school places in 2022 was approximately 22,200 places.
- In the period 2022-2025 demand is projected to increase, reaching a maximum of 23,300 places (a 5% increase).
- In the period 2025-2030 it is projected that demand will gradually return to levels just below current levels at approximately 21,600 places.
- To accommodate changing demand, bulge classes have been utilised at multiple schools, additional permanent places have been added at Harlington School, and some places reduced at Oak Wood School.
- It is anticipated that additional demand can be accommodated at existing schools.

Special needs

- The demand for school places for children with special educational needs is projected to increase. The number of residents with special educational needs in 2023 was 3,346 and this is projected to increase to 5,675 by 2033. This increase reflects national and regional trends.
- This has created additional demand for special school places. Currently all seven special schools in Hillingdon are full as demand is high and new entrants filling available places as soon as a child leaves the settings. The largest growth in demand is for pupils with Autism Spectrum Conditions, many with additional complex secondary needs. Temporary extra places have been created to meet demand in most schools.
- Extra specialist places are needed in Hillingdon in the next few years to meet the rising demand and to reduce the reliance of independent and out of borough provision and travel distances for residents.

Further education

Higher education plays a vital role in ensuring Londoners have the skills necessary to succeed in a changing economy, and for the capital to remain globally competitive.

Within Hillingdon, higher education facilities include Brunel University Uxbridge and its Central Research Laboratory Hayes, and the Uxbridge Campus of the Buckinghamshire New University.

As stated in the West London Alliance (WLA) Strategic IDP 2021-2040, Brunel University has identified that it is likely that student numbers will continue to grow in the coming years, which will increase the need for accommodation, transport and other elements of infrastructure. In terms of accommodation the university has stated they are likely able to meet the requirement within the campus, subject to appropriate planning and development. There will be a need for the university to work closely with Hillingdon hospital and the local council to ensure shared infrastructure challenges are addressed with holistic solutions.

The WLA Strategic IDP 2021-2040 has also highlighted that Buckinghamshire New University has Uxbridge and Pinewood campuses, with important interactions with creative-media partnerships and Hillingdon hospital placements, and it offers places to residents across the North-West London corridor. The IDP identified challenges with connectivity as students lack convenient and sustainable access to and between the campuses, where a bus connection service currently exists between the campuses. The university may also require additional space into the future with the development and consolidation of new offers and facility partnerships.

Sustainability issues

- Qualification levels of Hillingdon's population are comparable to the London average and favourable when compared against the England average.
- Early year childcare provision remains expensive and there is a need for additional places, although the Planning System's capacity to address this issue is limited.
- While the demand for primary school places is declining in general, increased development in some areas may create demand for additional places.
- Demand for secondary places is set to increase then return to current levels in the longer term. While it is currently anticipated that this increase can be met at existing schools, this should be kept under review, particularly where large amounts of housing are to be developed.
- Sustainable transport options to Hillingdon's universities needs to be improved.

Likely evolution without the Local Plan

- Without local plan policies which support and plan for the provision of education infrastructure locally in the places it is needed, there could be a mismatch in demand and supply of school places with impacts on education outcomes and long-term educational achievement. This could lead to social deprivation and poverty and a reduced ability to participate in the labour market.
- The Local Plan provides an opportunity to ensure that large scale housing developments incorporate space for schools and other education facilities where they are required.

3.22 Emergency services

Baseline

Metropolitan Police Service

Hillingdon is unique in terms of its requirements for police provision. Whilst Heathrow has its own dedicated police team, recent development at the airport, including Terminal 5 and the redevelopment of Terminal 2 will have a significant impact. A key challenge over the period of the Local Plan will be the continued need for community policing.

The MPS is reviewing the whole of its property estate to ensure they are making the best use of space, allowing it to exit under-occupied and outdated buildings and to replace them with more modern, efficient and geographically responsive facilities. They are currently working on the new Estate Strategy which is expected to be published soon. Once the Estate Strategy is confirmed and approved by The Mayor's Office for Policing and Crime (MOPAC), MPS will be able to advise on existing capacity and accommodating growth.

