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Telford and Wrekin Local Plan Review

Integrated Impact Assessment: Scoping Report

September 2020

Quality information

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Revision History

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1. Introduction

1.1 Background

1.1.1 The Borough of Telford & Wrekin is located between the urban areas of Birmingham and the Black Country to the east and the rural areas of Shropshire and Wales to the west. Telford & Wrekin adjoins the administrative boundaries of Shropshire, South Staffordshire and Stafford Borough Councils. Figure 1.1 provides a location map for the Local Authority area.

1.1.2 Telford & Wrekin Council (the Council) are in the process of undertaking a Local Plan Review. The purpose of a review is to take account of changing circumstances affecting the area, or any relevant changes in national policy. A review enables the Council to address local opportunities and/or challenges in areas such as natural environment, transport, health and wellbeing, provision of affordable and specialist accommodation and climate change.

1.1.3 AECOM has been commissioned by the Council to lead on an Integrated Impact Assessment (IIA) in support of the Local Plan Review

1.1.4 This document is a 'scoping report', which sets out the background information, policy context and key issues in relation to a range of sustainability issues. This is one of the first outputs from the IIA process, and it sets the framework for future work.

Table 1.1: Key facts relating to the Local Plan Review

Name of Responsible Authority	Telford and Wrekin Council
Title of Plan	Review of the Telford and Wrekin Local Plan
Spatial Area covered by the plan	The Local Plan Review will cover the Local Authority area. However, there will also be a need to consider cross boundary issues with neighbouring locations (especially those with a strong link to).
Summary of content	The following document is a representation of current statistics and characteristics of the Telford and Wrekin Council in relation to environment
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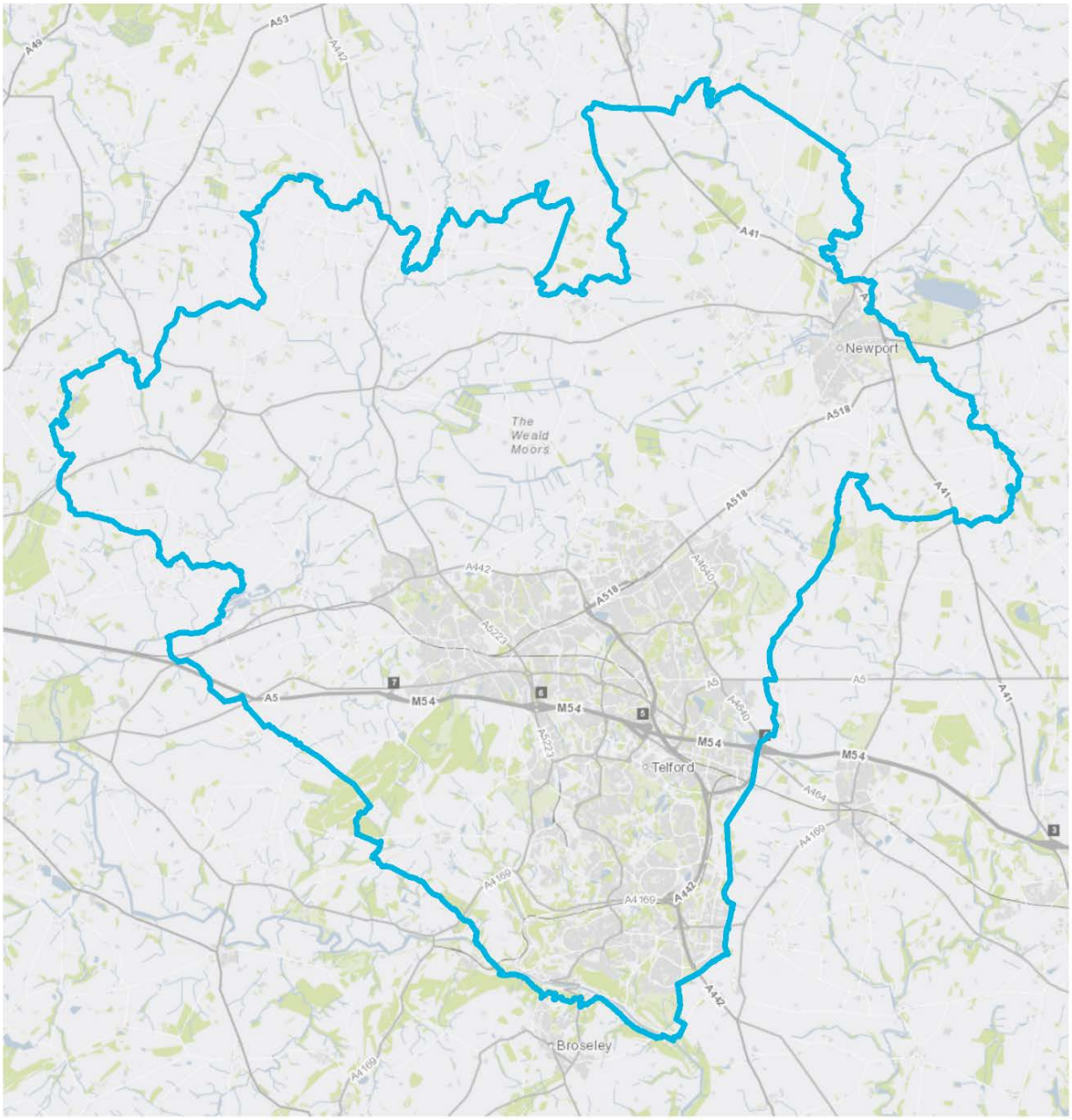
Figure 1.1 Telford and Wrekin District Council



1.2 What is Integrated Impact Assessment?

1.2.1 There are a range of impact assessment tools that can be used to assess how a plan, programme, project or particular development performs against a range of criteria. The common aim of these tools is to gain an understanding of impacts upon environmental, social or economic issues (or a combination of these); with the aim of achieving a better performing proposal overall.

1.2.2 Certain impact assessment tools are a legal requirement for when preparing particular plans, and this is the case for the Review of the Telford and Wrekin Local Plan (the Review). For example:

- A Sustainability Assessment / Strategic Environmental Assessment (SA/ SEA) which reviews and predicts how a proposal performs against a range of environmental and sustainability factors; whilst suggesting ways in which mitigation and enhancement measures can be taken into consideration.

- A Health Impact Assessment (HIA) as defined by the World Health Organisation is a practical approach to reviewing potential health effects of plans, policies and projects.

- An Equalities Impact Assessment (EqIA) reviews and seeks to ensure that equality and fairness is achieved in the delivery of services and how people experience life. Requirements emanate from the Equality Act 2010.

- Habitat Regulations Assessment (HRA) seeks to identify and assess any aspects of a Local Plan that would cause any adverse effect on the integrity of Natura 2000 sites, otherwise known as European sites.

1.2.3 It is possible to undertake these processes separately, but often an integrated approach is taken. This is sensible given that there are considerable overlaps between the processes.

1.2.4 An integrated impact assessment (IIA) therefore helps to reduce duplication of efforts (and the number of separate reports); whilst taking advantage of the strengths of each impact assessment tool. In turn, this aids in undertaking effective consultation with interested parties.

1.2.5 To undertake a successful IIA it is important to set out the approaches clearly from the outset and to invite comments. This is one of the purposes of the Scoping Report.

1.2.6 It is also important to ensure that the IIA is closely aligned to plan-making activities so that it can guide / influence decisions in a meaningful and positive way.

1.3 Our approach to integration

1.3.1 SA/SEA can be regarded as the most comprehensive impact assessment tool with regards to plan-making in the UK. This is because it is enshrined in legislation and covers a wider range of factors compared to more specific impact assessment tools such as HIA / EqIA.

1.3.2 For this reason, the SA / SEA process is typically used as the over-arching framework for which an integrated impact assessment is conducted. The requirements of HIA and EqIA are then woven into the SA process. This is the approach being taken for the Review.

1.3.3 Habitat Regulations Assessment (HRA) have entirely separate legislative drivers and purposes and will be a separate process but it would be incorporated into the IIA in the following ways. It has helped to inform the biodiversity section of this Scoping Report. It has been physically integrated with a copy of the HRA scoping report attached at Appendix II.

Meaningful integration

1.3.4 Integrated Impact Assessment should cover all the relevant sustainability factors that a plan could have significant effects upon. In this sense, health issues, equality and diversity issues and community safety issues would all typically be covered through the Sustainability Appraisal process.

1.3.5 However, IIA is not simply about including health, equality and community safety issues within a standard SA process; rather it should present nuanced approaches to data gathering and assessment within the broader framework of an SA. This ensures that the principles and methods of EqIA and HIA are captured properly, whilst using the SA as the overall approach to conduct the assessments.

1.3.6 For each step of the SA process, we have sought to reflect the requirements and benefits of HIA, EqIA and HRA in a meaningful, but proportionate way.

