

## Chapter 3

# Baseline Information

**3.1** Baseline information provides the basis for predicting and monitoring the likely sustainability effects of a plan and helps to identify key sustainability issues and means of dealing with them.

**3.2** The baseline information presented in the most recent SA Reports for each district and borough's Local Plan (listed below) has been drawn on to prepare this chapter (supplemented by more up to date sources as appropriate, which are referenced individually):

- Dacorum Borough Council – Interim SA Report for the Dacorum Local Plan (2020 – 2038) Emerging Strategy for Growth (November 2020) **[See reference 19]**
- Hertsmere Borough Council – SA report for the Draft Local Plan (October 2021) **[See reference 20]**
- St Albans City and District Council – SA Scoping Report for the St Albans City and District Local Plan 2020 to 2038 (January 2021) **[See reference 21]**
- Three Rivers District Council – Interim SA Report for the Regulation 18 Preferred Policy Options and Sites **[See reference 22]**
- Watford Borough Council – SA report for the Watford Final Draft Local Plan (January 2021) **[See reference 23]**

## Climate Change Mitigation and Adaptation

**3.3** Climate change presents a global risk, with a range of different impacts that are likely to be felt within SW Hertfordshire across numerous receptors. The 2018 Intergovernmental Panel on Climate Change (IPCC) identified a reduced

timeframe to act to keep world temperature rises to 1.5 degrees Celsius before 2050 in line with the Paris Agreement [\[See reference 24\]](#).

**3.4** Planning has a significant role to play in mitigating the effects of and adapting to the inevitable impacts of climate change. In the past this has focussed on reducing the need to travel but in the future buildings will need to be more energy efficient, use decentralised, low carbon or renewable energy sources and be designed and located to be resilient to more extreme weather events and increased risk of flooding. It should also be recognised that climate change is a cross cutting issue that can contribute to increasing the significance of effects related to other sustainability issues. Defra's 25 Year Environment Plan aims to improve the global environment by providing international leadership in tackling climate change.

**3.5** Changes to the climate will bring new challenges to SW Hertfordshire's built and natural environments. Climate change estimates (at the 50% probability level) for the East of England between 2080 to 2099, based on medium emissions scenarios, predict an increase in winter mean temperature of approximately 2.5 degrees Celsius and an increase in summer mean temperature of approximately 3.8 degrees Celsius [\[See reference 25\]](#) Furthermore, winter mean precipitation is predicted to increase by 16% and summer mean precipitation is predicted to decrease by 27%.

**3.6** Urban growth can contribute to the urban heat island effect. This is due to the land surfaces in towns and cities, which are made of materials like tarmac and stone, which absorb and store heat, that coupled with concentrated energy use and less ventilation than in rural areas, creates a heating effect [\[See reference 26\]](#). With an expected increase in population in SW Hertfordshire, urban heat island effect becomes an increasing stressor on the towns and cities.

**3.7** Successfully adapting to climate change involves understanding the risks and quantifying the likely impacts, so that informed decisions can be taken about the costs and benefits of reducing those risks. Taking the impacts of a changing climate into account in all short, medium and long term planning is an

investment to save money. Actions to increase resilience help to maximise the capacity of all to adapt. Adaptation plans need to be kept under regular review as adaptation will become increasingly important if appropriate mitigation is not put in place in time [\[See reference 27\]](#)

**3.8** Hertfordshire County Council (HCC) declared a climate emergency in July 2019. Each of the councils within SW Hertfordshire have also declared climate emergencies. Following on from this, HCC developed a Sustainable Hertfordshire Strategy which sets out initial policies and strategies needed to embed sustainability throughout the county. Furthermore, in January 2020, the Hertfordshire Climate Change and Sustainability Partnership was formed with the aim of co-ordinating positive climate action across the county. Additionally, the Hertfordshire Energy Strategy (2019) set a goal of reducing carbon dioxide emissions to 80% of those in 2012/13 by 2025, with a longer-term ambition of achieving ‘net zero’.

**3.9 Table 3.1** sets out the per capita carbon dioxide emissions from each of the SW Hertfordshire authorities for 2019 and shows that the highest total emissions were from Hertsmere Borough. However, St Albans City and District has the highest transport emissions compared to the rest of SW Hertfordshire.

**Table 3.1: Carbon dioxide emissions 2019** [\[See reference 28\]](#)

Borough/ District	Industry (kt CO2)	Commercial (kt CO2)	Public Sector (kt CO2)	Domestic (kt CO2)	Transport (kt CO2)	Total (t CO2 per person)
Dacorum	40.6	80.8	23.8	224.4	269.5	4.0
Hertsmere	46.4	65.3	16.2	164.7	354.3	6.1
Three Rivers	24.8	39.0	11.7	151.2	308.9	5.7
Watford	26.3	62.5	15.7	125.4	95.2	3.4
St Albans	32.6	57.4	13.8	230.5	534.9	5.8

**3.10** The Green Alliance Trust has estimated the capacity for renewable energy generation across England and Wales for 348 local authorities. Out of the Boroughs and Districts within SW Hertfordshire, Dacorum has ranked highest in terms of renewable energy capacity and generation (**Table 3.2**).

**Table 3.2: Renewable Energy Generation and Capacity [See reference 29]**

Borough/District	Capacity (MW)	Rank	Generation (MWh)	Rank
Dacorum	21.8	184	23,789	244
St Albans	7.1	286	10,370	290
Watford	3.1	327	6,424	309
Three Rivers	3.2	325	5,044	316
Hertsmere	3.1	329	4,585	321

**3.11** There are currently three commercial renewable energy facilities within SW Herts, in Three Rivers and Hertsmere. The RES wind facility at Kings Langley which has a capacity of 0.23MW and the co-firing biomass fossil facility at Maple Cross which has a capacity of 2.88MW are both located within the Three Rivers. Therefore, there is 3.11MW of installed commercial renewable energy capacity in Three Rivers [See reference 30]. There is also a solar farm within Potters Bar, Hertsmere which has a capacity of 5.0MW [See reference 31].

**3.12** Communities and governments around the world must adapt and plan in the face of climate uncertainty, as it is not possible to know the exact extent to which our climate will change. Adaptation and mitigation plans must incorporate the full range of climate risks, take account of uncertainty over timing and severity and build climate resilience [See reference 32].

## Flood Risk

**3.13** Development within high flood risk areas, or the loss of greenfield land to development, could contribute to increased flood risk. Properties outside the floodplain are also susceptible to flooding due to an increase in surface water runoff and large development sites outside the floodplain may exacerbate surface water flooding issues further without appropriate mitigation. However, mitigation may be achieved through the incorporation of Sustainable Drainage Systems (SuDS) into the new development.

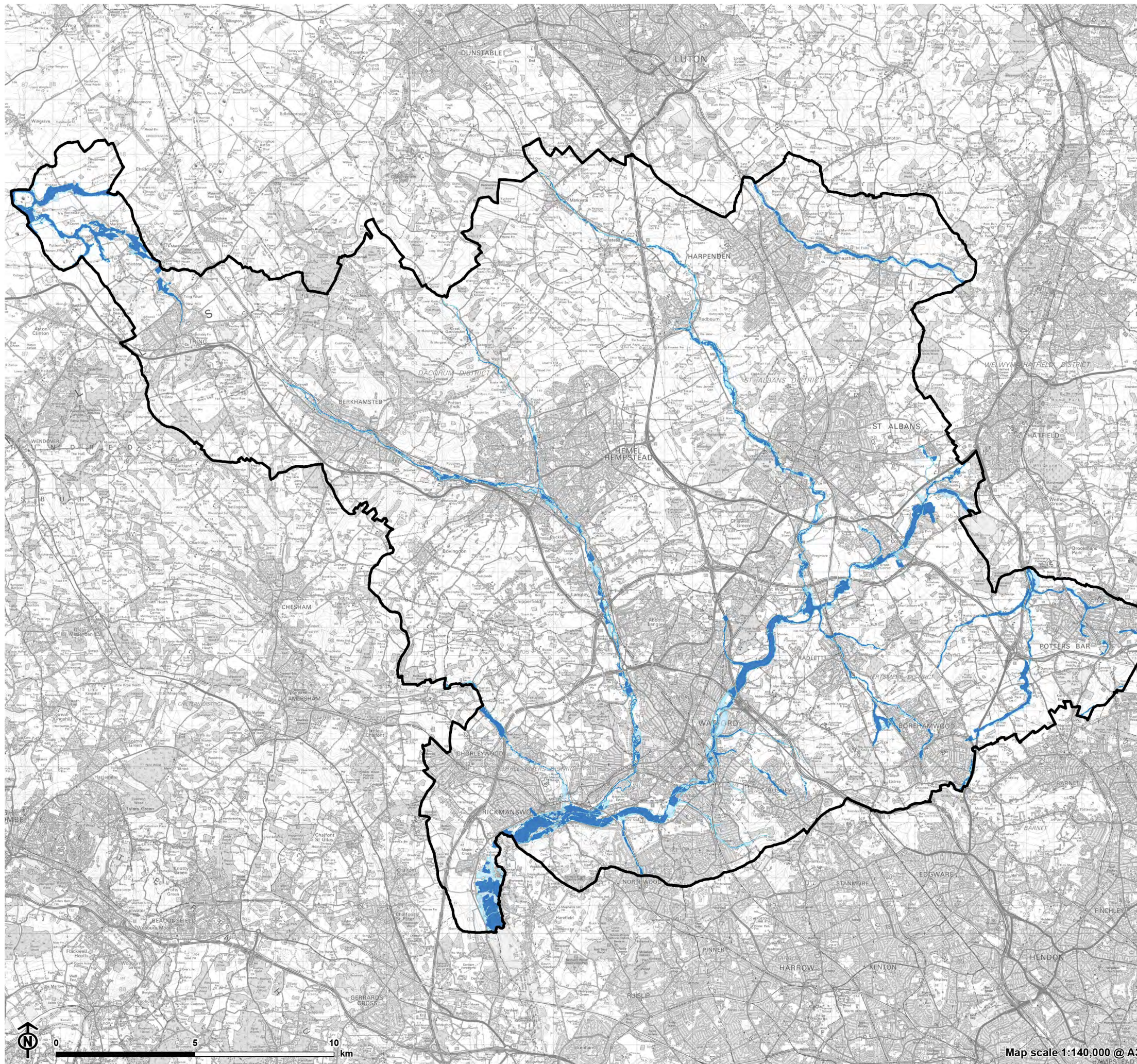
**3.14** In Hertfordshire the main surfaces of flood risk are surface water, rivers and other watercourses (fluvial) and, less frequently, groundwater. The areas most at risk of surface water flooding are predominately within SW Hertfordshire, especially surrounding Watford. Surface water flooding is caused when local drainage capacity and infiltration is unable to cope with the volume of water experience during periods of sustained or heavy rainfall. The estimated numbers of properties for each SW Hertfordshire district/borough likely to be affected during a 1 in 30 year rainfall event and a 1 in 100 year rainfall event are shown in **Table 3.3** below. The risk of surface water flooding in the county is likely to increase as the extent of built-up areas and the area of impermeable surfaces increase.

**Table 3.3: Number of properties shown to be at risk of surface water flooding [See reference 33]**

Local Authority	1 in 30 (3.33% AEP)	1 in 100 (1% AEP)
Dacorum	4,188	8,213
St. Albans	3,667	7,661
Watford	2,167	4,886
Three Rivers	2,452	4,868
Hertsmere	3,347	6,665

**3.15** Across the entire area of SW Hertfordshire, 3.6% falls within Flood Zone 2 and 2.7% falls within Flood Zone 3. These areas are shown in **Figure 3.1** below. Climate change is forecast to result in milder and wetter winters and more storms in summer months. Changes in farming practices can exacerbate overland flow due to the removal of hedgerows and trees and the issue is likely to become increasingly important due to climate change. Further development pressure will increase the pressure on existing sewer systems effectively reducing their capacity, leading to more frequent flooding.

Figure 3.1: Flood Risk (Flood Zones 2 and 3)



- South West Hertfordshire
- Flood Zone 3
- Flood Zone 2



Map scale 1:140,000 @ A3

# Population, Health and Wellbeing

**3.16** SW Hertfordshire lies within the East of England, see **Figure 1.1**. The area is divided between five local planning authorities: Dacorum, Hertsmere, St. Albans, Three Rivers and Watford. The majority of the population of the area is spread across the following areas:

- Hemel Hempstead
- Watford
- St. Albans
- Rickmansworth
- Harpenden
- Radlett
- Borehamwood

**3.17** Watford has the highest population density out of the five authorities.

**3.18** The latest population forecasts for SW Hertfordshire predicts an increase in the number of residents of 16,645 between 2018 and 2040 as shown in **Table 3.4**, with the largest percentage increase of 6.5% expected in Dacorum.

**Table 3.4: Projected growth in total resident population 2018 to 2040 [See reference 34]**

District/Borough	2018	2040	% change
Dacorum	154,280	164,343	6.5
St. Albans	147,373	148,580	0.8
Watford	96,767	97,523	0.8
Three Rivers	93,045	93,739	0.7



District/Borough	2018	2040	% change
Hertsmere	104,205	108,130	3.7

**3.19** Hertsmere has a higher than the area average proportion of those aged over 75 years, 6%, and this trend is predicted to continue. In 2019, those aged 65 and over represented 16.8% of SW Hertfordshire’s population. This is predicted to rise to 22.7% by 2041. An ageing population will increase demands for different types of housing as well as accessible healthcare and local facilities.