London Ambulance Service

The London Ambulance Service operates from three sites in Hillingdon: Hillingdon ambulance station, Hayes ambulance station and Pinner and Northwood hospital. The estate as a whole is currently being rethought as part of the London Ambulance Service Strategy 2023-2028. This includes ensuring ambulance stations are in the best locations, which may mean consolidation of stock in some areas and the opening of new ambulance stations in others. Early engagement with the LAS will be important to plan appropriately.

London Fire Brigade

The London Fire and Emergency Planning Authority (LFEPA) governs the London Fire Brigade and is responsible for strategic direction and determining policy, setting priorities and monitoring performance.

There are four Fire Stations in Hillingdon, situated in: Hayes, Heathrow – Heathrow Airport, Hillingdon and Ruislip. Station grounds are not consistent with borough boundaries and some of these facilities serve parts of adjoining boroughs.

Plans to accommodate growth in the Borough up to 2026 are highlighted in the Hillingdon SIP 2017.

Sustainability issues

- As operational demands change within the emergency services there may be a need for either expansion or rationalisation of premises.
- New developments including large scale mixed use, industrial, and the expansion of Heathrow may create new demand for emergency service provision.
- New development can be designed in ways that either worsen or enhance public safety outcomes.
- The needs of emergency services should be considered on schemes affecting the road network, for example on large scale regeneration and schemes promoting walking and cycling where motor vehicle access is affected.

Likely evolution without the Local Plan

- Development Plan policies can protect facilities from being repurposed to higher value uses and support their expansion.
- While the emergency services seek sites on the open market, there may be a need to consider the provision of space for emergency services where large scale strategic level redevelopment is taking place.
- New development can be designed in a way that reduces the burden on emergency services, by promoting things like Designing Out Crime or Active Travel.
- Locating new development in sustainable locations at sustainable densities can also improve access to facilities and reduce the burden on emergency services.
- The needs of emergency services should also be considered when planning for transport impacts with appropriate policies and guidance.

3.23 Noise and vibration

Baseline

Noise and vibration have a range of sources including roads, rail, aviation and leisure uses (e.g. bars and music venues). Hillingdon is home to a number of uses with significant noise impacts - in particular the motorways of the M25, M4, and A40, Heathrow Airport and RAF Northolt. The impacts of these noise producing uses will need to be considered in plan making. Some of these uses may also be of strategic importance to London and require protection from noise sensitive uses, in order to ensure they can operate effectively in the future.

Sustainability issues

- Management and control of environmental, neighbour and neighbourhood noise can avoid adverse impacts on health and quality of life.
- As the population grows, more and more people will be exposed to noise and effective noise reduction/mitigation measures will be needed.
- As well as reducing noise, quiet places throughout the borough need to be preserved for the enjoyment of people and the protection of wildlife and their habitats.
- Operational or physical changes at Heathrow Airport may introduce new noise impacts within Hillingdon.

Likely evolution without the Local Plan

- More of the population has the potential to be exposed to unmitigated adverse noise as the population grows and more development occurs. Without local planning policy, the opportunity to ensure separation with noise-sensitive uses, minimising adverse noise and ensuring good acoustic design principles are incorporated in development would be missed.
- The implementation of national and regional planning policy is reliant on local implementation and therefore will not be achieved without a Local Plan.
  Without a Local Plan there will be no strategic level planning to minimise the relationship between critical uses that generate noise and noise sensitive areas, potentially leading to impacts on residents.

5 Stage A4: IIA Framework

Following a review of relevant plans, policies and programmes, the review of baseline conditions in the borough and the identification of key sustainability, equality and health related issues affecting the borough, IIA objectives have been developed (see Table 39 on page 159). The development of a set of IIA objectives helps to assess the likely significant environmental, social and economic effects of the new Local Plan.

In preparing the IIA objectives, a review of the IIA Scoping Report objectives for the London Plan (2021) was also undertaken, as the new Local Plan must conform with this spatial development strategy. The London Plan scoping report also uses baseline information and reviews plans, policies and programmes which are relevant to London boroughs as well, meaning many of its IIA objectives are likely to be relevant to Hillingdon.

The objectives identified in the SA scoping report for the Hillingdon Local Plan Part 1, undertaken in 2004, were also reviewed, and many of the objectives were found to be broadly still relevant today. However, these objectives were formed using a review of plans, programmes and strategies and baseline information which is over 15 years old and so it is not considered wise to use this as a starting point. The London Plan IIA Scoping Report (2017) is more useful in helping to identify the key issues affecting Hillingdon today, and its objectives are more current and relevant to the issues facing Hillingdon and London more generally.