IIA Stage	How have HIA, EqIA and HRA been integrated?
Scoping	Specific baseline information presented for each group with protected characteristics. Information relating to health characteristics of affected populations have been included in a specific health and wellbeing chapter. Further health related baseline data is incorporated throughout the scoping report, with health and wellbeing forming a central theme and vulnerable 'receptors' being identified throughout. A focused literature review has been included for each topic area to demonstrate links to health and wellbeing. A complete HRA scoping exercise has been completed and included at Appendix II.
Appraisal framework / Methods	The appraisal methodology includes several objectives relating to health, equality and biodiversity; with specific objectives set-out in the IIA framework. Sources of information, assumptions and team members that will undertake appraisals have been identified. This demonstrates how stakeholders with specific knowledge, experience and interest in health and equality factors will input to the appraisal process. Key stakeholders will be engaged to input to the assessment findings. This is important because HIA, EqIA and HRA work best when they involve people who can contribute different perspectives, knowledge and insight.
Appraisal of options	The options identification process will seek to identify whether there are approaches that are led by social value and health outcomes. Appraisal of options will report upon the implications with regards to health impacts and equality (through the Integrated Appraisal Process). The HRA will consider the whether a plan is 'likely to have a significant effect' on a European site.

IIA Stage	How have HIA, EqIA and HRA been integrated?
Appraisal / screening of policies	The Plan will be appraised against the IIA framework, with the primary aim of identifying significant effects. The IIA involves objectives and supporting questions that will interrogate the health and equality implications of the Plan. The HRA will consider the whether a plan is 'likely to have a significant effect' on a European site and consider the need for an appropriate assessment.
Mitigation and enhancement	Recommendations are made in SA, HIA and EqIA; each with the intention of avoiding and minimising negative effects and enhancing benefits. For the HRA where adverse effects are identified the HRA will recommend mitigation measures and alternative solutions.

1.4 Scoping explained

Introduction

1.4.1 Scoping is undertaken as part of most impact assessment processes, and therefore, an integrated approach simply helps to combine the evidence gathering stages and devise appropriate methodologies.

1.4.2 As described above, the IIA uses the SA process as the over-riding structure to the approach. Therefore, the scoping exercise is arranged and presented in a similar way.

1.4.3 Essentially, scoping involves identifying a 'framework' of sustainability issues and objectives that should be a focus of, and provide a methodological framework for, the appraisal of the emerging plan (and reasonable alternatives).

1.4.4 In order to facilitate the identification of sustainability issues/objectives, scoping firstly involves review of the 'policy context' and 'baseline'. It is not a firm requirement to provide a review of literature as part of scoping. However, this is considered a useful exercise to help identify evidence to support any assumptions that are made about the nature of effects. Understanding research and real-world studies is also helpful in terms of feeding into the key issues identification process.

1.4.5 Scoping for the IIA therefore involves the following steps:

1. **Context review** - a review of existing policy and issues/objectives established by Government, the Council and other key organisations. This is broken down by the level at which the policy exists including; *international, national, regional, and local.*
2. **Focused literature review** – a focused review of relevant literature and research that demonstrates the links between different issues and how they interact with health.
3. **Baseline review** - a review of the current 'state of the environment, economy and society' and a consideration of how this might evolve in the absence of the plan. A review of key trends and anticipated impacts that existing/emerging Local Plans are likely to have.
4. **Key issues summary** - a summary of the key (*in the sense that the plan may have an effect*) problems and opportunities identified through steps (1), (2) and (3).
5. **ISA Framework development** - a refinement of the key issues into a set of sustainability objectives (and description of assessment methods).

1.4.6 As described in the previous section, the health, equality and ecology information gathered to support HIA, EqIA and HRA will be built into the wider ISA process. At this stage, the level of information is strategic, but further information can be gathered in support of more detailed assessments should this be deemed necessary.

Structure of this report

1.4.7 The outcomes of the scoping elements introduced through steps 1-5 above have been presented under a series of fourteen key themes, as follows:

- Biodiversity
- Air Quality
- Water Quality
- Soil, Land and Minerals
- Landscape Character
- Historic Environment
- Waste
- Climate Change Mitigation
- Climate Change Resilience
- Housing
- Economy
- Transport
- Health and Wellbeing
- Equality and Diversity

1.4.8 The selected environmental themes incorporate the 'SEA topics' suggested by Annex I(f) of the SEA Directive.[1]

1.4.9 These were refined to reflect a broad understanding of the anticipated scope of plan effects and to incorporate the requirements for HIA and EqIA.

[1] The SEA Directive is 'of a procedural nature' (para 9 of the Directive preamble) and does not set out to prescribe particular issues that should and should not be a focus, beyond requiring a focus on 'the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors' [our emphasis]

2. Biodiversity

2.1 Introduction

2.1.1 DEFRA defined biodiversity as follows in its' 2011 strategy "Biodiversity 2020".

"Biodiversity is the variety of all life on Earth. It includes all species of animals and plants – everything that is alive on our planet. Biodiversity is important for its own sake, and human survival depends upon it".

2.1.2 Biodiversity is a 'catch-all' word, and covers a range of factors that are important to land use planning. As well as the range and diversity of species that it refers to, it also encapsulates particular habitats, ecological networks, and supporting environments.

2.1.3 This section provides a strategic review of the policy context, literature, and baseline position in relation to these important factors.

- Key Habitats
- Nature conservation designations.
- Condition of designated sites
- Trends

2.2 Contextual review

International

2.2.1 The **EU Biodiversity Strategy** was adopted 3 May 2011 with the aims to halt biodiversity loss and degradation of ecosystem services by 2020. The plan recognises that there needs to be value in natural assets to deliver multiple benefits including social, economic and environmental value. The strategy identifies the following targets and is an integral part of the Europe 2020 strategy:

- conserving and restoring nature
- maintaining and enhancing ecosystems and their services
- ensuring the sustainability of agriculture and forestry
- ensuring the sustainable use of fisheries resources
- combating invasive alien species
- addressing the global biodiversity crisis

2.2.2 The **EU Natura 2000** combines a network of sites that are associated with rare and threatened species. It covers habitat types both on land and at sea covering 18% land mass and 6% marine territory within the EU. The Natura 2000's purpose is to protect biodiversity within the EU.

2.2.3 The **Ramsar Strategic Plan 2016 - 2024** is an intercontinental plan commissioned by the Convention of Wetlands. It outlines 19 goals with specific targets relating to wetlands and waterbodies ranging from lakes, rivers, aquifers, estuaries and tidal flats. The Convention of Wetlands is an international intergovernmental treaty that provides direction and a framework for conserving the use of wetlands and their resources. The convention was adopted in the city of Ramsar in 1971 with approximately 90% of UN member states.

2.2.4 The **Marches Ecosystem Assessment 2016**[2] was an EU initiative that assessed natural capacities and ecosystem services value in Herefordshire, Shropshire and Telford & Wrekin. The report found that planning and inherent land use-changes has the ability to significantly impact ecosystem services in particular when cumulative effects are assessed.

National

2.2.5 Key messages from the **National Planning Policy Framework**[3] (NPPF) include:

- One of the three overarching objectives of the NPPF to 'contribute to protecting and enhancing our natural, built and historic environment' including by 'helping to improve biodiversity'.
- Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value […], take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scape across local authority boundaries.
- Planning policies and decisions should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with the statutory status or identified quality in the development plan); and minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures.
- To protect and enhance biodiversity and geodiversity, plans should:
  - Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping-stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
  - Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.
  - Take a proactive approach to mitigating and adapting to climate change, considering the long-term implications for biodiversity.
- The presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined.

2.2.6 The Government's **25 Year Environment Plan**[4] **(2018)** sets out a strategy for managing and enhancing the natural environment, embedding 'net gain' principles as key to environmental considerations.

2.2.7 **The Biodiversity 2020 Strategy**[5] (2011) presents a strategy for England's wildlife and ecosystem services which builds on the Natural Environment White Paper[6] and sets out the

[2] Hölzinger, O., 2016: Marches Ecosystem Assessment - An Assessment of the Natural Capital and Ecosystem Services in Herefordshire, Shropshire and Telford & Wrekin. Shropshire Council on behalf of the Shropshire, Telford & Wrekin Local Nature Partnership. Shrewsbury.
[3] MHCLG (2019) National Planning Policy Framework [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf
[4] HM Government (2018) A Green Future: Our 25 Year Plan to Improve the Environment [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/673203/25-year-environment-plan.pdf
[5] DEFRA (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services [online] available at: https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services
[6] DEFRA (2012) The Natural Choice: securing the value of nature (Natural Environment White Paper) [online] available at: http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf

"strategic direction for biodiversity for the next decade". The strategy aims to halt biodiversity loss and improve ecological networks and ecosystems for all people.

2.2.8 The **UK Biodiversity Action Plan**[7] (BAP) identifies priority species and habitats requiring conservation action. Although the UK BAP has been superseded, BAP priority species and habitats have been used to draw up statutory lists of priority species and habitats in England.

2.2.9 The Department of Environment Food & Rural Affairs have released '**The Environmental Bill 2020 policy statement**[8]' as part of protection and improvement of the natural environment in the UK. The policy statement addresses biodiversity loss and climate change. The bill introduces mandatory requirements for biodiversity net gains to ensure that developments enhance biodiversity.