## Health

**3.20** There are a wide range of leisure, cultural and recreation facilities throughout SW Hertfordshire.

**3.21** SW Hertfordshire tends to be relatively healthy compared with other parts of the country. The majority of the area has above average life expectancy compared to the rest of England; however Watford is below the England average as shown in **Table 3.5** below.

**Table 3.5: Life expectancy in SW Hertfordshire [See reference 35]**

Life expectancy	England	Dacorum	Three Rivers	St. Albans	Watford	Hertsmere
Males	79.6	81.4	81.5	82.0	79.1	81.0
Females	83.2	84.3	84.0	85.3	82.7	84.0

**3.22** Open space and sports and recreation facilities in SW Hertfordshire provide residents with space in which they can undertake physical activity to the

benefit of public health. The UK Chief Medical Officers advise that for good physical and mental health, adults should aim to be physically active every day. Over the course of a week adults should accumulate at least 150 minutes of moderate intensity activity; or 75 minutes of vigorous intensity activity day; or even shorter durations of very vigorous intensity activity; or a combination of moderate, vigorous and very vigorous intensity activity [See reference 36].

**3.23** Hertfordshire contains a lower than average proportion of physically active adults (65.4% compared to 66.3% national average) and a very slightly higher than average proportion of adults over 18 with excess weight (62.1% compared to the national average of 62.%) [See reference 37]. Out of the five planning authorities within SW Hertfordshire, Watford is the only authority that is below the national average for physically active adults (60.5% compared to that national average 66.3%) and is above the national average for adults who are overweight with 67% compared to 62% nationally.

### Access to green space

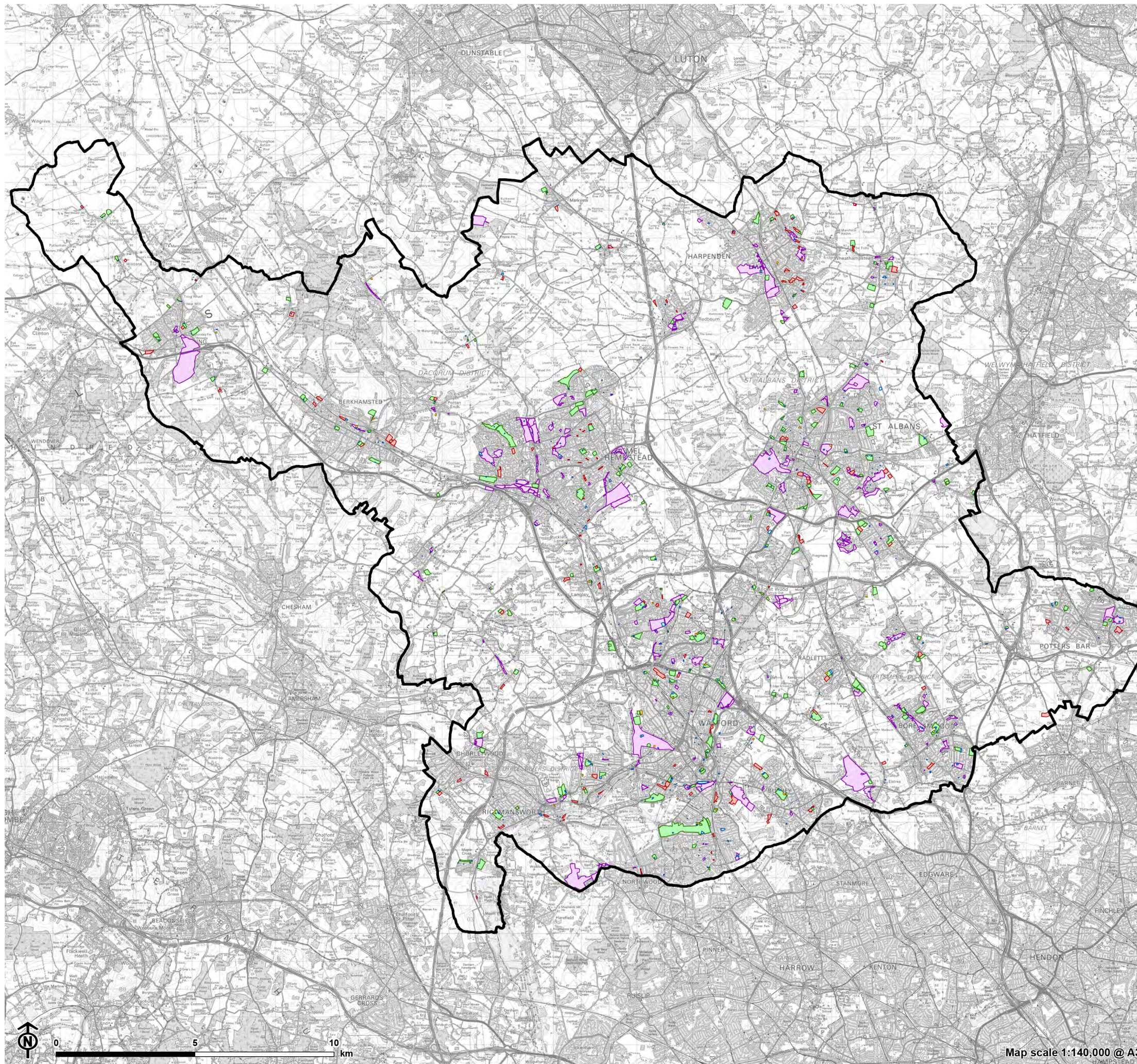
**3.24** Access to the countryside via rights of way can provide an important recreation resource. Hertfordshire has a rich green infrastructure network encompassing parts of the Chilterns AONB, river valleys, chalk grasslands, farmlands, ancient woodland, designated historic landscape and parklands and urban greening assets. Part of the Chilterns AONB falls within SW Hertfordshire with the majority falling within Dacorum.

**3.25** The Heartwood Forest, located within St. Albans, is the largest continuous new native forest in England. The Forest is 347-hectares which is made up of new and ancient woodland and has a network of paths, including a public footpath and two bridleways. The Colne Valley Regional Park also runs into Rickmansworth covering 43 square miles. Both of these green spaces are essential parts of SW Hertfordshire's green infrastructure network and provide a wide variety of benefits. However, the Regional Park in particular suffers from being poorly served by transport links.

**3.26** An assessment of available green spaces within Hertfordshire against Natural England's Accessible Natural Greenspace Standards (ANGSt) concluded that the main areas of deficiency are within Hertsmere as it does not meet the ANGSt standards. However, Watford also has below average provision of accessible natural greenspace. There is a relatively high proportion of accessible natural greenspace within St Albans District. However, Ashridge, within Dacorum Borough, is the closest 500ha accessible natural greenspace. Dacorum and Three Rivers have the largest proportion of accessible natural greenspace provision throughout Hertfordshire. Green links to the west of the County could help alleviate deficiencies in greenspace elsewhere [See [reference 38](#)]. Linking many of the existing recreational routes (e.g. Hertfordshire Way and Chilterns Way) could serve to create an integrated network of green corridors providing easy access to many of the County's green infrastructure assets. Figure 3.2 below shows all of the accessible green spaces within SW Hertfordshire.

**3.27** Three Rivers, Dacorum, Hertsmere, St Albans and Watford have all conducted their own Green Infrastructure Strategies, prepared in 2011 and 2012 (a new Green Infrastructure Strategy for Hertfordshire is currently being prepared). New and existing development has the potential to create additional green infrastructure or destroy the existing network, therefore affecting the area's resilience to climate change, biological and ecological networks and the health and wellbeing of residents.

Figure 3.2: Accessible Greenspace within South West Hertfordshire



-  South West Hertfordshire
-  Allotments Or Community Growing Spaces
-  Bowling Green
-  Play Space
-  Playing Field
-  Public Park Or Garden

## Housing

**3.28** The South West Hertfordshire Local Housing Needs Assessment (LHNA) [See reference 39] considers housing need in the South West Hertfordshire Housing Market Area (HMA). The HMA comprises the five local planning authorities within the area.

**3.29** The National Planning Policy Framework in February 2019 introduced a new Standard Method for assessing local housing need. It draws on 2014 - based household projections and increases the local housing need based on local affordability. However, the new method is subject to review as part of the expected changes to the planning system due to be announced later this year. The average workplace-based mean affordability ratio in the HMA is 13.9, when using the prescribed formula, the local affordability ratio results in an average uplift of 61%. This means the latest local housing need projection for the area, as set out in the Local Housing Needs Assessment, has increased from 2,888 dwellings to 4,043 dwellings per annum from the period 2020 to 2030. If 4,043 dwellings per annum are provided this would likely result in an additional 122,682 people in the area, over the period 2020-2036, likely to be divided as follows:

- Dacorum: 31,724
- Hertsmere: 21,765
- St. Albans: 26,128
- Three Rivers: 18,294
- Watford: 24,771

**3.30** In terms of housing mix, the LHNA recommends that the majority of market housing should be 3 or more bedrooms, whereas 1, 2 and 3 bedroom properties are more in demand for affordable homes (both to buy and to rent).

**3.31** House prices in the area are impacted by its proximity to London, being, 82% above the national average, 13% above the county and just 7% below London's 2020 housing values. Over the last 20 years, housing values within

SW Hertfordshire have grown above both the national and regional equivalents but just below London's growth. As such, there are affordability pressures across the area.

## Equalities

**3.32** The Equality Act 2010 identifies nine 'protected characteristics' and seeks to protect people from discrimination on the basis of these characteristics. It presents three main duties: to eliminate discrimination, harassment, victimisation and other conduct that is prohibited under the Act; to advance equality of opportunity between persons who share relevant protected characteristics and persons who do not share it; and to foster good relations between persons who share a relevant protected characteristic and persons who do not share it. The nine protected characteristics identified through the Act are:

- Age;
- Disability;
- Gender reassignment;
- Marriage and civil partnership;
- Pregnancy and maternity;
- Race;
- Religion and belief;
- Sex; and
- Sexual orientation.

**3.33** The potential effects of the plan on these nine 'protected characteristics' will be assessed separately to the SA. This work will comprise the Equalities Impact Assessment (EqIA) which will be presented in an appendix to the SA.

**3.34** While socio-economic status is not a characteristic protected by the Equality Act 2010, the Council is committed to also considering the effects that the plan will have in this sense. The EqIA will therefore also consider the

potential effects on socio-economic groups not limited to but including the following:

- People on low incomes;
- Young and adult carers;
- People living in deprived areas/rural areas; and
- Groups suffering multiple disadvantages.

**3.35** The population of SW Hertfordshire in mid-2020 was 600,834 compared to 565,499 in the 2011 Census. The population in the mid-2020s was 307,169 (51%) females and 293,665 (49%) males [\[See reference 40\]](#).

### Age

**3.36** The median age for SW Hertfordshire’s population based on mid-2020s figures was 40.5 years. For the 10-year period starting in mid-2010 there was an increase in average age of 1.3 years from 39.2 years. The median age for SW Hertfordshire’s population in the mid-2020 was slightly higher than the median age for both the UK (39.7 years) and for the county of Hertfordshire as a whole (39.7 years). Based on the latest figures, the age profile for SW Hertfordshire was broadly similar to that for England as a whole although as a proportion there were slightly more people in Hertfordshire aged 65 and older than in the national population. A more detailed breakdown of the estimated age makeup of the population for SW Hertfordshire in 2020 is provided in **Table 3.6** below.

**Table 3.6: Estimated breakdown of SW Hertfordshire’s 2020 population by age group [\[See reference 41\]](#)**

Age Group	Male	Female	Total
19 and younger	79,291	74,982	154,273
20-34	48,484	50,412	98,896

Age Group	Male	Female	Total
35-49	63,277	67,786	131,063
50-64	56,656	57,744	114,400
65 and older	45,957	56,245	102,202

**3.37** It is expected that the ratio of those residents who are state pension age or older compared to those of working age will increase in the future throughout the UK. SW Hertfordshire has a similar old age dependency ratio (273.4) compared to Hertfordshire (274.8) - this indicates the number of people of state pension age per 1,000 people of working age. In SW Hertfordshire, this figure is expected to rise to 348 by 2043, while the Hertfordshire figure is expected to increase to a similar figure of 345.3 by this time [\[See reference 42\]](#).

## Disability

**3.38** The 2011 census presented figures on people with disabilities in the UK. Within SW Hertfordshire, the proportion of population reporting a disability that limits them a lot in their activities is as follows for each of the five local authorities: Dacorum (13.1%), Hertsmere (13.3%), St Albans (11.2%), Three Rivers (12.2%) and Watford (15%). The proportion of SW Hertfordshire’s population who were reported as being 'limited a lot' is below the average for England and Wales of 17.9% in all five districts [\[See reference 43\]](#).

## Marriage and Civil Partnership

**3.39** Based on the 2011 Census data, 37.3% of Hertfordshire’s population was married or in a same-sex civil partnership, with a further 9.8% cohabitating. 36.6% of the population was single and 9.7% were lone parents with dependant or non-dependant children. The remaining 6.5% of the population falls within other household types [\[See reference 44\]](#).