The IIA Framework comprises a series of objectives against which the sustainability performance of the Local Plan and its alternative policies will be appraised. As well as all the topics specifically required by the SEA Regulations, equality and healthy issues will also be addressed by these objectives. The IIA objectives are informed by the key issues identified in stage A3 and the London Plan IIA objectives. They also align with wider international, national and local environmental, health, social and economic policy objectives.

The IIA Framework will be used to assess, refine and develop policies as the Local Plan progresses. The appraisal of the Local Plan policies and its alternatives against the IIA Framework will be guided in part by guide questions (see 0), which will address different elements of the IIA, including the EqIA, SA and HIA. These will help ensure a thorough appraisal process.

0 on the following page identifies which IIA Objectives relate to different SEA topics. As many issues are cross-cutting, there is an overlap with many of these.

Table 38. IIA objectives and their relation to different SEA topics

SEA Topic	IIA Objective
Material assets	1, 2, 4, 10, 20
Climatic factors	5, 8, 9, 12, 13, 14, 15, 16, 18
Biodiversity	12, 22
Fauna	12, 22
Flora	12, 22
Water	17, 18, 22
Soil	19, 22
Air	8, 13, 14
Cultural heritage, architectural and archaeological heritage	11
Landscape	6, 7, 22
Population	1, 2, 4, 9, 10
Human health	3, 8, 21

Table 39. IIA objectives and related appraisal guide questions

Primary Topic Area	IIA Objective	Appraisal Guide Questions. Will the policy…?
Social integration, equality and inclusion	**O1. Promote social inclusion, equality, diversity and community cohesion**	• Reduce poverty and social exclusion? • Facilitate the integration of new communities with existing communities? • Promote a culture of equality, fairness and respect for people and the environment? • Promote an inclusive design approach ensuring a barrier free environment for all, especially disabled people? • Meet the needs of all residents in the Borough including those in more deprived areas and those with protected characteristics? • Provide opportunities for people to choose an active, fulfilling life? • Provide opportunities for residents of the Borough of every background to connect? • Allow for informal interaction between residents outdoors?
Crime, safety and security	**O2. Contribute to reducing crime, anti-social behaviour and the fear of crime**	• Play a part in reducing levels of crime? • Play a part in reducing the opportunity for anti-social behaviour? • Help make the public realm feel safer for all residents during the day and night time? • Increase security and resilience to major incidents?
Health and Wellbeing	**O3. Improve the physical and mental health and wellbeing of the population and reduce health inequalities in the Borough**	• Improve access and equity of access across the Borough to health and social care services and facilities? • Help deliver healthcare and social facilities to ensure there is capacity to meet expected population growth? • Promote a healthy and active lifestyle, particularly in areas of health and social deprivation, and help create a public realm which is good for mental health and wellbeing? • Prevent and/or mitigate adverse health effects resulting from neighbouring uses which could detrimentally impacts residents? • Avoid sensitive development such as houses, schools and health facilities being located in areas of poor air quality without mitigation? • Help support access to health and affordable food/services?

Housing	**O4. Provide residents access to different types and tenures of good quality, affordable, well-located housing to meet the different needs in the Borough**	• Increase the supply of affordable housing to meet identified need as much as possible? • Ensure the needs for different types and tenures of housing, including specialist housing, are met? • Improve the diversity of housing available, including accessible and adaptable homes? • Ensure housing is located in areas where the need to travel by private car is minimised as much as possible? • Ensure housing is of a good standard, built sustainably with a long lifespan and a high energy efficiency? • Help reduce homelessness and overcrowding? • Ensure the housing provided promotes good physical and mental health and wellbeing?
Sustainable Land Use	**O5. Make the best and most efficient use of land so as to support sustainable patterns and forms of development**	• Optimise the use of previously developed land, buildings and existing infrastructure? • Balance competing demands between land uses to meet all development needs of the area, including green infrastructure? • Integrate land use and transport so as to minimise the need to travel by private car and encourage more sustainable modes of transport? • Ensure supporting infrastructure is provided in the right locations to support the growth in the Borough? • Promote the provision of green infrastructure in unused areas such as footpath sides, blank walls and roof space? • Ensure that higher density development does not adversely impact on different groups of people and the natural environment?
Design & Accessibility	**O6. Ensure new buildings and spaces, including the wider public realm are designed to a high quality, including by ensuring they are accessible and create a sense of place, improve mental wellbeing and support sustainable lifestyles**	• Promote visually attractive developments with high quality design, layout and appropriate landscaping? • Ensure that new development respects and responds to existing townscape quality and character? • Create and maintain a safe and attractive public realm which encourages people to walk and cycle? • Help create attractive places across the Borough and promote a sense of place?