2.2.10 The **Natural Environment and Rural Communities Act 2006** states that there is a duty for public authorities to conserve biodiversity including restoring habitats and enhancing population.

2.2.11 The **Natural Environment White Paper 2011** recognises that healthy environments is the foundation of sustained economic growth, prospering communities and personal wellbeing. It sets out how the value of nature can be mainstreamed across our society by facilitating local action, strengthen the connections between people and nature; creating a green economy and showing leadership in the EU and internationally. The paper sets out 92 detailed commitments for action against environmental damage and to help the restoration of the natural environment.

Regional

2.2.12 The **Shropshire and Telford & Wrekin Local Nature Partnership** bridges two council authorities to protect the natural environment and demonstrate exemplar local leadership and awareness about the benefits of healthy natural environments on the community and local economy. The nature partnership received a grant funding from The Department for Environment, Food and Rural Affairs (DEFRA) in 2012 to strategically protect the natural environment.

Local

2.2.13 The **Green Guarantee** is a commitment from the Telford and Wrekin Council to protect council land and green spaces across the borough. The guarantee protects up to 200 sites and have benefited from £52,000 of investment[9].

2.2.14 The **Wrekin Forest Plan 2015 – 2020** was prepared on behalf of the Shropshire Wildlife Trust which includes Telford and Wrekin Council and was development to ensure protection, conservation and management of the Wrekin Forest. The ambition is to have a framework which supports positive landscape scale management.

2.2.15 **A Tree and Woodland Framework for Telford and Wrekin 2016 - 2021**[10]: Connecting Communities with Trees and Woodlands, was a framework for proper care and management of Telford's urban forests and the council's trees and woodland environments. The framework seeks to set out strategic vision in terms of tree and woodland maintained to result in attractive, safe, healthy communities. The document recognises that greenspace is vital, important aspects and are a huge asset to the natural greenspace within the borough.

2.2.16 The **Local Green Infrastructure Needs Study 2013**[11] reviewed several green infrastructure types from cultivated lands to green space and other natural assets. The

[7] JNCC (2007) UK BAP priority species [online] available at: http://archive.jncc.gov.uk/page-5717
[8] DEFRA (2020) Environmental Bill 2020 policy statement [online] available at: https://www.gov.uk/government/publications/environment-bill-2020/30-january-2020-environment-bill-2020-policy-statement
[9] https://www.telford.gov.uk/info/20499/biodiversity_and_natural_environment/1144/green_guarantee
[10] https://www.telford.gov.uk/download/downloads/id/7156/tree_and_woodland_framework_for_telford_and_wrekin_-_policy.pdf
[11] https://www.merseyforest.org.uk/files/Telford_and_Wrekin_Local_Green_Infrastructure_Needs_Study_with_appendices.pdf

report found that there are several SSSI designations which are of concern and that climate change is likely to increase the need for enhanced permeability.

2.2.17 In 2016 Telford and Wrekin Council provided several technical papers providing background evidence for natural environmental policies within the Telford and Wrekin Local Plan (2011-2031) in alignment with NPPF relevant policies. The background studies related to biodiversity, geodiversity, trees, woodlands, green networks and public open space. The technical papers reviewed local policies and strategies to formulate new policies that seek to protect biodiversity habitats, existing public open space and establish green networks.

- Technical Paper – Green Network[12]
- Technical Paper – Public Open Space[13]
- Technical Paper – Biodiversity, geodiversity, trees and woodlands[14]

2.3 Focused literature review

2.3.1 The World Health Organisation (WHO, 2020) states that loss of biodiversity and 'nature' can have significant direct human health impacts and that human health depends on ecosystems that provide fresh water, food and fuel sources. Microorganisms, flora and fauna produce also provide extensive benefits in terms of medicines, pharmacological sciences and biological health.

2.3.2 Increasing bodies of evidence suggest that contact with the natural environment and access to green space and biodiversity (in particular in an urban setting) can provide health benefits and that natural environments have direct positive impacts on well – being (*Bowler et al. 2010; Frumkin 2001; Hartig et al. 2014; Irvine and Warber 2002; Keniger et al. 2013*).

2.3.3 Several studies demonstrate the following links between nature and health and wellbeing:

- Access to green space is beneficial for people that are affected by mental illness including psychological, cognitive and psychological health (*Bloom et. al. 2011; Keniger et. al. 2013*).
- Even short-term exposure to green space has positive benefits for health and well-being (*Bowler et al. 2010; Maller et al. 2006*).
- Biodiversity loss that affects visual qualities, vegetation, animals, soil and water quality can also be harmful to human health (*Mabahwi et. al. 2014*).
- Species richness can also be important. For example, trees which are high in species richness (compared to lower species richness) had a more positive impact on people's anxiety levels (*Wolf et al. 2017)*
- Detriments to people's health are also caused by human factors such as urban development and traffic, which negatively effects air quality (*Mabahwi et. al. 2014*)
- Living closer to natural environments as opposed to urban environments is beneficial for health and well-being (*Wolf et. al. 2017; Rook, 2013; Maas et al. 2009*). It can also provide long term health reductions in death rates, cardiovascular, psychiatric problems and chronic stress (*Hartig 2014, Rook, 2013*).
- Moving and relocating to greener areas (instead of dense and built up areas) demonstrated sustained mental health improvements (*Alcock, et al, 2014*).

[12] https://www.telford.gov.uk/download/downloads/id/4382/b3c_technical_paper_-_green_network.pdf
[13] https://www.telford.gov.uk/download/downloads/id/4381/b3b_technical_paper_-_public_open_space.pdf
[14] https://www.telford.gov.uk/download/downloads/id/4380/b3a_technical_paper_-_biodiversity_geodiversity_trees_and_woodlands.pdf

- The natural environment can promote social interactions and a sense of community (*Kuo et al. 1998*).
- Green spaces can encourage and facilitate physical activity (*Maas, et. al. 2009*).

2.3.4 Spatial planning has the ability to reflect on potential impacts to biodiversity and the secondary effects that biodiversity loss may have on communities and their health and wellbeing. However biodiversity loss in relation to human health, social and behavioural aspects have traditionally been considered less comprehensively in impact assessments (*Fischer et. al., 2010*).

2.4 Baseline review

Designated habitats

2.4.1 Across Telford and Wrekin, there are various biodiversity asset designations from a local and national level which are to be protected from potential threats and enhanced for their natural and environment significance. Designated habitats are of local and national importance and serve the wider community for their outstanding scientific research, unique landforms, historic value, vulnerable species, unique natural habitats and environmental significance.

Nationally Designated Sites

2.4.2 Sites of Special Scientific Interest (SSSI) are nationally designated locations across the UK that are recognised for rare and vulnerable species which are of scientific interest. These sites contain biodiverse ecological, geological and physiological environments which are to be protected and maintained in a favourable condition. There are eight SSSIs, within the council boundary which range from neutral grasslands to earth heritage. The status of the SSSI can change overtime and are monitored by Natural England (Table 2.1).

Table 2.1 SSSIs Designated Site View within Telford and Wrekin, Natural England 2020.

SSSI	Description	Condition Summary	Reasons for designating
Allscott Settling Ponds 43.1ha	Artificial wetland habitat. The habitat is standing open water and canals.	Unfavourable – Declining 100% of site	Series of water-filled lagoons which used to receive water from the former adjacent sugar factory (closed 2007) and supported a bird community of county importance. In recent years this significance has been declining unfavourably. [15]
Lydebrook Dingle 21.0ha	Broadleaved, mixed and yew woodlands. Biological interest.	Unfavourable – Recovering – 100% of site	Was considered the best example of ancient, relatively undisturbed woodlands within Shropshire. Is a steep-sided wooded dingle on Coal Measures and basalt.[16]
Lincoln Hill 5.1ha	Habitat is earth heritage. Geological interest.	Unfavourable – Recovering 100% of site	This is a historic famous fossil site which presents landforms from the Wenlock Series age. [17]
Muxton Marsh 6.7ha	Habitat is neutral grassland.	Unfavourable – Recovering 100% of site	This site is significant for its past coal-mining landscape history. It is a series of complex semi – derelict habitats.[18]
Newport Canal 5.5ha	Habitat standing open water and canals	Unfavourable – No change – 100% of site	Disused canal that provides one of the best localities for aquatic plants in Shropshire.[19] Project underway seeking to invest in and improve the SSSI.
New Hadley Brickpit 0.86ha	Habitat is earth heritage and is of geological interest.	Favourable – 100% of site	Important for its geological history of the southern margin of the Pennine Basin during the Late Carboniferous. [20]
The Wrekin & Ercall 289.80ha	Geological and biological importance. This site forms north of the Shropshire Hill AONB and is used of recreation.	Favourable – 100% of site	Forms part of the Shropshire Hills AONB. [21]
Tick Wood & Benthall Edge 145.3ha	Habitat is broadleaved, mixed and yew woodland, and grassland lowland.	Favourable 10.35% of site Unfavourable recovering 89.65% of site	Area of ancient native mixed deciduous woodland on north and west facing scarp slopes overlooking the Severn Gorge. [22]

2.4.3 Table 2.1 demonstrates that the majority of SSSIs within the borough are of favourable/unfavourable recovering conditions with the exception of Allscott Settling Ponds and Newport Canal. There are several common operations that could likely damage the

[15] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003069.pdf
[16] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1000265.pdf
[17] https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1002200&SiteName=Lincoln%20Hill&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=
[18] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1002720.pdf
[19] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1000116.pdf
[20] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1005646.pdf
[21] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1001585.pdf
[22] https://designatedsites.naturalengland.org.uk/ReportConditionSummary.aspx?SiteCode=S1001608&ReportTitle=Tick%20Wood%20and%20Benthall%20Edge%20SSSI

significance of these assets. These are cultivation, grazing changes, mowing vegetation, pesticides, dumping or burning waste, drainage, changes to tree management, watercourse drainage, infilling of ponds, mineral extraction, construction, erection of permanent structures, vehicle usage and recreational activities.