## Pregnancy and maternity

**3.40** In recent years, the number of births in the UK has decreased along with the fertility rate. For the fifth consecutive year, the number of live births in 2020 for England and Wales decreased to 613,936, the lowest since 2002. In 2020 there were 6,710 live births within SW Hertfordshire. Of these, 3,149 were to non-UK born mothers [See reference 45]. The average age of mothers at childbirth in 2020 remained the same as 2019, at 30.7 years following a gradual increase since 1973. The average fertility rate for SW Hertfordshire is 1.73 children per woman [See reference 46].

## Race

**3.41** The ONS publishes detailed population estimates by ethnic group for areas in England and Wales following each census. However, there are currently no reliable population estimates by ethnic group available at the local authority level for the years between censuses. Therefore, the most recent census data presents the most reliable overview of the likely ethnic makeup of SW Hertfordshire. 19.2% of Hertfordshire residents in 2011 were from an ethnic minority, equating to 214,056 residents. **Table 3.7** below shows the broad ethnic makeup within the five local authorities that comprise SW Hertfordshire.

**Table 3.7: Broad Ethnic Makeup (%) of SW Hertfordshire**

Area	Asian/ Asian British	Black/ African/ Caribbean /Black British	Mixed/ multiple ethnic groups	Other ethnic group	White
<b>Dacorum</b>	4.7%	2.1%	2.1%	0.3%	90.8%
<b>Hertsmere</b>	7.4%	3.9%	2.6%	1.0%	85.0%
<b>St Albans</b>	6.4%	1.7%	2.8%	0.7%	88.4%

Area	Asian/ Asian British	Black/ African/ Caribbean /Black British	Mixed/ multiple ethnic groups	Other ethnic group	White
Three Rivers	9.2%	1.8%	2.3%	0.5%	86.2%
Watford	17.9%	5.8%	3.4%	0.9%	71.9%

**3.42** A significant majority of Hertfordshire’s resident population in 2011 (83.9% or 936,681 residents) were born in England. 3.7% (41,101) of the population were born in an EU country and 8.6% (96,025) of the population were born in a non-EU country [\[See reference 47\]](#).

**3.43** Migration figures for SW Hertfordshire show that the area has experienced a small net inflow of both internal and international migration during most years from 2010 to 2020 (the exception being international migration for the period mid-2011 to mid-2012 when a small net outflow was experienced). Generally, internal migration outweighs international migration. During the most recent reporting period (mid-2019 to mid-2020) the inflow of long-term international migration was recorded as 3,220 individuals and the outflow was recorded as 2,755 individuals across SW Hertfordshire. During the same period the inflow of internal migration was recorded as 35,317 individuals and the outflow was recorded as 34,432 individuals [\[See reference 48\]](#).

## Religion

**3.44** In 2018 the majority of SW Hertfordshire’s total population (50%) considered themselves to be Christian. Those who reported to have no religion accounted for 36% of residents. A further 12% of residents were reported to follow other religions, with Hindu being the largest group (5% of residents). These figures demonstrate that for the five-year period beginning in 2013, the number of residents reporting to have no religion grew (from 184,800 to 217,397 residents) and the number of residents recorded as Christian fell slightly (from 309,272 to 297,625 residents). The breakdown of religion by the

five local authority areas within SW Hertfordshire is shown in **Table 3.8** below [See reference 49].

**Table 3.8: Number of people following a religion in 2018**

	Dacorum	Hertsmere	Three Rivers	Watford	St. Albans
No Religion	60,364	25,551	41,936	27,784	61,762
Christian	79,609	49,869	39,007	49,704	79,436
Buddhist	-	*	*	2,341	*
Hindu	4,127	6,352	5,266	10,352	2,558
Jewish	*	15,948	1,852	-	*
Muslim	5,483	3,145	2,628	6,316	1,535
Sikh	-	-	1,436	-	-
Other Religion	1,464	1,784	-	*	*

\* Sample size too small to provide reliable estimates.

- No figures to report.

**3.1** There is little baseline information available that is directly relevant to other protected characteristics under the Equality Act, including gender reassignment and sexual orientation.

## Social Inclusion and Deprivation

**3.2** The English Indices of Deprivation of 2019 (IMD) is a measure of multiple deprivation in small areas or neighbourhoods, Lower Layer Super Output Areas (LSOA) to measure deprivation at local authority and county level. The seven distinct domains of deprivation: Income; Employment; Health Deprivation and

Disability; Education and Skills Training; Crime; Barriers to Housing and Services; and Living Environment. Each domain contains a number of indicators. The seven domains are combined to give a multiple deprivation score. There are 32,844 LSOAs nationally.

**3.3** In 2019, the following rankings for overall deprivation were given to the five local authorities within Hertfordshire: Dacorum (240 out of 317); Three Rivers (291 out of 317); St Albans (306 out of 317); Watford (195 out of 317); and Hertsmere (224 out of 317) (1 being the most deprived). SW Hertfordshire overall performs particularly strongly in terms of measures relating to income, employment, education skills and training, health and disability, income deprivation affecting children and income deprivation affecting older people. The area performed less favourably in relation to barriers to housing and services and crime [\[See reference 50\]](#). Although the area is generally prosperous, there are pockets of deprivation, mostly focused within the larger centres of Watford, Hemel Hempstead and Borehamwood.

**3.4** Three Rivers is one of the 20% least deprived districts/unitary authorities in England. 22 out of 53 LSOAs (42%) fall within the 10% least deprived areas. Only one LSOA (Three Rivers 012D) falls within the 20% most deprived areas. In relation to living environment, 42 out of 53 LSOAs (79%) fall within the least deprived areas [\[See reference 51\]](#). However, about 9.7% (1,620) children live in low-income families [\[See reference 52\]](#). Within Three Rivers, it was estimated that 4,053 out of 37,918 households were fuel poor in 2019, which equates to 10.7% of all households [\[See reference 53\]](#).

**3.5** In 2019, Watford had four out of 53 LSOAs within the 20 - 30% most deprived areas while 33 out of 53 LSOAs fell within the least deprived areas. About 11.5% (2,305) children lived in low-income families. Since 2015, the number of LSOAs within the most deprived in relation to crime has increased from 18 to 35 in 2019. Within Watford, it was estimated that 5,417 out of 39,453 households were fuel poor in 2019, which equates to 13.7% of all households. Watford has the highest rate of fuel poverty in SW Hertfordshire.

**3.6** St Albans is one of the 20% least deprived districts/unitary authorities in England. There is only one LSOA (St Albans 009A) in St Albans that falls within the 30% most deprived areas. 23 areas within St Albans are in the 10 - 30% most deprived in relation to barriers to housing and services. Approximately 44% of LSQA (38 out of 87) fall within 10% least deprived areas. About 8.5% (2,355) children live in low-income families. Within St Albans, it was estimated that 5,623 out of 60,507 households were fuel poor in 2019, which equates to 9.3% of all households.

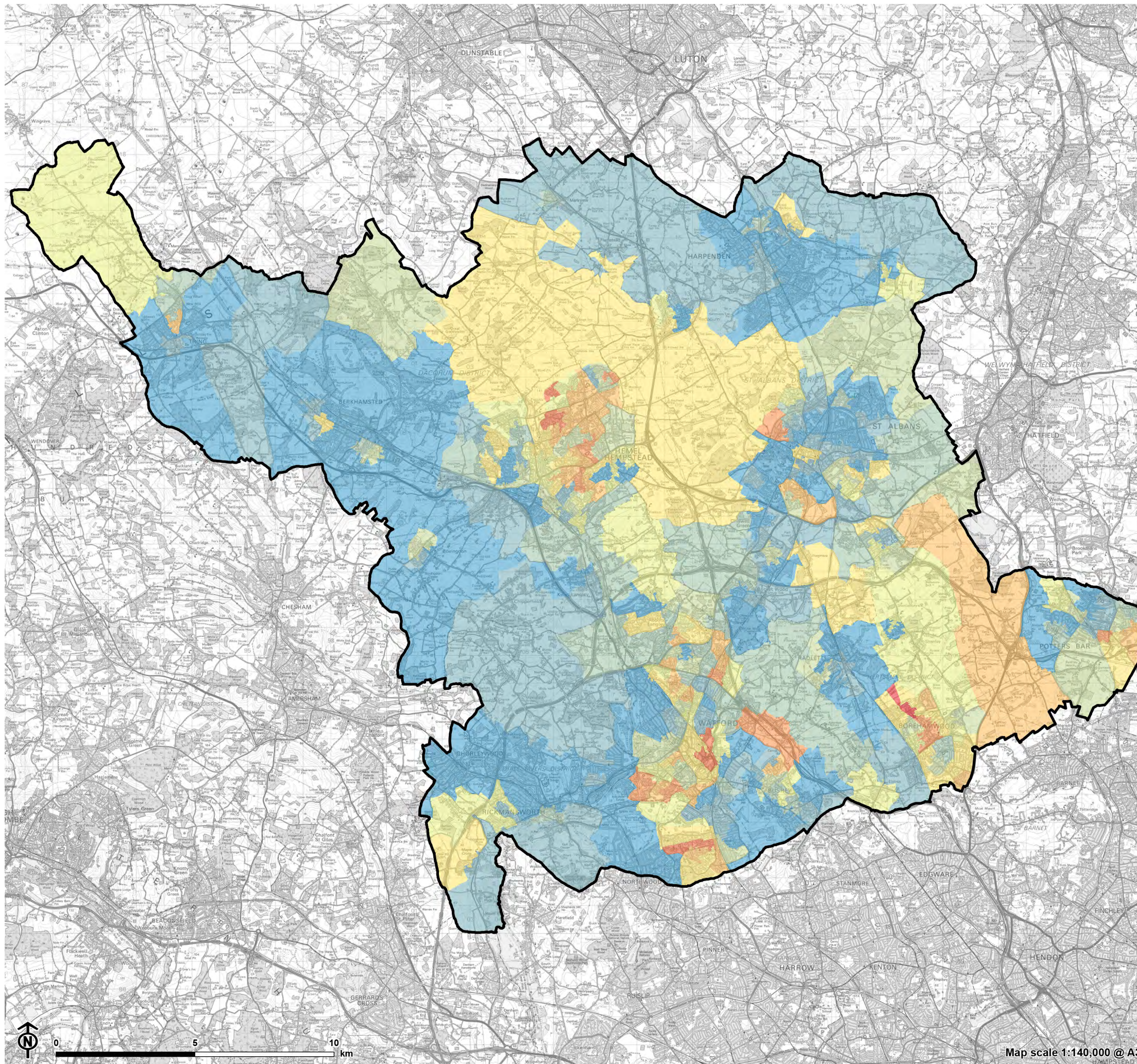
**3.7** The majority of Hertsmere lies within the least deprived areas, with 19% of LSOAs falling within 10% least deprived. There is one LSOA (Hertsmere 006C within Borehamwood Cowley Hill ward) that lies within the 10% most deprived. Hertsmere performs relatively poorly in relation to barriers to housing and services with 51 out of 62 LSOAs (82%) falling within the most deprived areas. This may be due to Hertsmere's more rural setting. About 11.9% (2,380) of children live in low-income families. Within Hertsmere, it was estimated that 4,537 out of 42,914 households were fuel poor in 2019, which equates to 11.0% of all households.

**3.8** Within Dacorum, only three LSOAs lie within the 20% most deprived areas. The majority of LSOAs (72%) are less deprived, with 24 LSOAs falling within the 10% least deprived domain. Dacorum ranks highest in relation to living environment with 68% of LSOAs falling within the least deprived. Crime is ranked the highest, however, with the majority of LSOAs falling within the most deprived. About 12.3% (3,450) children live in low-income families. Within Dacorum, it was estimated that 7,095 out of 64,610 households were fuel poor in 2019, which equates to 10.7% of all households.

**3.9** New development near to deprived neighbourhoods can help to stimulate regeneration in those areas. Therefore, the location of the JSP growth types in relation to the most deprived neighbourhoods could influence the extent to which they can have positive effects on those areas. **Figure 3.3** shows the Indices of Multiples Deprivation for SW Hertfordshire.

**3.10** Further information regarding unemployment levels and income is provided in the Economy section.

Figure 3.3: Index of Multiple Deprivation (IMD)



South West Hertfordshire

IMD Decile

- 1 (Most deprived)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (Least deprived)

## Educational Attainment

**3.11** The quality of schools within the area is generally very good. In SW Hertfordshire, as of January 2017, only 2,143 pupils (out of a total of 48,868) are reported to attend primary schools that have been rated as 'requiring improvement' or 'inadequate' by Ofsted. Only 1,900 pupils (out of a total of 33,703) are reported to attend secondary schools that have been rated as 'requiring improvement' or 'inadequate' by Ofsted.

**3.12** The percentage of pupils reaching the expected standard in relation to attainment of primary pupils at Key stage 2 in reading, writing and mathematics for SW Hertfordshire is higher than the England average of 54%. The averages for the five local authorities are: Dacorum (57%), Hertsmere (56%), Three Rivers (62%), Watford (59%) and St Albans (68%).

**3.13** Pupils in SW Hertfordshire perform more favourably than the national average for Attainment 8 scores for English and Mathematics. For English, the average score for SW Hertfordshire in 2015/16 was 11.4 compared to the national average of 10.6, while for Mathematics the average score for the area was 11 compared to the national average of 9.8.