		• Help create an environment / public realm which promotes social integration and improves mental health and wellbeing? • Ensure the needs of a variety of users are taken into account in the design of buildings and the public realm? • Improve legibility and ease of use of the built environment for people with sensory or cognitive impairments? • Increase equality of access to services, facilities and the natural environment? • Improve the usability and accessibility of walking and cycling routes, including at night time?
Natural, historic and urban landscape	**O7. Conserve and enhance the character and distinctiveness of the Borough's landscapes**	• Conserve and enhance the character and distinctiveness of the Borough's historic, natural and urban landscapes, townscapes and views? • Protect the Green Belt from inappropriate development?
Connectivity	**O8. Minimise the need to travel, reduce private vehicle usage and create a more accessible and sustainable transport network which encourages walking, cycling and the use of public transport**	• Encourage a shift to more sustainable forms of travel and away from private vehicle use? • Minimise the need to travel in the first place by improving local access to services, jobs, facilities and amenities for residents? • Reduce harmful emissions from transport? • Improve accessibility of the Borough's transport network? • Make walking and cycling routes more attractive for all users? • Reduce the need for long distance vehicular travel?
Infrastructure	**O9. To ensure that provision of environmental, social and physical infrastructure is managed and delivered to meet population and demographic change in line with sustainable development and to support economic competitiveness and be resilient to the effects of climate change**	• Ensure population and housing growth is supported by the necessary supporting infrastructure? • Promote the provision of the necessary infrastructure to support economic competitiveness? • Improve access to key infrastructure for all of the Borough's residents, especially in the most infrastructure deficient areas? • Ensure that new and existing infrastructure is made resilient to the effects of climate change? • Ensure additional schools capacity is planned for and delivered?

Economy	**O10. Foster sustainable and inclusive economic growth, support a diverse and resilient economy, ensure equality of opportunities and improve local employment opportunities across a range of sectors and businesses**	• Support the growth and diversification of the economy? • Support the provision of employment opportunities for all sections of the community? • Improve the resilience of the economy? • Help minimise barriers to employment (e.g. transport, financial, childcare)? • Ensure employment space provided is of high quality and adaptable to changing business needs, including a range of price points, and space for SMEs, start-ups, makers, creatives and artists? • Support the growth of new businesses? • Support the social enterprise, voluntary and community sectors? • Support the vitality and viability of town centres and high streets, including their multi-purpose function?
Historic Environment	**O11. Conserve and enhance the existing historic and cultural environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings**	• Conserve and enhance the Borough's designated and non-designated heritage assets? • Support the bringing of assets back into appropriate use, particularly heritage assets at risk? • Support and enhance cultural heritage? • Promote improved accessibility for all within heritage, cultural and archaeological environments and their landscapes through inclusive design and management?
Green Infrastructure	**O12. Protect and enhance existing green infrastructure and seek opportunities to increase green infrastructure across the Borough**	• Improve the quality of existing green infrastructure? • Improve the accessibility and use of recreational green infrastructure? • Take opportunities to support the provision of new green infrastructure in areas which are deficient? • Support the provision of open space specifically in areas of deficiency? • Ensure green infrastructure is visually pleasing?
Air Quality	**O13. Reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure**	• Reduce NOx, PM10 and PM25 emissions across the Borough? • Assist in improving air quality beyond national and international standards? • Reduce the number of people exposed to poor air quality, particularly vulnerable people?