2.4.4 In terms of monitoring, the Shropshire Wildlife Trust – Newport Canal SSSI Recovery Project is a project in combination with Telford & Wrekin Council, Natural England, The Shrewsbury & Newport Canals Trust and other bodies to ensure there is financial help available for restoration of the upper two sections of the canal SSSI through Water Environment Grants.

2.4.5 There are no Ramsar Sites, Special Protection Areas (SPAs) or Special Areas of Conservation (SACs) within the plan area, although the Midland Meres and Mosses Phase 2 Ramsar Site is around 1km from the boundary and could potentially be affected by development within the plan area.

2.4.6 There are also no National Nature Reserves although the Aqualate Mere (NNR/SSSI) is within 1km of the T&W Council boundary.

Locally Designated Sites

2.4.7 Local Wildlife Sites (LWS) are non-statutory conservation areas that are significant for the value of species and habitats that they contain. Local Geological Sites within the borough are protected for their significance in educational, research, historical, visual and landscape scientific value. Across Telford and Wrekin, there are a total of 74 LWS and Local Geological Sites that include a range of habitats such as ancient woodlands, lowland hay meadows, wetland flushes, rivers, streams and grasslands. These environmental assets are monitored by Natural England, Environment Agency, Forestry Commission, Shropshire and Telford and Wrekin Councils.

2.4.8 In the 2019 Telford & Wrekin Annual Monitoring Report, it was concluded that 60% of all LWS and Geological Sites within the borough are ‘appropriately managed’, which is much better than the national standard of 48% which was published by Defra[23]. The high percentage of sites being well managed is contributed to by a range of nature conservation and geological heritage being owned by Telford and Wrekin Council.

2.4.9 The Council have committed to improving and enhancing 200 Green Guarantee Sites which are of local significance and valued greenspaces throughout the community. As of the 2019 AMR, the council is investing into the improvements to the value of these sites.

2.4.10 Overall, there are various environmental assets across Telford and Wrekin (Table 2.2) that are to be protected and enhanced for various reasons including historical value, research, environmental significance, species and habitat importance and for recreational enjoyment. Figure 2.1 represents the various assets across Telford and Wrekin.

[23] Nature Conservation: Local Sites in Positive Conservation Management in England, 2008/09 to 2017/18 Published by Defra January 2019

Figure 2.1. Biodiversity Assets across Telford and Wrekin, 2020.

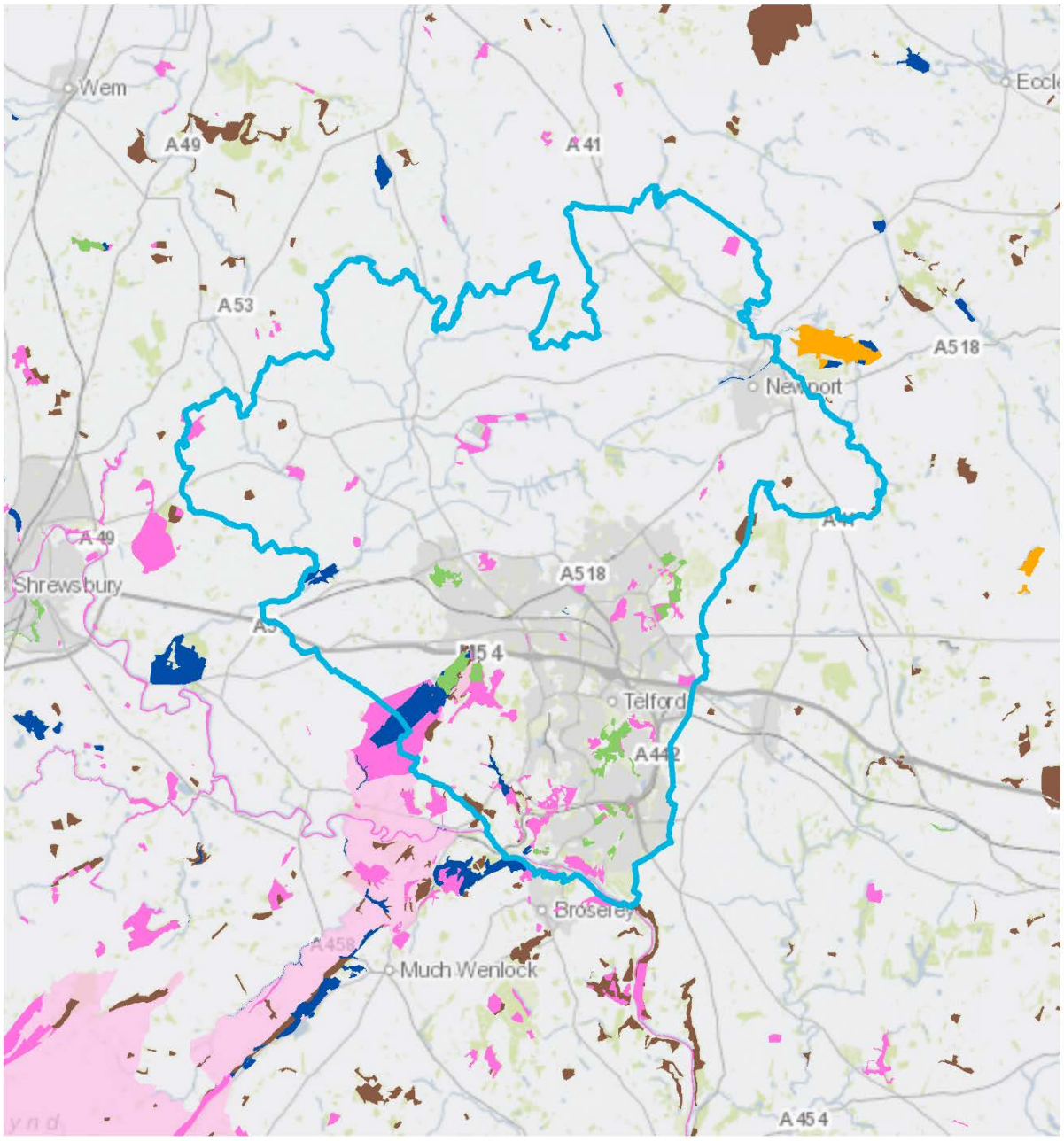


Table 2.2 Overall biodiversity designations within the Telford and Wrekin Borough[24].

Designations	Level	Number of designated sites
Site of Specific Scientific Interest (SSSI)	National	8 sites
Areas of Outstanding Natural Beauty (AONB) *though not explicitly designated for biodiversity purposes, there are inherent assets involved in this area.	National	1 site
Local Wildlife Site (LWS) & Local Geological Sites	Local	74 sites
Local Nature Reserve (LNR)	Local	6 sites
Ancient Woodlands	Local	52 sites

HRA baseline review

2.4.11 Given an initial assessment of the relevant European sites and the impact pathways present, and referring to the HRA work that was undertaken for the adopted Local Plan, the HRA intends to consider likely significant effects on the following European sites:

- Aqualate Mere, Cop Mere and Hencott Wood and Hencott Pool (Midlands Meres and Mosses Phase 2 Ramsar site) – Aqualate Mere is approximately 0.4 km east of the borough, east of Meretown and Forton. Cop Mere is approximately 7.7km north east of the borough, north east of Walk Mill and Offleyhay. Hencott wood and Hencott Pool is approximately 5.9 km west of the borough, north west of Shrewsbury.
- Bomere Wood, Bomere Pool and Shomere Pool and Berrington Pool (Midland Meres and Mosses Phase 1 Ramsar site) – Bomere Wood and Pool and Shomere Pool is approximately 8.2 km south west of the borough, south east of Shrewsbury. Berrington Pool is approximately 6.8 km south west of the borough, north west of Berrington Village.
- Mottey Meadows SAC – approximately 5.2 km east of the borough, west of the village of Wheaton Aston.
- Cannock Chase SAC – approximately 19 km east of the borough, south east of Stafford.
- West Midland Mosses SAC – Clarepool and Hampton Moss is approximately 20km north west of the borough. Wybunbury Moss is approximately 24km north of the borough. Chartley Moss is approximately 25.5km north east of the borough.
- Severn Estuary SAC/SPA/Ramsar – is approximately 95km south of the borough.