**3.14** SW Hertfordshire also reported a higher percentage (72.8%) of pupils attaining grades A to C in both English and Mathematics than the English average (63.3%) for the same period [\[See reference 54\]](#).

## Economy

**3.15** At a county level, the Local Industrial Strategy (2019) [\[See reference 55\]](#) sets out the economic priorities for the county and builds on Hertfordshire's Strategic Economic Plan [\[See reference 56\]](#). The Strategic Economic Plan for Hertfordshire sets out actions based around four priorities for the county: maintaining global excellence in science and technology, harness relationships with London and elsewhere, reinvigorate Hertfordshire's places for the 21<sup>st</sup>



Century and create foundations for long-term growth. Further to this, Hertfordshire's Clean Growth Strategy [\[See reference 57\]](#) sets out how it aims to support a transition to clean growth across the county. One action set out to achieve this will be by developing the green economy through the growth of the Low Carbon Environmental Goods and Services sector.

**3.16** The SW Hertfordshire economy has grown since 2011 with the growth of real gross value added (GVA) by around 4% per year [\[See reference 58\]](#). The key sectors that are present in SW Hertfordshire are the life sciences, advanced engineering/manufacturing, agri-science and agri-tech, sustainable construction and creative industries (film, TV, digital sectors). A number of international businesses' headquarters are located within the area.

**3.17** At the county level, residents have a far higher level of earning than the national average. The earnings are higher for residents than by workplace, reflecting the fact that many people commute into London to access higher paid jobs. In broad terms, out-commuters from Hertfordshire tend to be better qualified than in-commuters into the county [\[See reference 59\]](#).

**3.18** As of 2017, at a county level, there are 58,000 enterprises, most of which are small, producing a wide array of different good and services. These range from pharmaceutical products to accountancy services and sustainable construction techniques, and from logistics to advanced materials and satellites [\[See reference 60\]](#).

**3.19** The county is home to many well qualified people, but still, over 40,000 working age residents have no qualifications at all. The average resident of St. Albans who is employed on a full-time basis earns weekly pay of around £684, while the average weekly pay on a full-time basis in Hertsmere is £525 showing that there are substantial differences across the SW Hertfordshire area [\[See reference 61\]](#). According to the 2011 census, 12,688 people were registered as unemployed and an additional 93,148 were economically inactive, not claiming anything from the state, but wanting a job. Dacorum has the highest number of people in both categories and Watford has the least compared with the rest of SW Hertfordshire.

**3.20** The South West Hertfordshire Economic Study (2019) [See reference 62] outlines key information about the economy in South West Hertfordshire, including:

- The previous 2016 study identified a Functional Economic Market Area (FEMA) made up of Dacorum, Hertsmere, St Albans, Three Rivers and Watford. This was based on evidence of strong commuting and migration relationships and shared leisure, retail and public sector catchment areas. The definition of FEMA is still relevant. The FEMA is thought to share strong relationships with other areas (London, Luton/Central Beds, and the Cambridge-Milton Keynes-Oxford Corridor) which could exert a growing influence on economic and labour market trends in SW Hertfordshire. It is uncertain how these relationships might change in the future; however it is suggested that:
  - The loss of employment floor space in London presents opportunities for SW Hertfordshire to attract jobs and businesses.
  - As the economies of SW Hertfordshire and Luton/Central Beds are sufficiently different, the expected employment and housing growth planned around Luton is anticipated to complement rather than compete with growth in the FEMA.
  - While any effects on SW Hertfordshire of the significant growth up to 2050 within the Cambridge-Milton Keynes-Oxford Corridor are expected to be long term, there may be a risk that the scale of development and new infrastructure investment could make this a more attractive investment location for certain sectors where there may be competition with SW Hertfordshire.

**3.21** Given the high level of housing growth already planned through emerging Local Plans for SW Hertfordshire and continuing affordability challenges in London, it is likely that the strong in-migration and out-commuting flows between the FEMA and London will continue to grow. The loss of employment floorspace in London presents opportunities for SW Hertfordshire to attract jobs and businesses, although this is dependent on SW Hertfordshire authorities addressing the current undersupply of employment space.

**3.22** Trends identified that employment was growing at a strong rate up until 2019, as levels of growth were much stronger (1.5 to 2.8% p.a. based on the average growth rate over the previous ten and five year periods) when compared to the long-term growth rate of 0.4% p.a.

**3.23** Trends identified that productivity had fallen prior to COVID-19 and was lower than the UK average: average GVA per job fell by £1,000 and was 2% lower than the national average, having been 8% higher in 2001. Supporting the growth of established sectors (e.g. professional services, ICT and film and TV production) is thought to be key to addressing these productivity challenges. SW Hertfordshire has a large supply of highly skilled workers to support the growth of these sectors. The main barrier to growth has been a shortage of high quality business premises to attract investment and to support the growth of indigenous businesses.

**3.24** Supply of employment space is at critically low levels – a combination of growth and the loss of existing premises has resulted in a significant reduction in the availability of employment space in SW Hertfordshire. This has the potential to act as a significant constraint on growth, particularly in those office-based sectors which are key to increasing productivity.

**3.25** Public transport access and connections to London are key for high value office investors.

**3.26** The COVID-19 pandemic brought unprecedented economic upheaval across the world, including for SW Hertfordshire. Businesses have experienced significant financial pressure and those within town centres have experienced particularly acute challenges [See reference 63]. Hertfordshire's Economic Recovery Plan has been developed in response and is structured around three main Delivery Packages, which are concerned with Hertfordshire's businesses and workforce (existing and future), and focus on:

- Enterprise and innovation.
- Skills and creativity.
- International trade and innovation.

**3.27** Hertfordshire's Economic Recovery Plan outlines the key challenges experienced by the Districts and Boroughs due to COVID-19 and what the future looks like. The future likely scenarios identified in this report for the five local planning authorities within SW Hertfordshire is outlined below:

- Dacorum – Looking ahead, the future of logistics will be important, given high levels of local concentration. The future of professional services will also underpin the pattern of recovery. Among the risks that will need to be considered local is the relatively large concentration of retail activity.
- Hertsmere – The London fringe economy of Hertsmere saw a sharp rise in the claimant count, those who claimed jobseeker's allowance and universal credit, to a rate that went above the country average. Hertsmere's economy is mixed in employment terms. The number of public sector and health jobs is small, so the future of the private sector is thought to be critical.
- Three Rivers – Saw a sharp rise in the claimant count although the rate was lower than the average for Hertfordshire. The uptake of the various government schemes to cushion the effects of the pandemic were similar to the county average. Looking ahead, the data suggests that the future performance of the business services will be critical; and the construction sector will also have a big influence.
- Watford – Appeared to see serious local economic effects linked to the pandemic. The uptake of furlough was high and the claimant count rose sharply; as a proportion of residents aged 16-64, it was among the highest in the county. Looking ahead, town centre functions could be vulnerable, and the high incidence of jobs linked to business administration and support services is a particular local feature. The resilience of those activities could be linked to head offices in Watford and elsewhere.
- St Albans – The uptake of the various government schemes was lower in St Albans than the rest of Hertfordshire, and the claimant count rate was also lower than elsewhere. These observations are thought to be explained by the high rate of professional, scientific and technical activities. They may also reflect the high rate of highly qualified people locally.

**3.28** A number of districts within Hertfordshire have produced their own Economic Development Strategies to help address the adverse effects of COVID-19 on the local economy. Two of the SW Hertfordshire authorities have produced such strategies, Watford Economic Growth Strategy 2021-25 [See reference 64] and Dacorum Economic Recovery Plan [See reference 65]. Both set out priorities to create sustainable and lasting growth.

## Transport, Air Quality and Noise

### Transport

**3.29** Significant housing growth is planned in future years and as a result Hertfordshire's population is forecast to grow by 21% by 2039, from 1.18million people in 2016 to 1.43million. This will fuel an increase in travel demand. Hertfordshire already has high levels of car ownership, good north-south links but relatively poor east-west connections, especially for public transport [See reference 66]. Existing problems, such as in Hertsmere for example, are caused by road links being better than access to public transport, particularly in terms of east to west transportation, which is reflected in the high levels of car ownership and traffic congestion [See reference 67]. Hertfordshire also experiences high levels of cross-boundary commuting and complicated movement patterns due to the high number of medium-sized towns. This all results in congestion between and within towns, rail overcrowding, and air quality problems. Those who live in rural areas, people who have a disability or other mobility impairment, or people who do not have access to a car often struggle to access key services because alternatives to the private car are currently not realistic, affordable or convenient. Tackling these issues requires a combination of support for walking, cycling and passenger transport provision, behaviour change initiatives and traffic demand management [See reference 68].

**3.30** The M1, West Coast Mainline and Midland Mainline all cut across the west of Hertfordshire, close to three of Hertfordshire's largest towns, Watford, Hemel Hempstead and St Albans. These key transport routes are recognised for their

importance on the economic geography of the area [See reference 69]. The M1 corridor which cuts across the west of Hertfordshire includes the districts of Dacorum, Hertsmere, Three Rivers, Watford and St Albans. Although there are differences between these areas, their access to the M1 and connections northwards to Luton, Milton Keynes and the Midlands and southwards to London are shared locational strengths which will help to drive future economic growth [See reference 70]. **Figure 3.4** below shows the transport network across SW Hertfordshire.

**3.31** Congestion is a major local concern in SW Hertfordshire [See reference 71]. The road network across SW Hertfordshire is currently under stress at key locations, and there is also stress on the strategic road network, particular the M25, such as within Three Rivers and Watford [See reference 72] [See reference 73]. Many congestion hotspots are where the strategic road network joins the local road network (e.g. in Hertsmere at Junction 23 of the M25 and Junction 5 of the M1, into and out of Hemel Hempstead to the M1 and within St. Albans City at peak times) [See reference 74]. Congestion is likely to continue to be an issue as forecasts predict a 25% increase in trips originating in Hertfordshire by 2036. Currently, car dependency in SW Hertfordshire is very high for local and longer trips. Nearly 9 out of 10 households own at least one car.

**3.32** Rail links are relatively good across SW Hertfordshire, with many of the districts and boroughs having access to multiple stations and some to more than one lines [See reference 75]. As noted above, whilst rail links are good in a north-south direction across SW Hertfordshire they are much less so in the west-east direction. Additionally, rail overcrowding is common at peak times and is likely to increase with growing demand. A number of rail lines are forecast to be operating over capacity by 2031, specifically the Midland Main Line to St Pancras, West Coast Main Line suburban services and Great Northern services to Moorgate.

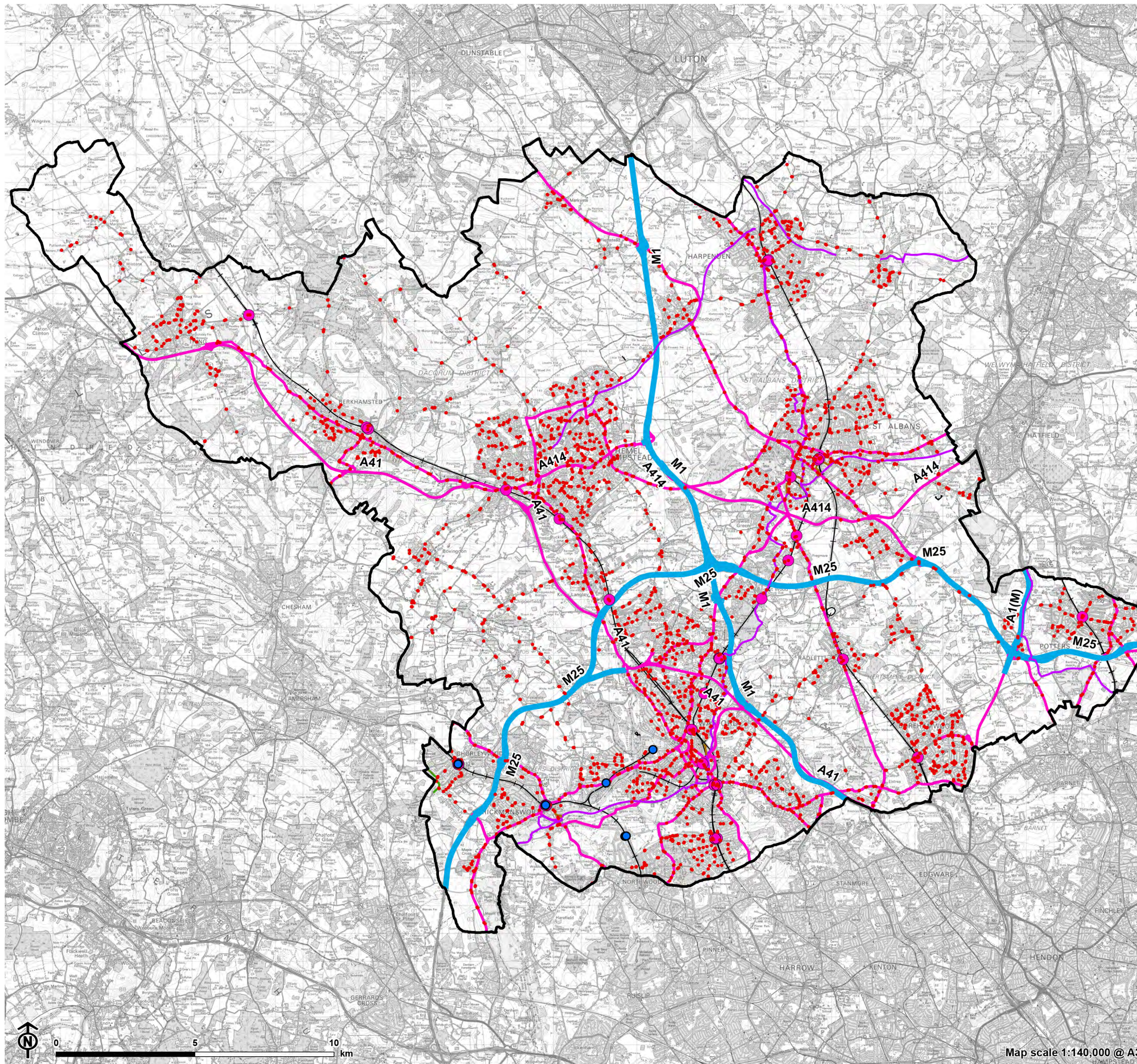
**3.33** SW Hertfordshire has good access to air transport. Dacorum and St. Albans lie close to London Luton Airport; Watford has good transport links and is well placed at the intersection of the M25, M1 and A41 which provides good access to the major London airports of Heathrow, Gatwick, Stansted and Luton;

Hertsmere also has good transport links to all the major London airports via the Thameslink rail service to Gatwick and the M1, A41 and the M25 and Three Rivers also has good access to Heathrow, Luton, City, Stansted and Gatwick Airports, with all being within 60 km of Three Rivers.