		• Improve air quality in and around areas which may have high concentrations of vulnerable people such as schools, outdoor play areas, care homes and hospitals?
Climate Change Mitigation	**O14. Minimise the Borough's contribution to climate change through a reduction of greenhouse gas emissions from all sources, and move towards a zero carbon borough by 2050**	• Help meet regional and national greenhouse gas emission targets? • Reduce the contribution to carbon emissions from transport? • Reduce the contribution to carbon emissions from buildings? • Support the investment in and delivery of renewable energy infrastructure? • Support the investment in and delivery of green technologies, equipment and infrastructure to help reduce greenhouse gas emissions? • Help reduce energy usage? • Support the investment in and delivery of a more sustainable transport network? • Reduce the need to travel in the first place, and therefore reduce transport emissions? • Contribute towards making existing buildings more energy efficient? • Integrate the achievement of other objectives with this one where possible?
Climate Change Adaptation	**O15. Ensure the Borough adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks**	• Help the Borough and London as a whole become more resilient to and continue to function in extreme weather events such as floods, droughts or heatwaves? • Reduce the impact of the heat island effect and improve the microclimate? • Account for the impacts of climate change on groups more vulnerable to its effects? • Ensure new buildings and infrastructure are resilient to the effects of climate change? • Promote improved environmental performance through the design of new development? • Integrate the achievement of other objectives with this one where possible?
Energy Supply and Use	**O16. Manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient**	• Increase the proportion of energy generated and purchased from renewable and sustainable resources? • Contribute to the provision of a smart and affordable energy system? • Encourage a reduction in the demand for energy and its use? • Support the investment in and delivery of renewable energy infrastructure?

	smart and affordable energy system	• Ensure equality in energy supply across the Borough, particularly for vulnerable groups? • Promote and improve energy efficiency in both new and existing buildings? • Reduce fuel poverty?
Water resource and quality	**O17. Protect and enhance the quality and quantity of the Borough's water resources**	• Promote the sustainable use of water resources and reduce water consumption? • Ensure the necessary water and sewerage infrastructure to service development? • Protect surface and groundwater quality by reducing discharges? • Improve the quality of the Borough's waterbodies in line with the objectives of the Water Framework Directive? • Protect water sources from contamination? • Help remediate groundwater and prevent further deterioration and promote recovery?
Flood Risk	**O18. Manage and reduce flood risk from all sources and improve the resilience of people, property and infrastructure to flooding**	• Promote the use of sustainable urban drainage and other flood resilient design? • Direct development to the areas at the lowest risk of flooding in the Borough? • Minimise new development in areas prone to flood risk and where there is no choice, mitigate the potential for such risk? • Minimise the risk of flooding from all sources of flooding to people, property and infrastructure? • Help renaturalise watercourses?
Geodiversity and land resource	**O19. Conserve the Borough's geodiversity and protect soils from pollution, development and over intensive use**	• Promote the use of brownfield land to help safeguard non-brownfield land where appropriate? • Prevent further soil degradation or erosion? • Prevent soil pollution and restore contaminated land? • Restore degraded soil? • Minimise the risk of health impacts through contamination? • Maximise the potential benefit of access to new developable land as a result of remediation? • Protect Regionally Important Geological Sites? • Protect Locally Important Geological Sites where necessary? • Make a positive contribution to the protection and enhancement of geodiversity?

Waste	**O20. Promote a circular economy that optimises resource use, reduces waste generated and increases recycling, recovery and re-use of waste**	• Reduce the use of limited, non-renewable natural resources? • Promote the use of local, sustainable materials and resources? • Ensure new development has a long life span and its design remains fit for purpose over its lifetime? • Promote the principles of circular economy? • Reduce consumption of materials and resources and minimise waste produced in the Borough and increase recycling, recovery and re-use of waste? • Support the delivery of new waste infrastructure to manage waste effectively? • Minimise the negative impacts of waste processing and disposal on the population? • Maximise the use of innovative waste management techniques including smart technology?
Noise	**O21. Reduce noise pollution, noise exposure and the impacts of noise on the Borough's population and wildlife**	• Reduce the number of residents exposed to high levels of noise? • Ensure new housing development is located away from high-noise areas, and where this is not possible, ensure appropriate mitigation measures are used? • Help reduce actual noise levels and disturbances from noise? • Improve people's and wildlife's access to quiet/tranquil spaces? • Reduce night time noise in residential areas?
Natural Environment	**O22. Protect and enhance the natural environment and create new environments that encourage and support biodiversity**	• Increase protection of biodiversity? • Avoid damage to sites, protected species and habitats, especially where there is a designation of international, national, regional or local importance? • Enhance the biodiversity offer in the Borough through the enhancement of existing sites and creation of new ones? • Bring nature closer to people, particularly in the most urbanised parts of the city and improve access to areas of biodiversity interest, whilst still conserving these areas? • Ensure that development has no harmful effects on biodiversity and that opportunities for biodiversity net gain or maximised?