2.4.12 This does not mean it is considered that potential for likely significant effects on these sites necessarily exists, but simply that these are the sites that will be investigated. No potential pathways of impact have been identified linking to other European sites.

Trends and future baseline

2.4.13 Overall the majority of the SSSI's present 'favourable' or 'unfavourable – recovering' status. However, the Allscott Settling Ponds SSSI and Newport Canal SSSI are of concern as they are in 'unfavourable' condition. It is noted that investment in improvement activity is proposed for the Newport Canal SSSI to boost its performance and quality. There are several common operations that could likely damage the significance of these assets. These are cultivation, grazing changes, mowing vegetation, pesticides, dumping or burning waste, drainage, changes to tree management, watercourse drainage, infilling of ponds, mineral

[24] https://www.telford.gov.uk/downloads/file/6655/telford_and_wrekin_local_plan_2011-2031_adopted_january_2018

extraction, construction, erection of permanent structures, vehicle usage and recreational activities. Any of these could occur regardless of whether the Plan review is undertaken.

2.4.14 The Green Guarantee is a protection commitment made by the council to protect 200 green spaces from future development impacts. This could have positive effects for protecting the designation from threats of development. This should have effects on those sites going forward, potentially improving the current situation.

2.4.15 The existing Local Plan addresses protection, maintenance and possible enhancements to designated sites and habitats across the borough. This is a common theme, which would be likely to continue.

2.4.16 Additional development could come forward on an ad-hoc basis, including that which is not governed through local plans. Certain schemes such as major infrastructure may pose threats to the natural environment.

2.5 Key issues

2.5.1 The following key issues have been identified from the scoping exercise:

- There is a strong legislative and policy framework seeking to protect and enhance biodiversity. In particular there is a need to reverse the declines that have been experienced in biodiversity and to achieve 'net gain'.
- There is a body of evidence that demonstrates the link between access to biodiversity (particularly high quality and species diverse areas) and improved health and wellbeing.
- There are networks of wildlife habitats across the borough, with concentrations of protected sites within and to the west of the Telford urban area.

2.6 Scoping Decision

1.1.1 Considering the key issues discussed above it is proposed that the topic of biodiversity should be **SCOPED IN** to the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objectives	Assessment questions (will the option/ proposal help to...)
Avoid impacts on biodiversity, whilst mitigating and compensating any acceptable impacts, achieving net gains through enhancements, and creation of well-connected, functional habitats that are resilient to development, recreational and climate change pressures.	• Avoid impacts to key biodiversity assets that would be difficult to mitigate to an acceptable level? • Avoid severing ecological corridors, whilst seeking to enhance and connect existing corridors? • Improve the resilience of ecosystems to development, recreational and climate change pressures? • Demonstrate a net gain for biodiversity? • Improve the quality and ecological functionality of ecological features on and off site? • Signpost and link communities with nature, ensuring benefits from interaction with wildlife and public green spaces without generating harm to species and habitats?

3. Air Quality

3.1 Introduction

3.1.1 Air quality is a major environmental factor which can affect health and ecosystems. Several factors contribute to air pollution with a particular issue being with emissions relating to transport and subsequent pollutants.

3.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to these important factors.

- Air Quality Management Areas
- Areas at greater risk
- Pressures

3.2 Context review

International

3.2.1 The **Ambient Air Quality Directive (2008/50/EC)** is a legally binding document that sets targets and limits for concentrations of air pollutants. It strives to achieve cleaner air for Europe. It has been identified within the directive that fine particulate matter (PM2.5) is one of the worst air pollutants in terms of significant negative effects on human health and therefore should be treated and regulated differently to other pollutants such as oxides of nitrogen, ozone ,sulphur dioxide and others. Particulate matter is essentially a wide range of materials from a variety of sources both derived from human made and natural sources. In the UK, the largest human-made sector is stationary fuel combustion and transport.

National

3.2.2 The **Air Quality Standards Regulations 2010** transpose into UK law the Ambient Air Quality Directive (2008/50/EC) which sets legally binding limits for outdoor concentrations of major air pollutants which impact public health.

3.2.3 Key messages from the **National Planning Policy Framework**[25] (NPPF) include:

- Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas.
- Opportunities to improve air quality of mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.
- Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.

[25] MHCLG (2019) National Planning Policy Framework [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

- New and existing developments should be prevented from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of air pollution.

3.2.4 The government published the '**UK plan for tackling roadside nitrogen dioxide concentrations**' in July 2017.[26] This is the air quality plan for bringing nitrogen dioxide within statutory limits in the shortest possible time. The plan identifies that "*the link between improving air quality and reducing carbon emissions is particularly important*" and that consequently the UK government is determined to be at the forefront of vehicle innovation by making motoring cleaner.

3.2.5 Published in January 2018 by the UK Government, '**A Green Future: Our 25 Year Plan to Improve the Environment'**[27] sets out a number of goals and policies in order to help the natural world regain and retain good health. In this context, Goal 1 'Clean Air' and the policies contained within 'Chapter 4: Increasing resource efficiency and reducing pollution and waste' within the 25-year plan directly relate to the air quality SEA theme.

3.2.6 Within the **Environmental Bill 2020**[7] there is a clear commitment to set an ambitious, legally binding target for the pollutant with the most significant impact on human health; fine particulate matter.

3.2.7 **The UK 2070 Commission's Final Report (2020)**[28] on regional inequalities details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes delivering a connectivity revolution by creating a transformed public transport network between, within and beyond cities.

Regional

3.2.8 The **Shropshire Wildlife Trust Annual Report 2018 – 2019** states that landowners and the public along rivers and streams came together to reduce pollution through volunteer work and engagement.

Local

3.2.9 **The 2018 Air Quality Annual Status Report (ASR)** reviews air quality within Telford and Wrekin through diffusion tube monitoring. Air quality across the borough was generally in very good compliance with AQ Objectives and air pollution was measured as stable. The report identified that emissions are mostly produced from busy roads and that two areas within the Borough (Watling Street / Mill Bank) areas are of slight concern.

3.2.10 The **Local Air Quality Management (LAQM)** is a policy management guidance tool that ensures local authorities across England are carrying out their local air quality management duties. This forms part of the Environmental Act in which local authorities are to abide by to tackle poor air quality.

3.3 Focused literature review

Poor air quality contributes to health issues and death

3.3.1 Air pollution is a significant problem (particularly in cities) causing disruptions to people's health, well – being and the natural environment.

[26] DEFRA (2017) 'UK plan for tackling nitrogen dioxide concentrations' [online], available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/633269/air-quality-plan-overview.pdf
[27] HM GOV (2018) A Green Future: Our 25 Year Plan to Improve the Environment [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf
[28] UK 2070 Comission (2020) Make No Little Plans – Acting at Scale for a Fairer

3.3.2 The risk of adverse effects on air quality due to development is prevalent and a variety of air pollutants are harmful to human health and the environment *(DEFRA, 2020) (Mabahwi et. al. 2014) (Rebmann et. al. 2016).*

3.3.3 Long term exposure to poor air quality has a negative effect upon mortality and reduces life expectancy (Hoek et. al. 2002) (Public Health England, 2009).

3.3.4 Air pollution is often be associated with worsening and / or causing a range of health issues such as cancer, asthma, stroke, heart disease, dementia, obesity and diabetes (Royal College of Physicians, 2016. WHO, 2016).

Urban areas are more likely to suffer from poor air quality and its negative effects

3.3.5 Broadly speaking, more than 80% of people who reside in urban areas are exposed to air quality levels that exceed the WHO limits (WHO,2016).

3.3.6 Areas with high density urban with greater population causes greater risk of air pollution compared to less - developed areas and natural environments (Ling et. at. 2012).

3.3.7 Several studies conducted in the USA demonstrate that people who live in less polluted cities are more likely to live longer than those who live in polluted cities (Dockery et. al. 1993; Pope et. al. 1995).

Environmental factors can improve or worsen air quality

3.3.8 Other urban design mechanisms such as planting urban trees have demonstrated to remove quantities of pollutants to result in air quality improvements (Nowak et al. 2006).

3.3.9 Hartig et. al. (2014) states that there are both negative and positive impacts nature has on air quality.

- Trees and other vegetation have the ability to reduce levels of some pollutants such as PM2.5.
- However some trees and plants release pollens that aggravate allergies, having a negative effect on some people's health and wellbeing.

Travel behaviour can help to improve air quality

3.3.10 Much research has shown that walking, cycling and mass public transport systems are contributing to help tackle poor air quality and reduce carbon emissions.

3.3.11 An exemplar reviewed by Fischer et al. (2010) on Peterborough City Council LTP2 2006 show several references relating to health and encouraging active modes of transport such as walking and cycling[29]. The plan also demonstrated understating around 'Better Air Quality'.