**3.34** In general, access to bus services is good across SW Hertfordshire, particularly within the main built-up areas but there are localised challenges, particularly where provision and regularity of services is poorer in the more rural area and areas with lower housing density [See reference 76]. Bus networks and service frequency is shrinking in some areas across SW Hertfordshire - the impact that COVID-19 has had on this trend is currently unknown.

**3.35** There are a number of cycle networks throughout the area including the Nickey Line that follows the route of former Harpenden to Hemel Hempstead Railway, the Ebury Way connecting Watford and Rickmansworth and other routes along the Grand Union Canal. However, there are only a few dedicated cycle routes between urban areas. The walking and cycling networks are considered to meet current demands in Dacorum and Three Rivers; however there are localised issues, such as congestion on some routes putting people off using those routes [See reference 77], and often the facilities for pedestrians are provided alongside roads, where high traffic levels adjacent may make walking a less attractive option [See reference 78]. However, Hertsmere Borough Council has recently approved plans for a cycle hire scheme to be introduced in Borehamwood and its adjoining areas to encourage active and sustainable travel in Borehamwood [See reference 79]. Furthermore, Watford Borough Council has recently produced a new travel strategy for the borough which is underpinned by six key themes including: increasing active travel opportunities, improving public transport for longer journeys, providing alternatives to petrol car, making the town centre more pedestrian and cycle friendly, supporting change and making moving goods more sustainable. Various actions to achieve the six themes include, but are not limited to, improved cycle and pedestrian routes with increased cycle parking throughout Watford [See reference 80]. Specific information about the adequacy of the walking and cycle networks in St. Albans is not available.

Figure 3.4: Transport Network within South West Hertfordshire



- South West Hertfordshire
- Motorway
- A Road
- Railway
- National Cycle Network (NCN)
- NCN Link
- Regional Cycle Network
- Tram/Metro station
- Rail station entrance
- Bus/Coach stop



## Air Quality

**3.36** Air pollution in Hertfordshire comes mainly from two sources; road transport and gas boilers (particularly in town centre locations). In total, there are 17 Air Quality Management Areas (AQMAs) across SW Hertfordshire, as listed in **Table 3.9** and mapped in Figure 3.5 below. Air quality has improved over the past ten years, such as within the Chorleywood NO2 AQMA in Three Rivers [**See reference 81**], however the county still exceeds legal limits in some areas, particularly near busy roads, such as within the St Alban’s AQMAs which have annual average nitrogen dioxide levels above the legal minimum [**See reference 82**].

**3.37** Many of the districts/boroughs have adopted measures to improve the air quality within the AQMAs as well as the borough/districts as a whole, principally targeting reducing pollution from road traffic. Watford Borough Council, for example, has adopted a number of measures to improve local air quality including the installation of rapid car charging points at nine major car parks, the extension of the e-car scheme, introduction of more cycle routes and facilities and providing better infrastructure to make roads safer for pedestrians. In addition, major road improvements have been made in a bid to alleviate congestion on key roads with AQMAs [**See reference 83**].

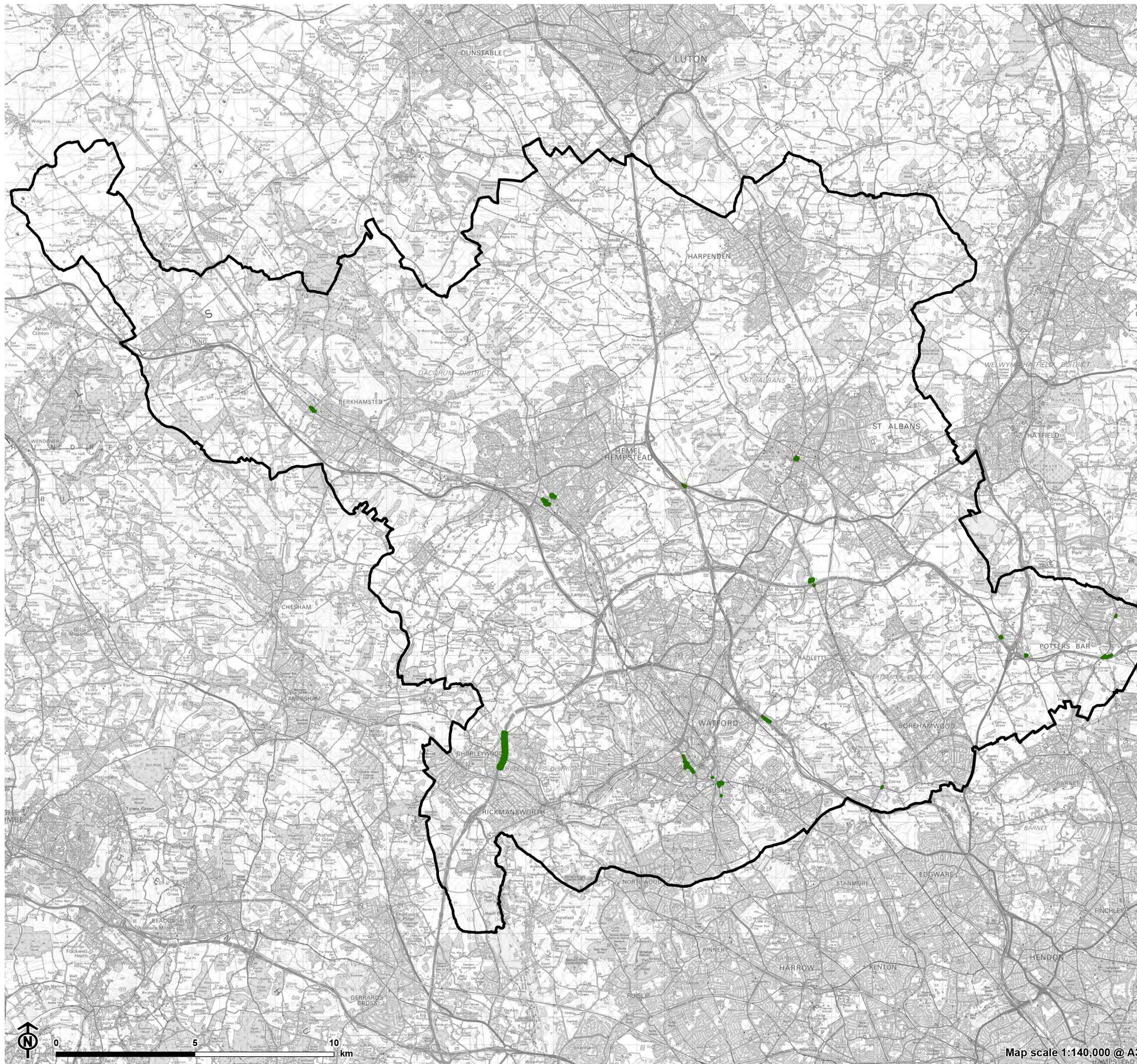
**Table 3.9: Current AQMAs Declared by SW Hertfordshire Authorities**

Borough/ District	AQMA
Dacorum	<ul style="list-style-type: none"> <li>• AQMA No 1 Lawn Lane, Hemel Hempstead.</li> <li>• AQMA No 2 London Road, Apsley.</li> <li>• AQMA No 3 High Street, Northchurch, Berkhamsted.</li> </ul>
Hertsmere	<ul style="list-style-type: none"> <li>• AQMA 1 – An area comprised of the properties at 23-27 Dove Lane and the caravan site Brookes Place off the A1000 Barnet Road, near the M25.</li> </ul>

Borough/ District	AQMA
	<ul style="list-style-type: none"> <li>• AQMA 2 – An area comprised of Charleston Paddocks, St Albans Road, South Mimms, Potters Bar, near the M25.</li> <li>• AQMA 3 – An area comprised of properties 31-29 Blanche Lane South Mimms near the M25.</li> <li>• AQMA 4 – An area comprised of the domestic properties 12 Grove Place, Hartspring Lane and caravans numbered 1-4, 7-8, 55-59 and 60 within Winfield Caravan site, Hartspring Lane, near the M1 at Bushey.</li> <li>• AQMA 5 – An area encompassing a number of houses on the eastern side of Watling Street, either side of the junction with Barnet Road.</li> <li>• AQMA 6 – An area comprised of a number of domestic properties on the High Street, opposite the bus station Potters Bar.</li> </ul>
Three Rivers	<ul style="list-style-type: none"> <li>• AQMA - Chorleywood NO2 AQMA, situated at Junction 18 of the M25.</li> </ul>
Watford	<ul style="list-style-type: none"> <li>• AQMA 1: St Albans Road</li> <li>• AQMA 2: Vicarage Road</li> <li>• AQMA 3: Alderham Road/Chalk Hill</li> <li>• AQMA 4: A405/Horseshoe Road</li> </ul>
St Albans	<ul style="list-style-type: none"> <li>• St Albans AQMA No. 7 - The area comprising of odd numbers 1-7 London Road, 1-11c Holywell Hill and even numbers London Road, St Albans.</li> <li>• St Albans AQMA No. 2 - The area comprising of Beechtree Cottages, Hemel Hempstead Road, St Albans (adjacent to junction of M1 (J7) and M10).</li> <li>• St Albans AQMA No.7 - An area encompassing a number of domestic properties in Frogmore and Colney Street in the vicinity of the M25.</li> </ul>

**3.38** It should also be noted that the Habitat Regulations Assessment for the emerging Dacorum Local Plan has noted a variety of pressures on the Chilterns Beechwoods SAC, one of which is nitrogen deposition due to the highly travelled roads within Dacorum. Similar issues are likely to be identified through the HRA for the SW Herts JSP and will be explored through that process.

Figure 3.5: Air Quality Management Areas (AQMA) within South West Hertfordshire



- South West Hertfordshire
- Air Quality Management Area (AQMA)

## Noise

**3.39** Complaints about noise in Hertfordshire have declined since 2009/10 with the rate of complaints about noise in 2014/15 being 5.2 per 1000 population [\[See reference 84\]](#) [\[See reference 85\]](#). Complaints received mainly relate to domestic noise (68.4% in 2015/16) and construction and commercial operations (20.4% in 2015/16) [\[See reference 86\]](#).

**3.40** Hertfordshire is susceptible to noise from aircraft, due to its close proximity to the major airports of Stansted and Luton. In 2016 Hertfordshire residents raised 93% of aircraft noise complaints related to Luton and 10% related to Stansted Airport [\[See reference 87\]](#). However, noise pollution levels from aircraft are not an issue for all areas of SW Hertfordshire, as there are no scheduled flight paths over Three Rivers from the London airports of Heathrow, Luton, City, Stansted and Gatwick [\[See reference 88\]](#).

## Land and water resources

**3.41** In Hertfordshire, as elsewhere, there are conflicting pressures on land use. This is particularly true for housing and associated infrastructure which has to be balanced with the protection of the natural environment as well as the preservation of the Green Belt.