		• Protect existing trees and increase tree planting? • Increase biodiverse green roofs, green walls and soft landscaping? • Support the creation of ecological corridors connecting different areas of the natural environment? • Help renaturalise watercourses?

Compatibility of objectives

The table below assesses the compatibility between the different IIA objectives within the framework. Some objectives will naturally have tension with others, for example, objectives which encourage development will naturally be incompatible with some environmental objectives. However, other objectives within the framework contribute towards mitigating negative impacts of development to some extent. Table 40 makes clear where there are tensions between objectives to ensure transparency in the IIA and plan-making process and to help policy makers finding balance between incompatible objectives and prioritise.

Table 40. Compatibility between different IIA objectives

IIA Objective	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. Promote social inclusion, equality, diversity and community cohesion																						
2. Contribute to reducing crime, anti-social behaviour and the fear of crime																						
3. Improve the physical and mental health and wellbeing of the population and reduce health inequalities in the Borough																						
4. Provide residents access to a quantity of different types and tenures of good quality, affordable, well-located housing to meet the different needs in the Borough																						
5. Make the best and most efficient use of land so as to support sustainable patterns and forms of development																						
6. Ensure new buildings and spaces, including the wider public realm are appropriately designed to be accessible and create a sense of place, improve mental wellbeing and support sustainable lifestyles																						
7. Conserve and enhance the character and distinctiveness of the Borough's landscapes																						
8. Minimise the need to travel, reduce private car usage and create a more accessible and sustainable transport network which encourages walking, cycling and the use of public transport																						
9. To ensure that provision of environmental, social and physical infrastructure is managed and delivered to meet population and demographic change in line with sustainable development and to support economic competitiveness and be resilient to the effects of climate change																						
10. Foster sustainable economic growth, support a diverse and resilient economy, ensure equality of opportunities and improve local employment opportunities across a range of sectors and businesses																						
11. Conserve and enhance the existing historic and cultural environment, including sites, features, landscapes and areas of historical, architectural, archaeological and cultural value in relation to their significance and their settings																						
12. Protect and enhance existing green infrastructure and seek opportunities to increase green infrastructure across the Borough																						
13. Reduce emissions and concentrations of harmful atmospheric pollutants, particularly in areas of poorest air quality, and reduce exposure																						

IIA Objective	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
14. Minimise the Borough's contribution to climate change through a reduction of greenhouse gas emissions from all sources, and move towards a zero carbon borough by 2050																						
15. Ensure the Borough adapts and becomes more resilient to the impacts of climate change and extreme weather events such as flood, drought and heat risks																						
16. Manage and reduce demand for energy, achieve greater energy efficiency, utilise new and existing energy sources effectively, and ensure a resilient smart and affordable energy system																						
17. Protect and enhance the quality and quantity of the Borough's water resources																						
18. Manage and reduce flood risk from all sources and improve the resilience of people, property and infrastructure to flooding																						
19. Conserve the Borough's geodiversity and protect soils from pollution, development and over intensive use																						
20. Promote a circular economy that optimises resource use, reduces waste generated and increases recycling, recovery and re-use of waste																						
21. Reduce noise pollution, noise exposure and the impacts of noise on the Borough's population and wildlife																						
22. Protect and enhance the natural environment and create new environments that encourage and support biodiversity																						

	Compatible
	Neutral/ambiguous relationship
	Potentially Incompatible
	N/A

Use of IIA framework

The IIA will identify and assess the likely significant effects of implementing each of the new local plan policies, as well as their reasonable alternatives (i.e. an alternative policy approach which would conform with national and regional policy and the objectives of the local plan, and be a reasonable option), against the IIA objectives. The guide questions will help Officers' with this assessment, although these are not an exhaustive list of things to consider. The IIA will assess likely significant effects for the Borough but also for areas which span beyond the borough boundary, where policies are likely to have a significant effect.