3.4 Baseline review

Air quality management areas (AQMA)

3.4.1 AQMAs are locations which have been assessed and identified as experiencing particularly poor levels of air quality. Specific areas are established where air quality is monitored, with targeted actions taken to help improve upon poor levels of air quality and exposure to subsequent pollutants. There are no AQMAs within Telford and Wrekin, however, annual monitoring is undertaken at a range of locations to understand levels of air pollutants and potential issues. The closest AQMA is within Shropshire Council and is approximately 6.5km distance away from the Telford and Wrekin Council Boundary.

[29] Peterborough City Council. (2006). The Peterborough (Provisional Local Transport Plan 2006 – 2011). [online] available at: https://democracy.peterborough.gov.uk/Data/Council/20050720/Agenda/050720%20-%20Council%20Report%20-%20Local%20Transport%20Plan%20Council%20draft.pdf

3.4.2 In 2016, the Council were able to identify two areas within the Borough that may be of concern in terms of air quality levels. These areas are closely monitored and measures were introduced in 2017 such as smart traffic signalling to reduce NO^2 concentrations. In 2018, the council produced an ASR 2018 which raised potential concerns for areas that could be of concern. These two areas are Watling Street/ Mill Bank. There are plans to introduce air quality measures that should improve emissions.

3.4.3 In 2019, the Council carried out an Air Quality Annual Status Report (ASR)[30]. The review has shown that overall, air quality within the borough of Telford and Wrekin was shown to have very good compliance with the National Air Quality Objectives (NAQO) and European Directive limit and target values.

3.4.4 The ASR indicates that main sources of air pollution in Telford and Wrekin are emissions from busy roads. The M54 traverses the borough across the main central urban area, and the majority of the main roads within the borough are also focussed in this area, including the A41, the A518, the A5, A442, A4169, and the A4640. The ASR with data acquired in 2018 continues to show that the air quality throughout the borough is relatively stable as previous years monitoring has shown. The highest NO2 concentrations observed were again at the Watling Street/Regent Street junction and Mill Bank area although this did not result in exceedances of the NAQO.

3.4.5 The latest data for Telford Hollinswood is recorded hourly by Defra[31] for Nitric oxide (NO), Nitrogen dioxide (NO^2), and Nitrogen oxides as nitrogen dioxide ($NO_x as NO_2$). The measurements as of 20/08/2020 are:

Table 3.2. Latest data for Telford Hollinswood (Source: DEFRA, 2020).

Pollutant	Date	Time	Measurement	Unit
Nitric oxide (NO)	20/08/2020	09:00	2.245	µg/m³
Nitrogen Dioxide (NO_2)	20/08/2020	09:00	0.574	µg/m³
Nitrogen oxides as nitrogen dioxide ($NO_x as NO_2$)	20/08/2020	09:00	4.016	µg/m³

Areas at greater risk of air pollution

3.4.6 It was stated within the Telford and Wrekin Air Quality Status Report 2019, that air pollution can be closely associated with health impacts and that air pollution affects those that are most vulnerable in society such as children, elderly people and those with underlying heart and lung health conditions.

3.4.7 The UK National Air Quality Objectives outline desired air quality target values for key pollutants. The primary aim is to protect human health, vegetation and wider ecosystems.

3.4.8 Unfortunately, some communities and environments ('receptors') are more likely to suffer from the effects of poor air pollution. It is therefore useful to understand the implications of each pollutant and to identify those at risk of suffering adverse impacts.

3.4.9 Table 3.3 below lists the key air pollutants measured across the UK; with a short description of implications, vulnerable receptors and risk factors.

[30] https://www.telford.gov.uk/downloads/file/10373/annual_status_report_2019
[31] https://uk-air.defra.gov.uk/data/site-data?f_site_id=TDHD&view=last_hour

Table 3.3. Links between air quality and vulnerable receptors (Source: DEFRA, 2020).

Pollutant	Description	Implications	Vulnerable Receptors and risk factors
Nitrogen Dioxide (NO_2)	A respiratory irritant. Greenhouse gas.	Exacerbation of respiratory issues and could lead to increased infections. Contributes to climate change	People with pre-existing diseases such as allergies, asthma and other respiratory issues. Older-adults. Children. Lack of access to greenspace. Residents within AQMAs. Deprived communities. Heavy smokers.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particles in the atmosphere that are a wide range of chemical constituents.	Public health concerns relating to lungs. Elevated exposures to roadways can affect socially disadvantaged groups.	
Sulphur Dioxide (SO_2)	A corrosive, acidic gas which combines water vapour in the atmosphere.	Damage of the natural environment including vegetation, soils, building materials and watercourses.	People who depend on the agricultural industry. Concentrations of historic buildings in areas of poor air quality.
Ozone	A secondary pollutant following reactions between NO_2	Long term effects on human health.	Ozone is higher in **rural areas** and can result in summer smog's due to the hot, still and sunny weather.

3.4.10 Potentially vulnerable communities are those faced with poor air quality and a range of other risk factors. The evidence demonstrates that such people are more likely to suffer disproportionately in terms of health and wellbeing. Risk factors can include poor access to outdoor natural environments, increased exposure to roads and industrial activity, limited access to greenspace and living within highly urbanised areas.

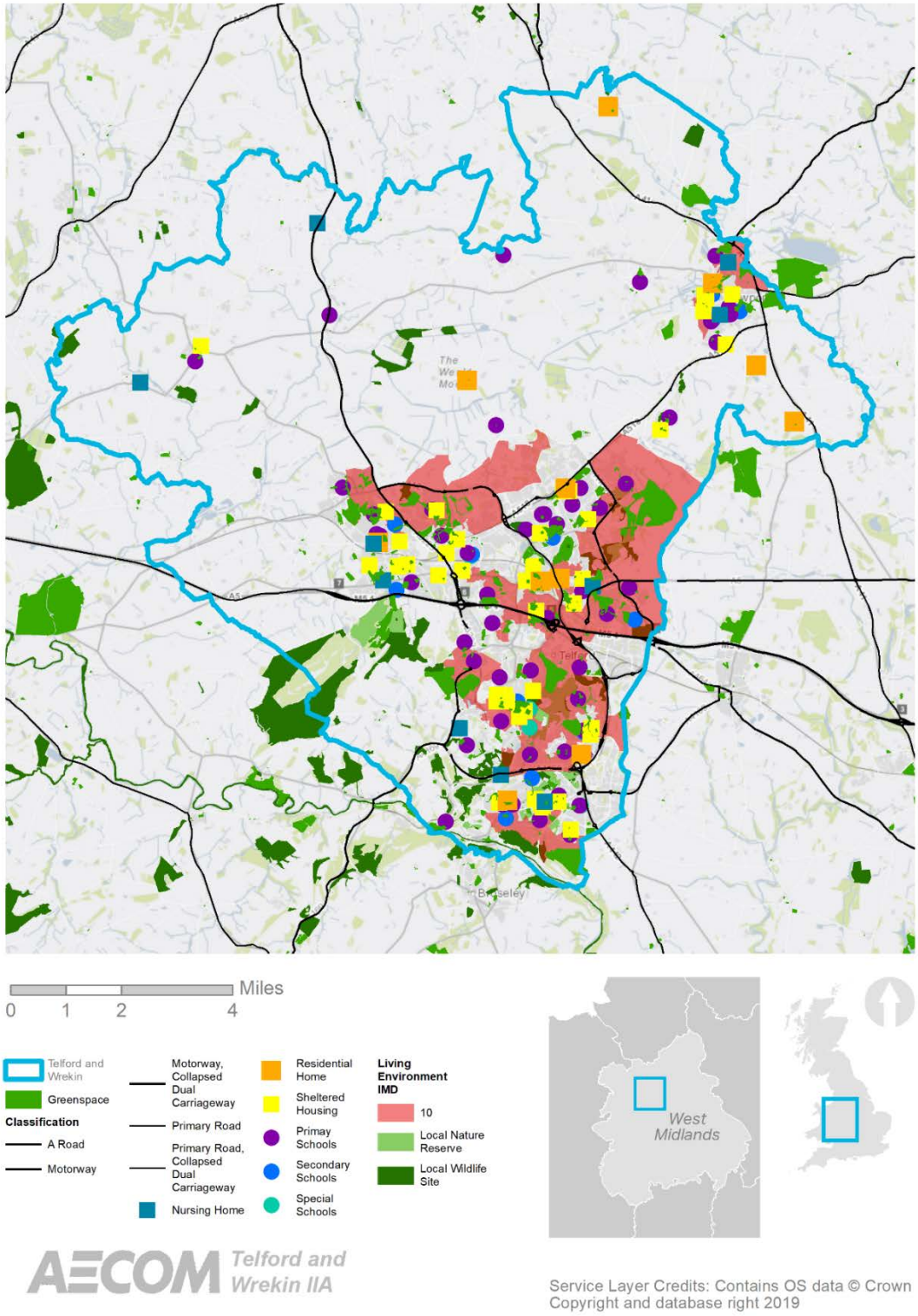
3.4.11 Exposure to heavily trafficked areas and domestic smoke can also be problematic, in particular for adults with heart problems (as they are considered vulnerable people with greater risk of symptoms)[32].