## Geology and soils

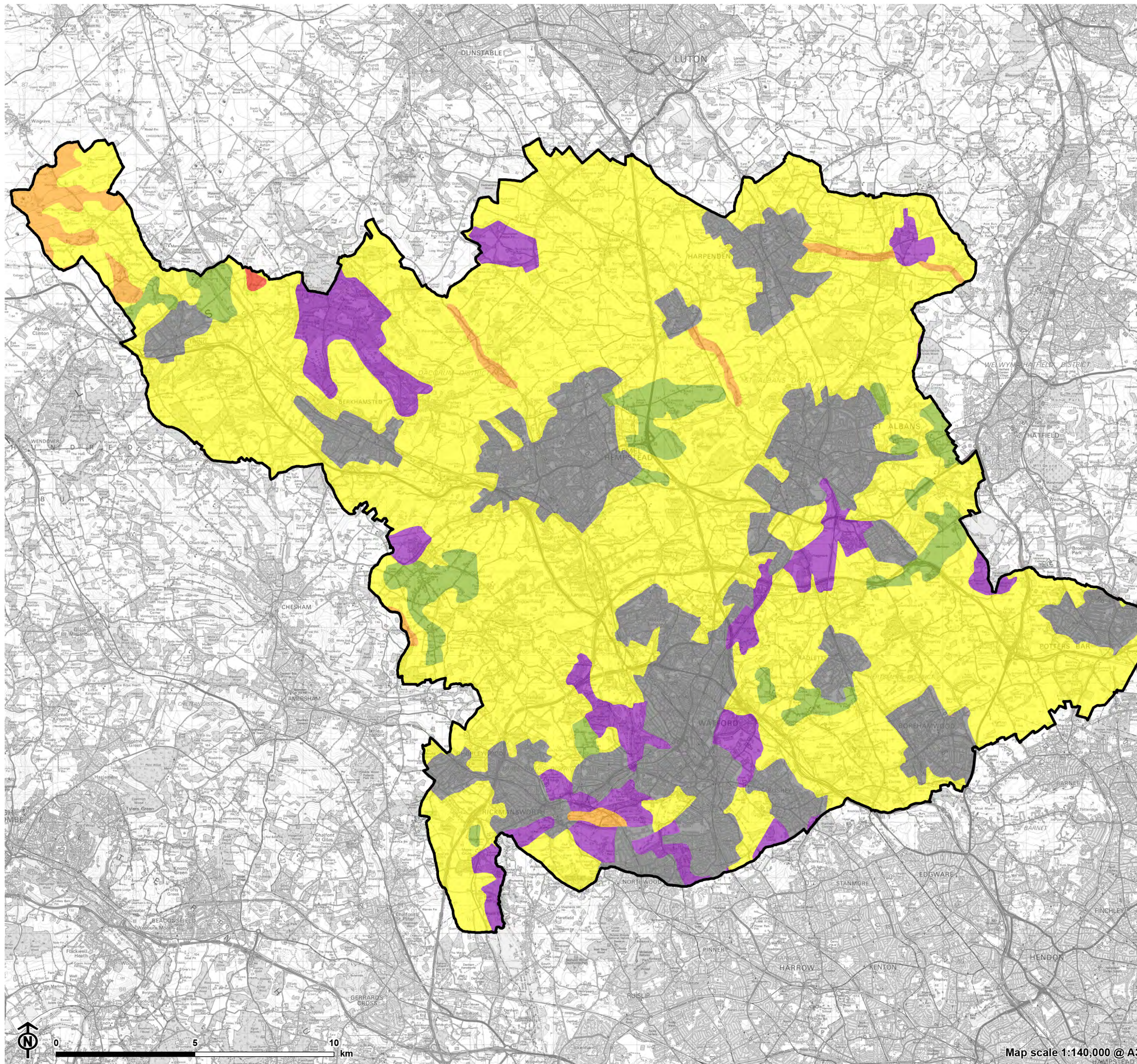
**3.42** According to Natural England's Agricultural Land Classification, SW Hertfordshire consists of a mix of Grades 2, 3 and 4 agricultural land and urban areas. Figure 3.6 shows the agricultural land classification within SW Hertfordshire. Data is not available to show the split between Grades 3a and 3b (Grade 3a is considered to be high quality soil, while Grade 3b is not). The

majority of the soils within SW Hertfordshire are considered loamy. Specifically, loamy and clayey soils are found in the south and loamy and slightly clayey soils are found in the north.

**3.43** Hertfordshire's geology is primarily chalk bedrock from the Cretaceous period, with a covering of London clay in the south of the County. Lying on top of the bedrock, there are superficial deposits of clay-with-flints covering a large proportion of western Hertfordshire, including the Chilterns dip slope. Sand and gravel is the most commonly worked mineral in Hertfordshire, with land-won sand and gravel providing the only source of soft sand and sharp sand. The sand and gravel resources are found in most parts of the County, although they are particularly concentrated in a belt sitting across the southern half of the County. This area entirely covers the local authority areas of Watford, Three Rivers, Hertsmere, Welwyn Hatfield and Broxbourne. Large parts of St Albans and East Hertfordshire are also covered along with a small part of Dacorum **[See reference 89]**.

**3.44** Geodiversity is the variety of rocks, fossils, minerals, natural processes, landforms and soils that underlie and determine the character of our landscape and environment. Within Hertfordshire there are 19 sites designated as Regionally Important Geological and Geomorphological Sites (RIGs) which are the most important places for geology outside of statutorily protected land such as Sites of Special Scientific Interest (SSSIs). There are nine sites within SW Hertfordshire: four sites currently designated within Dacorum, three within Hertsmere and two within St. Albans.

Figure 3.6: Agricultural Land Classification



- South West Hertfordshire
- Grade 1 (Excellent)
- Grade 2 (Very good)
- Grade 3 (Good to moderate)
- Grade 4 (Poor)
- Grade 5 (Very poor)
- Non Agricultural
- Urban

## Waste

**3.45** Hertfordshire County Council is the waste disposal authority and the minerals and waste planning authority for the County. However, the authorities within SW Hertfordshire are responsible for waste collection. **Table 3.10** below sets out the total waste generated per household within each of the authorities within SW Hertfordshire for the years 2011/12 and 2018/19. This shows that there has been a decrease in the amount of residual waste across the area. However, the amount of development proposed through the various Local Plans within SW Hertfordshire could increase waste arisings.

**Table 3.10: Total household waste generated in SW Hertfordshire (kilograms per household)**

Year	Dacorum	Hertsmere	St. Albans	Watford	Three Rivers
2011/12	912	946	874	861	975
2018/19	851	863	838	810	864

**3.46** The percentage of Local Authority Collected Waste that is recycled or composted in Hertfordshire was 51.7% in 2018/19, which is higher than the England average of 44.9%. Each planning authority within SW Hertfordshire increased its recycling rate except Dacorum which had a slight reduction for the year 2018/19 compared to 2017/18. Furthermore, St. Albans and Three Rivers achieved recycling rates above 62% for the same year. Hertfordshire County Council aims to reach 65% by 2035 [\[See reference 90\]](#).

## Water

**3.47** Water consumption in Hertfordshire is above average compared to the rest of the UK. At the Hertfordshire Water Summit in 2013, it was suggested that water consumption in Hertfordshire was 166 per capita consumption (pcc),

compared to the UK average of 150 pcc [See reference 91]. Furthermore, with lower than average annual rainfall, a growing population and water use 16% higher than the national average, Hertfordshire's water resource are under pressure and will continue to worsen due to climate change.

**3.48** Hertfordshire County Council, in conjunction with nine Hertfordshire local authorities and Chiltern District Council, commissioned a Water Study in 2015 which was completed in early 2017 [See reference 92]. This involved collaborative working between the County and district councils, the Environment Agency, Hertfordshire LEP and the water companies that serve the area (Thames Water, Affinity Water and Anglian Water). The study describes the current environmental and infrastructure capacity with regards to water infrastructure and resources in the Hertfordshire area and considers solutions to any capacity issues identified over the period 2021 to 2051. This includes a provisional five-point action plan, including the following headline actions:

- Establish a water and sewerage infrastructure delivery partnership.
- Establish an integrated planning portal and single point of contact.
- Create a growth risk profile.
- Explore long term funding opportunities.
- Plan for AMP7 (2020-25) and the Price Review Mechanism (PR19) [See reference 93].

**3.49** Thames Water covers most of Hertfordshire's drainage catchment split into two main catchments, each with a sewage treatment works (STW). Maple Lodge STW is located in Rickmansworth and serves the western portion of Hertfordshire. The Maple Lodge site serves Hemel Hempstead along with St Albans and Watford and given the future growth planned for this area will need to have upgrades in order to provide sufficient treatment capacity. There is also a smaller STW, Blackbirds, within Hertsmere to the west of Radlett. At present, Blackbirds is estimated to treat 17% of the total flow in the main trunk sewer, which comprises foul flows from St Albans, London Colney, Hatfield, Potters Bar and Borehamwood [See reference 94].



**3.50** The River Colne is a river and tributary of the River Thames with over half its course within southern Hertfordshire. The river is under various pressures such as flow, physical modification, diffuse pollution and climate change. The River Colne has a Water Framework Directive (WFD) classification of moderate in the upstream section, but this falls to poor in the middle and downstream sections. All three sections are failing for flow and phosphates, the phosphate fluctuate slightly through the Colne starting as bad in the upstream section, which improves to moderate in the middle section but then drops to poor in the downstream section [\[See reference 95\]](#).

**3.51** There are three chalk streams that run through SW Hertfordshire, the Rivers Bulbourne, Gade and Ver. These are globally rare habitats that are at risk of over abstraction. The Chilterns Chalk Streams Project [\[See reference 96\]](#) has been created to improve river habitats, improve access and enjoyment and promote the sustainable use of water within the Chilterns.

### Minerals

**3.52** Where development takes place within areas of mineral resources, this may result in the sterilisation of minerals, meaning that potentially useful mineral resources will no longer be available for extraction and use in the future.

**3.53** Hertfordshire contains three main types of naturally occurring worked minerals: sand and gravel, chalk and brick clay, which can be seen in **Figure 3.7** below. Sand and gravel are the major aggregate minerals worked within the County.

**3.54** Sand and gravel deposits are found in most parts of Hertfordshire although they are concentrated in an area south of a line between Bishops Stortford in the east and Hemel Hempstead in the west (often referred to as the sand and gravel belt). This area includes the entirety of the District Council areas of Three Rivers, Watford and Hertsmere, large parts of St Albans and a small part of Dacorum. Currently there are seven operational sand and gravel quarries in

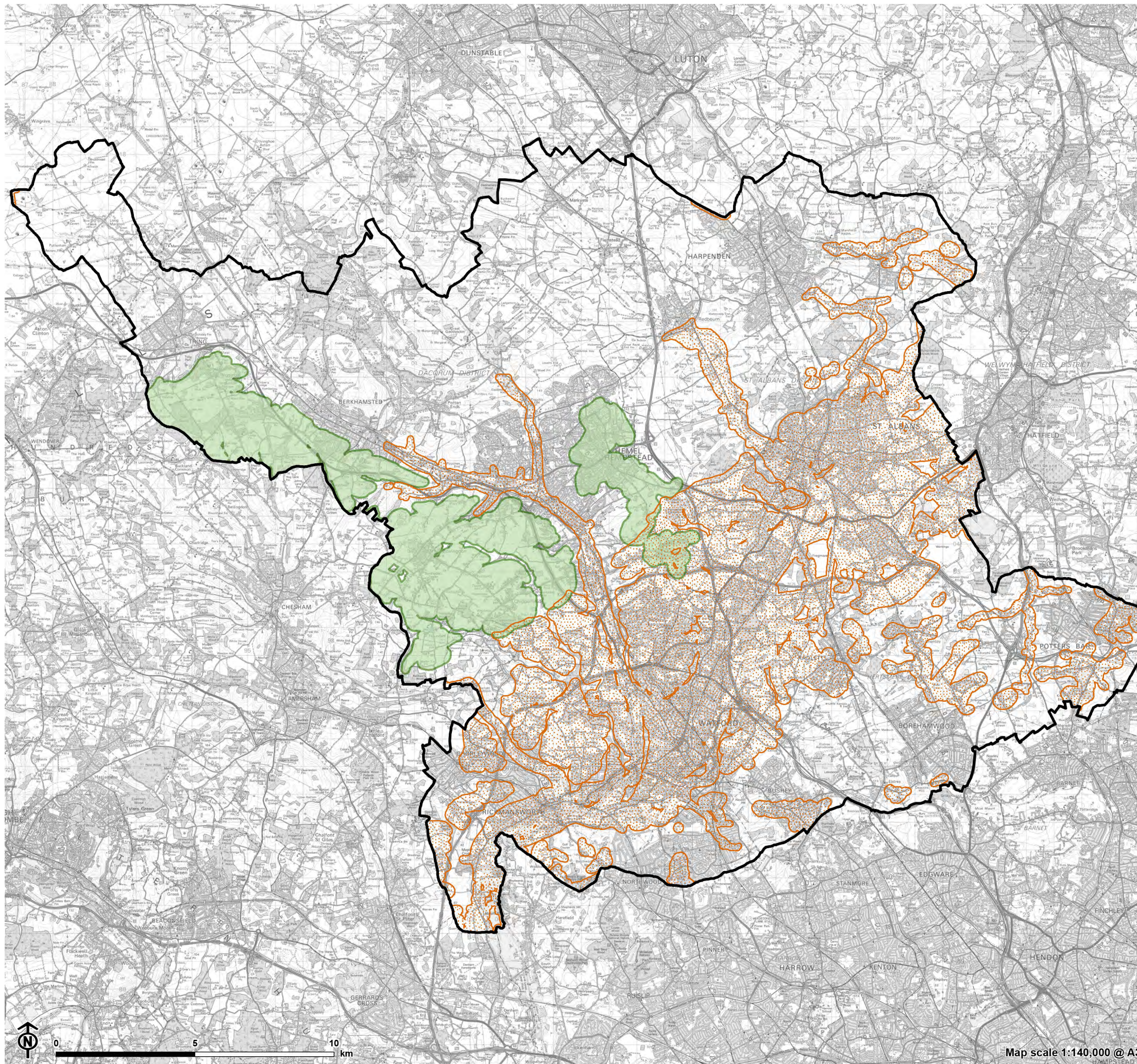
Hertfordshire, but of the seven sites, sand and gravel extraction is only taking place at three sites:

- Thorley Hall Farm;
- Tyttenhanger Quarry, Colney Heath; and
- Hatfield Quarry with the linked Symondshyde extraction site.