Any likely effects identified as a result of implementing the new local plan policies will be described according to criteria presented within the SEA Regulations including a description of the probability, duration, frequency and reversibility of impacts. The IIA will describe short, medium and long-term effects in 5-year increments. The IIA will also identify the combined effects of policies within and outside the new local plan, or of the effect of two local plan policies acting together.

The Council will use a colour coded symbol scoring system (see 0) to assess the new Local Plan against the IIA objectives, followed by a written assessment as described above. This system will allow for significant effects to be easily identified. In assessing policies using this method, Officers' will use their professional experience and judgement to establish likely significant effects, taking into account other policies and strategies which may provide safeguards or mitigation of potentially significant negative effects, and assessing the potential effect of policies through knock-on effects.

Table 41. Colour coding system to assess Local Plan against IIA objectives

Significance of likely effect		Description of effect
++	Major positive effect	Policy/plan/objective has a significant positive effect on the achievement of the IIA objective
+	Minor positive effect	Policy/plan/objective contributes towards achieving IIA objective
++/--	Major positive and negative effects	Policy/plan/objective has a significant positive and negative effect on the achievement of the IIA objective
++/-	Major positive and minor negative effects	Policy/plan/objective has a significant positive and minor negative effect on the achievement of the IIA objective
+/-	Minor positive and negative effects	Policy/plan/objective has a positive and negative effect on the achievement of the IIA objective
0	Little or no effect	Policy/plan/objective has little or no effect on the achievement of the IIA objective
-	Minor negative effect	Policy/plan/objective has a negative effect on the achievement of the IIA objective
--	Major negative effect	Policy/plan/objective has a significant negative effect on the achievement of the IIA objective
--/+	Major negative and minor positive effects	Policy/plan/objective has a significant negative and minor positive effect on the achievement of the IIA objective
?	Effect uncertain	It is unclear, what impact, if any the policy/plan/objective would have on the achievement of the IIA objective (reason for ambiguity will be explained).

Health Impact Assessment

The Health Impact Assessment (HIA) of the new Local Plan policies is integrated into the IIA objectives. Throughout the IIA process, the impacts upon health and wellbeing in the Borough will be identified and evaluated and policies will be refined to take account of these. Objective 3 specifically addresses the effect of policies on health and well-being, however where necessary, additional reporting on the overall health impacts of the plan will be included in the IIA.

Equalities Impact Assessment

The main duties of the Equality Act 2010 are identified in Chapter 1. It also identifies the protected characteristics which the Equality Act seeks to protect people from discrimination on the basis of these characteristics. Equality impacts have been integrated into the IIA objectives and this is made clearer in the guide questions, however as with the HIA, additional reporting on the equality impacts of the plan and policies will be included in the IIA where necessary.

Community Safety Impact Assessment

The purpose of the Community Safety Impact Assessment (CSIA) will be to ensure that the Local Plan policies and objectives don’t negatively impact on community safety and also improve on the situation where possible. The IIA objectives incorporate the CSIA requirements.

6 Stage A5: Statutory consultation

Local planning authorities are required by the SEA Regulations to consult the statutory SEA bodies – Environment Agency, Natural England and Historic England) for a minimum period of 5 weeks on the scope and detail of the scoping report. Consultation at the scoping stage is important to ensure the assessment of the likely significant effects of policies is based on a robust and evidence-backed set of IIA objectives. Consultation at this stage also helps to ensure that the IIA report will be robust enough to support the Local Plan Review during the later stages of full public consultation.

Although other comments are welcome, the Council is particularly interested in seeking views on the following:

- If there are any additional plans, programmes or policies which are not already listed in Stage A1 which are relevant to the Local Plan Review and could affect the development of policies?
- If the scope of the IIA is appropriate in the context of the scope of the Local Plan Review?
- If baseline information presented in Stage A2 is accurate and sufficient and if not, what additional data could be provided to ensure full consideration of the relevant issues affecting the Borough?
- Have the key issues affecting the Borough been identified? Are there any other issues relevant to the scope of the Local Plan Review which the Council should be considering?
- Will the IIA Framework and the IIA Objectives which have been developed effectively ensure the key issues which have been identified in Stage A3 are appropriately considered and addressed when developing policies? Will the IIA Objectives and guide questions ensure the potential effects of policies and their alternatives are assessed accurately?

Following feedback from the consultation, the Council will make revisions to the IIA Scoping Report where necessary.