3.4.12 Figure 3.1, represents locations within Telford and Wrekin where areas of potential concern with regards to air quality corresponds with several other risk factors including those within a deprived living environment (IMD2019) and greater potential exposure to emissions from major roads.

3.4.13 Activities such as industrial processes, farming and agriculture could potentially contribute to air pollution given the scale of development and where development is cumulative. The borough has large manufacturing sector which generates trade and employment. Although the need for large-scale industrial activities have decreased over the years, manufacturing, distribution and transport are still the biggest contributors to the Borough's economy.

[32] https://www.gov.uk/government/publications/air-quality-explaining-air-pollution/air-quality-explaining-air-pollution-at-a-glance

Figure 3.1 Major roads, greenspace and living environment deprived areas across Telford and Wrekin.



Trends and future baseline

3.4.14 There are no AQMAs within the Council area. However areas along busy main roads where congestion occurs should be closely monitored and measured appropriately to protect and improve air quality.

3.4.15 The key source of air pollution within Telford and Wrekin comes from vehicle emissions. Traffic pollution measures such as smart traffic signalling, introducing signs which detract

motorists from leaving their engines on and the impacts of these measures should be monitored closely.

3.4.16 Other factors such as net gain in greenspace would have benefits for residents, though not necessarily for those living within highly urban and higher risk areas.

3.4.17 Extensive development, in particular for industrial purposes could pose threats to air quality if development accumulates.

3.4.18 Investment in public transport infrastructure, active transport initiatives and improvements to green infrastructure should help alleviate some current issues in relation to traffic and congestion. Decreasing reliance on major roads to reduce future road improvements would likely result in less effects of air quality pollution longer term.

3.4.19 It is unclear how the Covid19 pandemic will affect future travel behaviour, but clearly there may be implications that impact upon air quality; whether this be temporary or long lasting (for example social distancing could reduce bus and rail patronage, increase car usage, and / or lead to more people working from home on a more permanent basis).

3.5 Key issues

3.5.1 The following issues have been identified from this scoping exercise:

- There is a clear legislative and policy framework that demonstrates air quality is closely related to a number of adverse health impacts and recognises poor air quality as a key contributor to heart diseases and cancer.
- There are currently no AQMAs within the local plan area, however regular monitoring occurs in areas that are of some concern including the Watling Street/Mill Bank area.
- The main areas of concern for air quality within Telford and Wrekin are busy roads such as the M54, A41, A518, A5, A442, A4169, A4640. Areas within close distance to these networks may be at risk/ vulnerable to poorer air quality.
- Overall, air quality within the borough of Telford and Wrekin has been shown to have very good compliance with the National Air Quality Objectives (NAQO) and European Directive limit and target values.

3.6 Scoping Decision

3.6.1 Considering the key issues discussed above it is proposed that the topic of air quality should be **SCOPED IN** of the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Protect and improve local air quality through implementing measures to reduce air pollution caused by road traffic and other sources in the borough.	• Improve sustainable transport infrastructure, including walking and cycling routes, and public transport in order to promote healthy, active lifestyles and travel choice? • Protect and promote greenspaces and healthy environments in urban areas to alleviate air pollution. • Implement road traffic measures to reduce air pollution? • Facilitate a move towards low emission / zero emission vehicles?

4. Water Quality

4.1 Introduction

4.1.1 Water is perhaps the most important resource on the planet. People need water to survive, and it links and maintains all ecosystems. The sustainable management of water resources is therefore extremely important.

4.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following important factors.

- Water catchment areas
- Water resources
- Water quality

4.2 Context review

International

4.2.1 The **United Nations (UN)** highlighted the importance of water quality that a **sustainable development goal** was created to ensure clean accessible water is achieved across all developing and developed countries. The UN states that negative impacts of poor water quality include impacts to food security, livelihood choices and education.

4.2.2 The **Water Framework Directive**[33] (2000) requires a management plan to be prepared for water catchment areas to inform planning and help meet objectives and obligations in areas such as water efficiency and sustainable drainage.

National

4.2.3 Key messages from the National Planning Policy Framework[34] (NPPF) include:

- Development should, wherever possible, help to improve local environmental local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.
- Development should remediate, mitigate, despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

4.2.4 **The Environmental Bill 2020**[35] policy statement states that the new bill will help secure long – term, resilient water and wastewater services, making for a greener and more resilient country for the next generation within its 25-year environmental plan. Key elements to help reform the 25-year plan include:

- Extraction and trying to reform waterbodies to as close to their natural state.
- Ensures regulations protecting water quality will not become ‘frozen’ due to the loss of the European communities at 1972 section 2.
- The bill amends the land drainage act 1991, to enable valuation calculations to be provided for in secondary legalisation.

[33] Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.
[34] MHCLG (2019) National Planning Policy Framework [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf
[35] https://www.gov.uk/government/publications/environment-bill-2020/30-january-2020-environment-bill-2020-policy-statement

4.2.5 The **Water White Paper 2011**[36] sets out the Government's vision for a more resilient water sector. It states the measures that will be taken to tackle issues such as poorly performing ecosystems, and the combined impacts of climate change and population growth on stressed water resources.

4.2.6 The Government's **Water Strategy for England**[37] (2008) provides strategy for the water sector up until 2030, which aims to sustainably deliver secure water supplies and an improved and protected water environment. It sets out actions within the following areas:

- Water demand;
- Water supply;
- Water quality;
- Surface water drainage;
- River and coastal flooding;
- Greenhouse gas emissions;
- Charging for water; and
- Regulatory framework, competition and innovation.

4.2.7 **Water for life**[38] **(2011)** sets out the Government's vision for a more resilient water sector. It states the measures that will be taken to tackle issues such as poorly performing ecosystems, and the combined impacts of climate change and population growth on stressed water resources.

Regional

4.2.8 **Water Resource Management Plans** (WRMPs) provide a 25 year framework for the identification of long term planning issues such as resilience of water supplies. The delivery of and investment in strategic infrastructure is then managed and delivered through five yearly Asset Management Plans. Water supply and waste water treatment in Telford and Wrekin are the responsibility of Severn Trent Water in their capacity as statutory undertaker. The current Severn Trent WRMP has a plan period of 2019/20 – 2044/45[39]

Local

4.2.9 **The Telford and Wrekin Water Technical Paper** (2016) was prepared as justification for the policies in the adopted Local Plan and sets out a range of baseline issues for the Telford and Wrekin plan area.

4.2.10 Policy ER10 (Water conservation and efficiency) of the **adopted Local Plan (2018)** supports the implementation of design features that will "support recycling / re-use of water to help offset demand for potable water supplies". Policy ER11 (Sewerage systems and water quality) recognises that the "capacity and resilience of local sewerage infrastructure is critical to the sustainability of new development" and requires that new development is phased in such a way as to ensure "necessary capacity improvements" can be implemented commensurately to the rate of growth.

[36] Defra (2011) Water for life (The Water White Paper) [online] available at: http://www.official-documents.gov.uk/document/cm82/8230/8230.pdf
[37] Defra (2011) Future Water: the Government's Water Strategy for England [online] available at: https://www.gov.uk/government/publications/future-water-the-government-s-water-strategy-for-england
[38] Defra (2011) Water for life [online] available at: http://www.official-documents.gov.uk/document/cm82/8230/8230.pdf
[39] https://www.severntrent.com/content/dam/stw-plc/our-plans/severn-trent-water-resource-management-plan.pdf

4.3 Focused literature review

Water contamination can have negative effects on health

4.3.1 Elevated levels of anxiety, stress and depression can occur among city residents due to health impacts cause by contaminated waters. Further mental health effects were perceived to have ripple effects into other behavioural health issues such as substance abuse *(Cuthbertson et. al. 2016).*

4.3.2 Water issues that affected the community were seen to have greater effects among those who were of low socioeconomic status *(Cuthbertson et. al. 2016).*

High quality water environments are a positive influence on health and wellbeing

4.3.3 In respects to water quality and water bodies, living close to natural and coastal environments known as 'green spaces' and 'blue spaces' respectively have positive effects and is beneficial for human health *(Rook, 2012).*

4.3.4 Access to urban green and blue infrastructure has been shown to increase physical activity, improve mental health, and improve community safety (*White, M.P. et al, 2016*)

White, M.P.; Elliott, L.R.; Taylor, T.; Wheeler, B.W.; Spencer, A.; Bone, A.; Depledge, M.H.; Fleming, L.E.Recreational physical activity in natural environments and implications for health: A population basedcross-sectional study in England. Prev. Med. 2016,91, 383–388.