**3.55** The remaining four sites are no longer extracting sand and gravel and are either in the process of infill/restoration or are not currently operating. An additional site (Coopers Green Land, Hatfield Quarry) has received planning approval subject to S106 agreements [\[See reference 97\]](#). There are also some areas of small-scale clay extraction linked to the last remaining local brick makers in Bovingdon, Dacorum.

**3.56** Of the total land-won sand and gravel sales from quarries in Hertfordshire (1,170,985 tonnes) as reported in the Aggregate Minerals Survey 2014, 59% was used within Hertfordshire. Of this figure, 95% was transported by road and 5% by rail. The remaining sand and gravel was exported to West London (12%), East of England (12%), Bedfordshire (8%), East London (5%) and Essex, Southend and Thurrock (3%) [\[See reference 98\]](#).

Figure 3.7: Minerals Safeguarding Areas within South West Hertfordshire



- South West Hertfordshire
- Mineral Safeguarding Area - Brick and Clay
- Mineral Safeguarding Area - Sand and Gravel

## Biodiversity

**3.57** Across the UK, protected species have declined by 60% over the last 50 years due to the adverse impacts of climate change. There has been a 13% decline in average species abundance and 5% decline in average species distribution. 15% of species were found to be currently threatened with extinction from the UK and 2% have already gone extinct since 1970 [See reference 99].

**3.58** In the last 50 years, 76 species (1% of those assessed) became extinct in Hertfordshire; more than three species every two years. Of these, 35 were invertebrates, 26 were plants, 13 were vertebrates and two were lichens. 1,446 species (19% of those assessed) are currently threatened with extinction in Hertfordshire. This includes over 1,000 invertebrates and 260 plants [See reference 100].

**3.59** In response to these challenges, Hertfordshire County Council produced a Local Biodiversity Action Plan to identify priorities and actions for improving biodiversity within the county. The Action Plan seeks to ensure that national targets for species and habitats are implemented in a Hertfordshire context. Hertfordshire County Council has also implemented a Pollinator Strategy (2019-2024) to optimise the use of county council owned land, allocating areas for beehives and installing and maintaining 'bee hotels' within suitable green spaces.

**3.60** At the European level, the Special Area of Conservation (SAC) designation applies to two areas of Chiltern Beechwoods in Dacorum. The largest area is at Ashridge, with a smaller area on the western boundary of the Borough, around Stubbings Wood which lies within Tring Park. This large site is protected for its beech forests, semi-natural dry grasslands and scrub, and its population of stag beetles.

**3.61** There are a total of 14 Special Sites of Scientific Interest (SSSI) in SW Hertfordshire which are designated for either their biological or geological

interest. There are also 27 Local Nature Reserves (LNRs) across SW Hertfordshire. The County Council owns and manages two woodland areas which fall within National Nature Reserves in Hertfordshire. Figure 3.8 shows the locations of biodiversity designations within SW Hertfordshire.

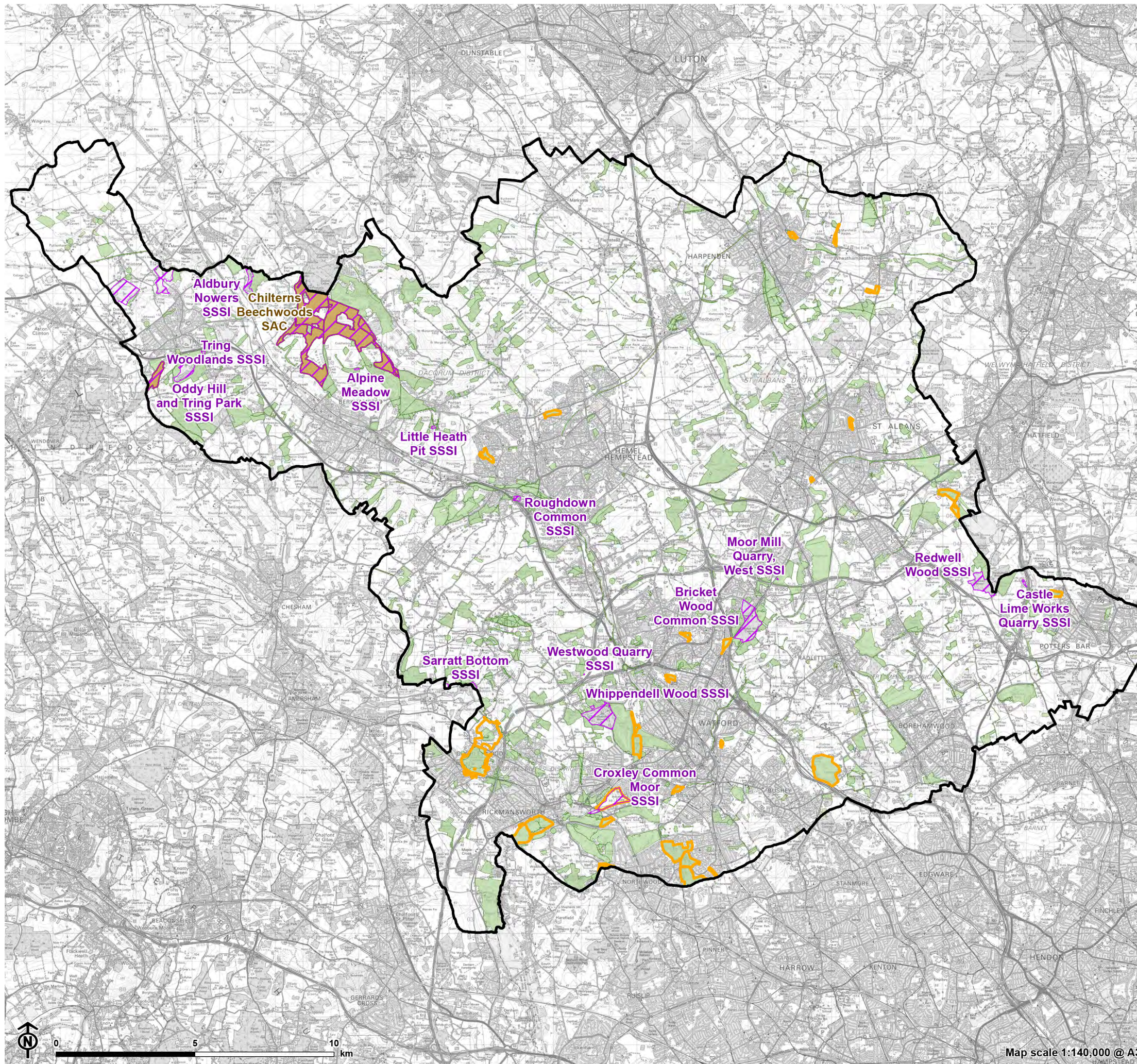
**3.62** SW Hertfordshire contains seven priority habitats: Chalk Rivers, Lowland Meadow, Good Quality Semi-Improved Grassland, Coastal and Floodplain Grazing Marsh, Lowland Heath, Traditional Orchards and Deciduous Woodland. The area also contains numerous patches of Ancient Woodland scattered throughout the area. Notably, chalk streams are important habitats for wildlife and support a range of plants and animals and are a key characteristic of the Chilterns landscape.

**3.63** The Hertfordshire Biodiversity Action Plan [\[See reference 101\]](#) identified 12 Key Biodiversity Areas in SW Hertfordshire ranging from wetlands and heath to woodlands and chalk grassland. These areas are to be prioritised for conservation action as they represent concentrations of important habitats.

**3.64** Many of the older towns within SW Hertfordshire are historic market towns with relatively high development density. Therefore, tree cover within the public realm is quite limited. It covers occasional areas of street tree planting except in lower density leafy suburbs, such as in parts of St. Albans, Harpenden and Rickmansworth, or where mature woodland have become absorbed within larger settlement growth [\[See reference 102\]](#).

**3.65** Recently the HRA for the emerging Dacorum Local Plan concluded that likely significant effects on the Chiltern Beechwoods SAC were possible due to recreational impacts, so a full Appropriate Assessment was required. The mitigation strategy includes a 'development exclusion zone' of 500m around the European site.

Figure 3.8: Biodiversity designations within South West Hertfordshire



- South West Hertfordshire
- Site of Special Scientific Interest
- Special Area of Conservation
- Local Nature Reserve
- Local Wildlife Site

## Historic Environment

**3.66** There are many historic and heritage designations within SW Hertfordshire, including 103 Conservation Areas, 2,504 listed buildings, 12 Registered Parks and Gardens and 58 Scheduled Monuments. Figure 3.9 below shows the locations of the designated heritage assets within the area. At present, there are five heritage assets included on Historic England’s Heritage at Risk Register within SW Hertfordshire [See reference 103]. **Table 3.11** below summarises the number of heritage designations across the five authorities, including the number of heritage assets at risk.

**Table 3.11: Summary of cultural heritage designations**

District/Borough	Listed Buildings	Conservation Areas	Scheduled Monuments	Registered Parks and Gardens	Heritage Assets at Risk
Dacorum	911	25	32	4	2
Three Rivers	349	22	3	2	1
Hertsmere	317	23	4	4	0
Watford	92	10	0	1	1
St. Albans	857	19	19	2	1

**3.67** There are no registered battlefields or World Heritage Sites within Hertfordshire, but there are six National Trust properties within SW Hertfordshire. There are also a number of locally listed Historic Parks and Gardens within the area [See reference 104].

**3.68** Development can affect both designated and undesignated heritage assets either directly or as a result of impacts on the setting of these assets. As well as listed buildings and scheduled monuments, consideration will also need to be

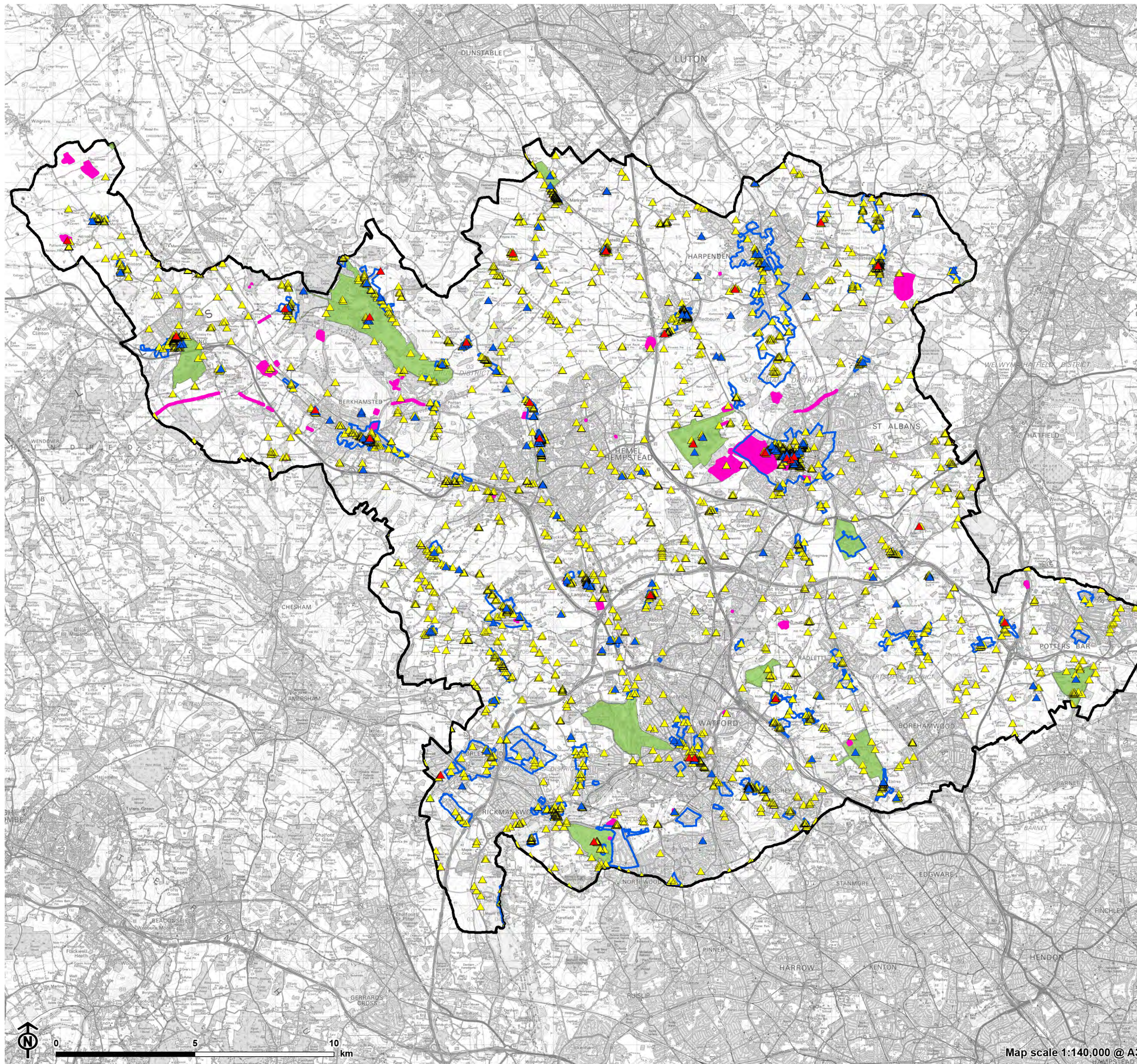
given to areas of archaeological potential which could be affected by new development.

**3.69** The Hertfordshire Historic Environment Record (HER) contains information on historic buildings, archaeological remains, historic sites and military remains. It can be used to identify significant historic remains and contains information on surveys and archaeological excavations undertaken in Hertfordshire.

**3.70** Proximity to London and the rapid growth in development pressures in the 20th century have resulted in the growth of suburban development in the southern part of Hertfordshire. This in turn led to the designation of a large proportion of the county as Green Belt. Hertfordshire's built environment is generally low rise, including in SW Hertfordshire. Guidance from Hertfordshire County Council [\[See reference 105\]](#) states that historic buildings need to adapt and manage change to remain viable. It also encourages new development to respect historic buildings, but not to replicate them. Much of Hertfordshire is characterised by traditional (mainly pre 1850s) building materials related to its geology and landscape. However, Hemel Hempstead New Town differs from the rest of SW Hertfordshire as it was developed in the late 1940s. The town is compact and is divided into residential neighbourhoods each with their own service centre. Much of the town's features are modernist, but it includes distinctive landscape features such as the Grand Union Canal and the Gade and Bulbourne Valleys.



Figure 3.9: Designated Heritage Assets within South West Hertfordshire



- South West Hertfordshire
- Listed Building (by grade)**
- ▲ I
- ▲ II\*
- ▲ II
- Scheduled Monument
- Registered Parks and Gardens
- Conservation area

## Landscape

**3.71** The Chilterns Area of Outstanding Natural Beauty (AONB) falls within SW Hertfordshire, as shown in **Figure 3.10** below. **Figure 3.10** also shows the Chilterns Beechwoods SAC and other SACs within a 10km buffer of SW Hertfordshire for context.

**3.72** The Chilterns contain an important diversity of habitats ranging from chalk grassland and to the country's most extensive areas of beech woodland. Over 11% of the AONB lies within a total of almost 500 Local Wildlife Sites [See reference 106]. Chalk streams are a characteristic and attractive feature of the Chilterns landscape. The Chilterns AONB Management Plan [See reference 107] sets the framework for protecting and enhancing the Chilterns. It outlines that many of the wildlife and plant species present in the Chilterns are in long-term decline due to:

- changes in land management practices,
- lack of wildlife habitat management, environmental and ecological change
- impact of people and dogs; and
- habitat fragmentation.

**3.73** England has been divided into 159 separate National Character Areas (NCAs), each of which are regarded as distinct natural areas. A unique combination of landscape, biodiversity, geodiversity, history, and cultural and economic activity defines each area in question. The boundaries of each NCA relate to how these elements have combined to form the landscape and do not relate to administrative boundaries.

**3.74** SW Hertfordshire is split between four NCAs, as shown in Figure 3.11:

- Chilterns is an extensively wooded and farmed landscape which is underlain by chalk bedrock that rises up from the London Basin to form a north-west facing escarpment offering long views over the adjacent vales.

- Bedfordshire and Cambridgeshire Claylands is a broad, gently undulating, lowland plateau dissected by shallow river valleys that gradually widen as they approach The Fens NCA in the east.
- Northern Thames Basin contains a diverse range of semi-natural habitats including ancient woodland, lowland heath and floodplain grazing marsh.
- Thames Valley is a mainly low-lying, wedge-shaped area, widening from Reading, which includes Slough, Windsor, the Colne Valley and the southwest London fringes. The River Thames provides a unifying feature through a very diverse landscape of urban and suburban settlements, infrastructure networks, fragmented agricultural land, historic parks, commons, woodland, reservoirs and extensive minerals workings.

**3.75** Hertfordshire is particularly wooded in some areas. Significant areas of wood pasture and pollarded veteran trees are also present. Mixed farming is characteristic of the Thames basin, with arable land predominating in the Hertfordshire plateaux.

**3.76** The southern portion of the county is mostly acidic and has a highly distinctive character, extending down into much of Middlesex. This is the most wooded part of Hertfordshire and also contains the majority of the county's remaining heathland and acid grassland. The west of the county also holds a number of chalk rivers, chalk grassland and acidic areas [\[See reference 108\]](#).

**3.77** The Green Belt, whilst a planning rather than a landscape designation, plays an important role in safeguarding the countryside from encroachment, preserving the setting and special character of the area's historic settlements and assisting in urban regeneration. In Hertfordshire, an area of 84,640 hectares of land is designated as Green Belt, making up 51.5% of the county and around 70% of SW Hertfordshire, as shown in **Figure 3.12**.

Figure 3.10: Areas of Outstanding Natural Beauty and Special Areas of Conservation within and outside of South West Hertfordshire

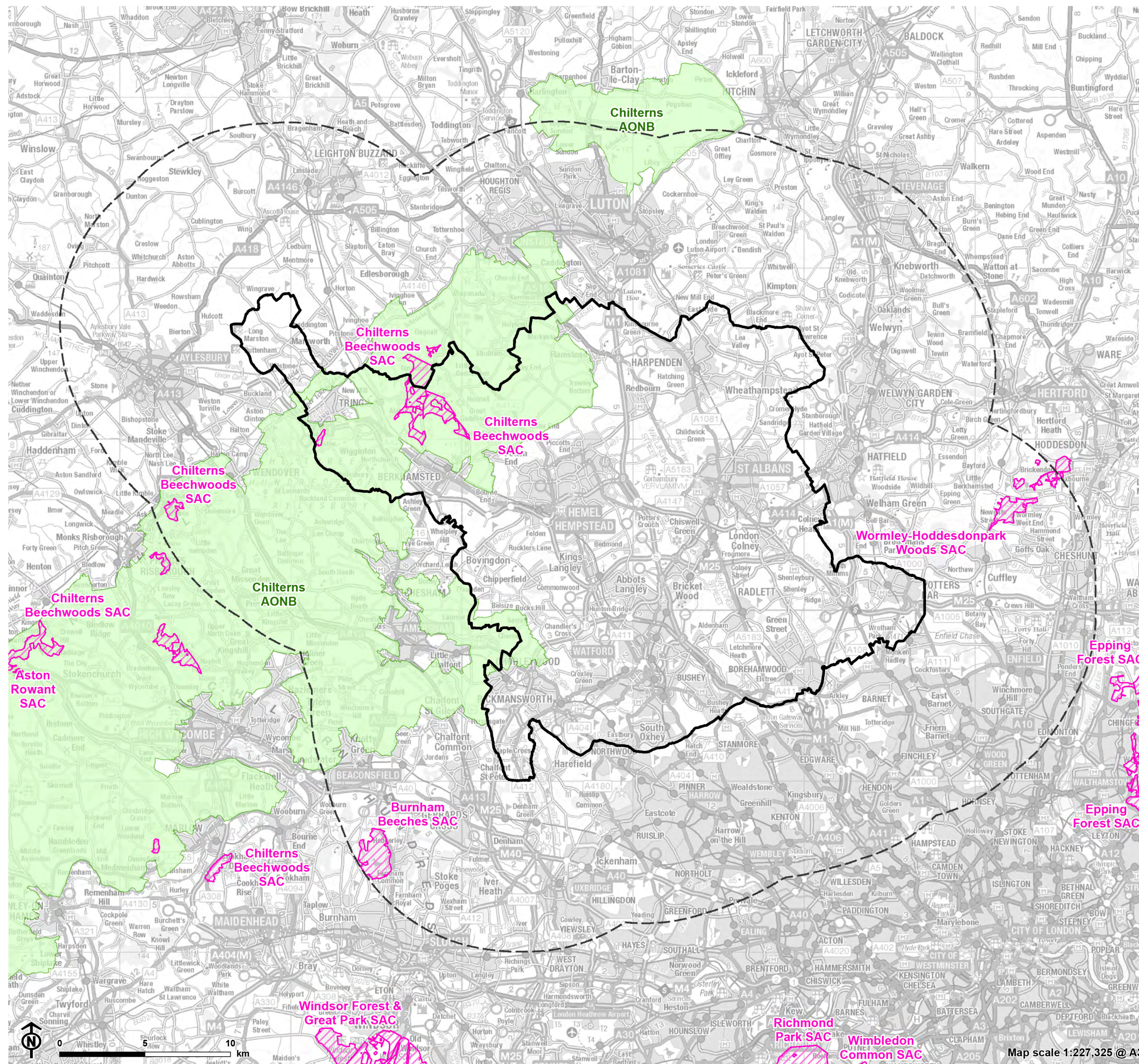
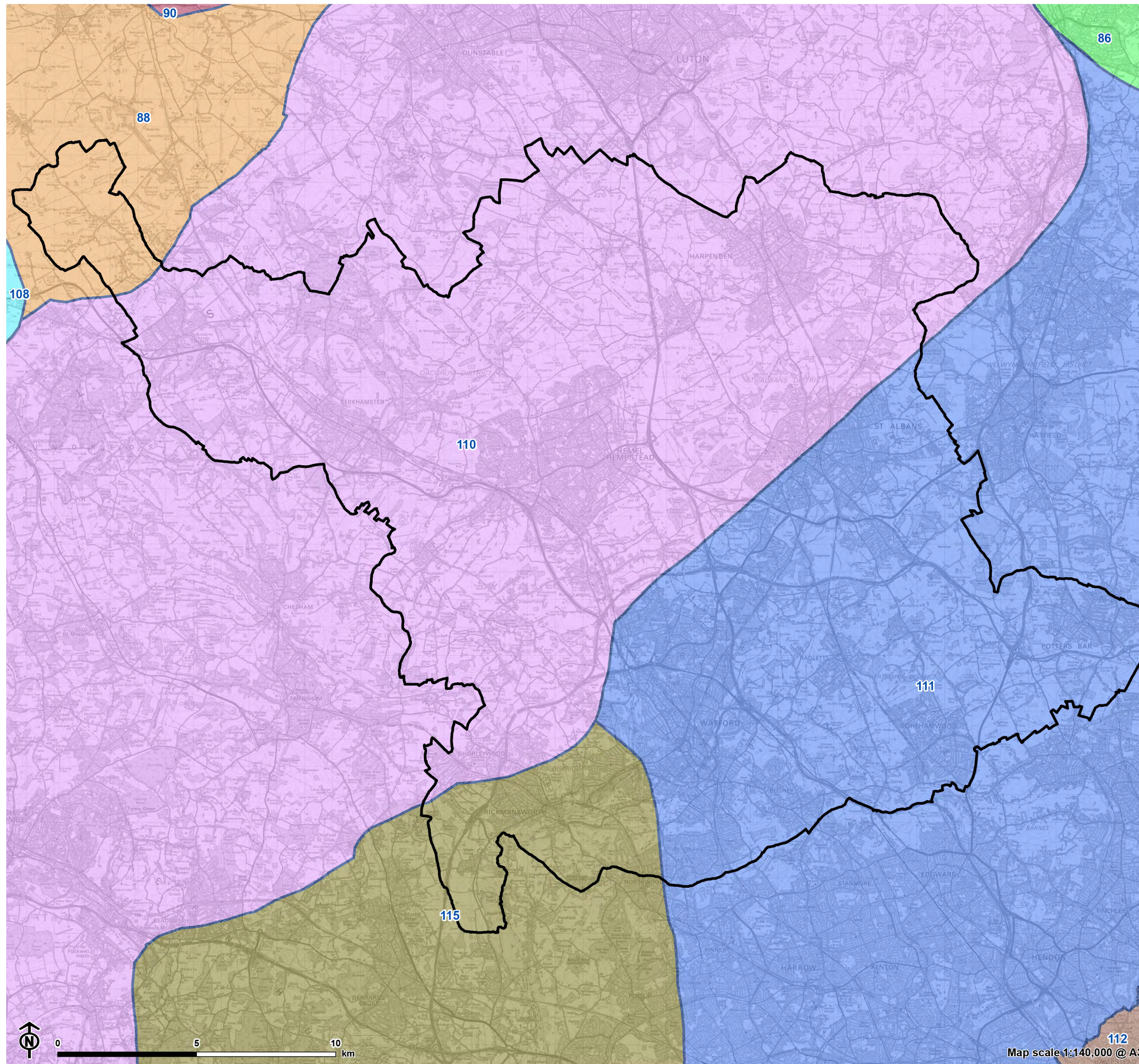


Figure 3.11: National Character Areas within South West Hertfordshire



- South West Hertfordshire
- 86: South Suffolk and North Essex Clayland
- 88: Bedfordshire and Cambridgeshire Claylands
- 90: Bedfordshire Greensand Ridge
- 108: Upper Thames Clay Vales
- 110: Chilterns
- 111: Northern Thames Basin
- 112: Inner London
- 115: Thames Valley