4.3.5 Epidemiological studies have shown that relatively speaking, people living in coastal environments with access to water are likelier to have better health outcomes (Grellier, J. et al, 2017)

Grellier J, White MP, Albin M, Bell S, Elliott LR, Gascón M, et al. BlueHealth: a study programme protocol for mapping and quantifying the potential benefits to public health and well-being from Europe's blue spaces. BMJ Open (2017) 7(6):e016188. 10.1136/bmjopen-2017-016188

4.3.6 Green and blue infrastructure have been shown to have particular benefits for ageing populations (De Keijzer, et al, 2019)

De Keijzer, C.; Tonne, C.; Sabia, S.; Basagaña, X.; Valentín, A.; Singh-Manoux, A.; Antó, J.M.; Alonso, J.;Nieuwenhuijsen, M.J.; Sunyer, J.; et al. Green and blue spaces and physical functioning in older adults:Longitudinal analyses of the Whitehall II study. Environ. Int. 2019,122, 346–356

4.4 Baseline review

Water catchment areas

4.4.1 Telford and Wrekin falls entirely within the Severn River Basin District (RBD), though is located at the far north east of the RBD around 4 miles from the boundary with the Humber River Basin District. The Severn RBD extends westwards to Snowdonia, covering all the Welsh border area south of Snowdonia to Cardiff and the Bristol Channel. Its south easternmost point is near Frome in Wiltshire, from where it extends northwards past Swindon and Cheltenham, to an eastern extent east of Coventry and then skirting round the south and west of Birmingham to Telford and Wrekin at its north eastern extent

4.4.2 At a more granular level, the Local Plan area falls within three smaller Management Catchment Areas (MCA), two related to surface water and one to ground water:

- Severn Middle Shropshire (surface water)
- Severn Middle Worcestershire (surface water)
- Severn England GW (ground water)

4.4.3 The Severn Middle Shropshire catchment covers the majority of the Local Plan area, including Newport and central and northern Telford. The catchment includes the River Severn and its tributaries including the Tern and Perry. Other than Telford and a handful of small market towns the catchment is largely rural in character.

4.4.4 The Severn Middle Worcestershire catchment extends southwards from central Telford. It is also predominantly rural in character, though unlike Severn Middle Shropshire it contains significant urban areas beyond parts of Telford including parts of Wolverhampton, Dudley, Kidderminster and Worcester.

4.4.5 The Severn England GW catchment is of a substantial scale, extending from Market Drayton in the north to Shepton Mallett in the south, and from as far west as central Powys to as far east as Northampton. A very diverse range of land uses and character areas fall within this ground water catchment area.

Water Quality

4.4.6 The quality of water is measured for a range of waterbodies including rivers, surface water, groundwater and bathing water (where applicable). Quality is generally classified according to the characteristics of the waterbodies using chemical status and ecological status as proxies for quality. Water quality in relation to the three Catchment Management Areas (MCAs) that Telford and Wrekin fall within is presented below.

Severn Middle Shropshire CMA

4.4.7 The Severn Middle Shropshire CMA contains a total of 41 water bodies. This total comprises 7 lakes and 34 rivers, canals or surface water transfers.

4.4.8 A total of 40 of these waterbodies achieved 'good' status in 2016. The principal reasons for not achieving good status (RNAGS) in the one remaining water body are attributed to effects from agriculture and rural land management. Figure 4.1, below, presents a summary of the quality of these water bodies in terms of their ecological or chemical status as at 2016.

Figure 4.1 Ecological and chemical status of surface water bodies in Severn Middle Shropshire CMA (2016)[40]

	Ecological status or potential					Chemical status	
Number of water bodies	Bad	Poor	Moderate	Good	High	Fail	Good
41	2	20	18	1	0	1	40

Severn Middle Worcestershire CMA

4.4.9 The Severn Middle Worcestershire CMA contains a total of 51 water bodies, comprising 7 lakes and 44 rivers, canals or surface water transfers.

4.4.10 A total of 48 of these waterbodies achieved 'good' status in 2016. The principal RNAGS in the three other water bodies are attributed to effects from agriculture and rural land management and from water industry activities. Specifically, the water industry was responsible for issues related to pollution from waste water and to changes to the natural flow and levels of water. Figure 4.2, below, presents a summary of the quality of these water bodies, again from 2016:

Figure 4.2 Ecological and chemical status of surface water bodies in the Severn Middle Worcestershire CMA (2016)[41]

	Ecological status or potential					Chemical status	
Number of water bodies	Bad	Poor	Moderate	Good	High	Fail	Good
51	2	16	32	1	0	3	48

[40] https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3074/Summary
[41] https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3075/Summary

Severn England Groundwater CMA

4.4.11 The Severn England Groundwater CMA contains a total of 33 groundwater bodies.

4.4.12 A total of 21 of these achieved 'good' status in 2016. The principle RNAGS for the remaining 12 waterbodies were changes to the natural flow and levels of the water, associated with agricultural and water industry acitivites, as well as pollution from rural areas associated with agriculture and rural land management. Figure 4.3 below presents a summary:

Figure 4.3 Quantitative and chemical status of groundwater bodies in the Severn England Groundwater CMA (2016)

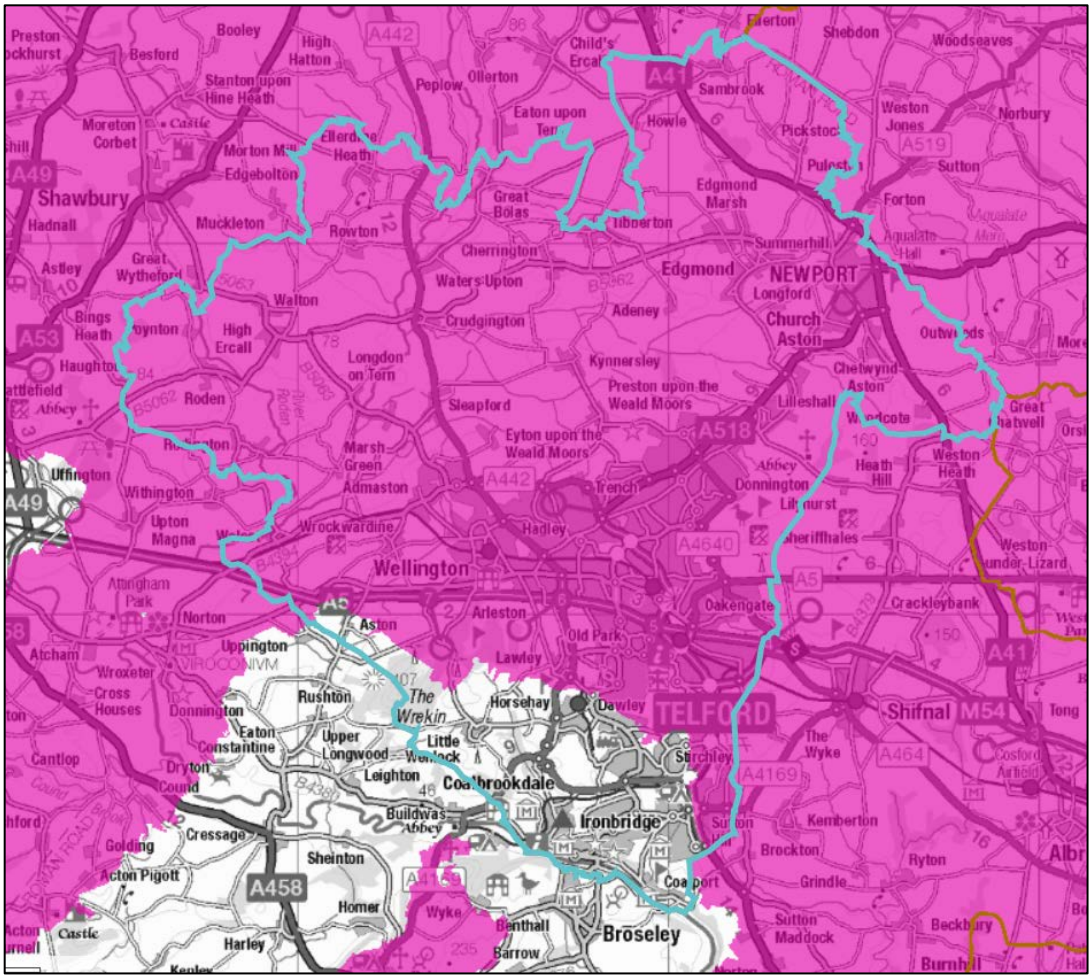
	Quantitative status		Chemical status	
Number of water bodies	Poor	Good	Poor	Good
33	9	24	12	21

Nitrate vulnerability

4.4.13 As can be seen on Figure 4.4, a large proportion of the Local Plan area is within a Nitrate Vulnerable Zone (NVZ). NVZs are areas designated as being at risk from agricultural nitrate pollution (in particular), in accordance with the Nitrate Pollution Prevention Regulations (2015).

4.4.14 Activities which alter the management of agricultural land or lead to a change of use can therefore have implications in terms of the amount of nitrates which enter the region's watercourses.

Figure 4.4 Nitrate Vulnerable Zones within and around Telford and Wrekin



Water resources

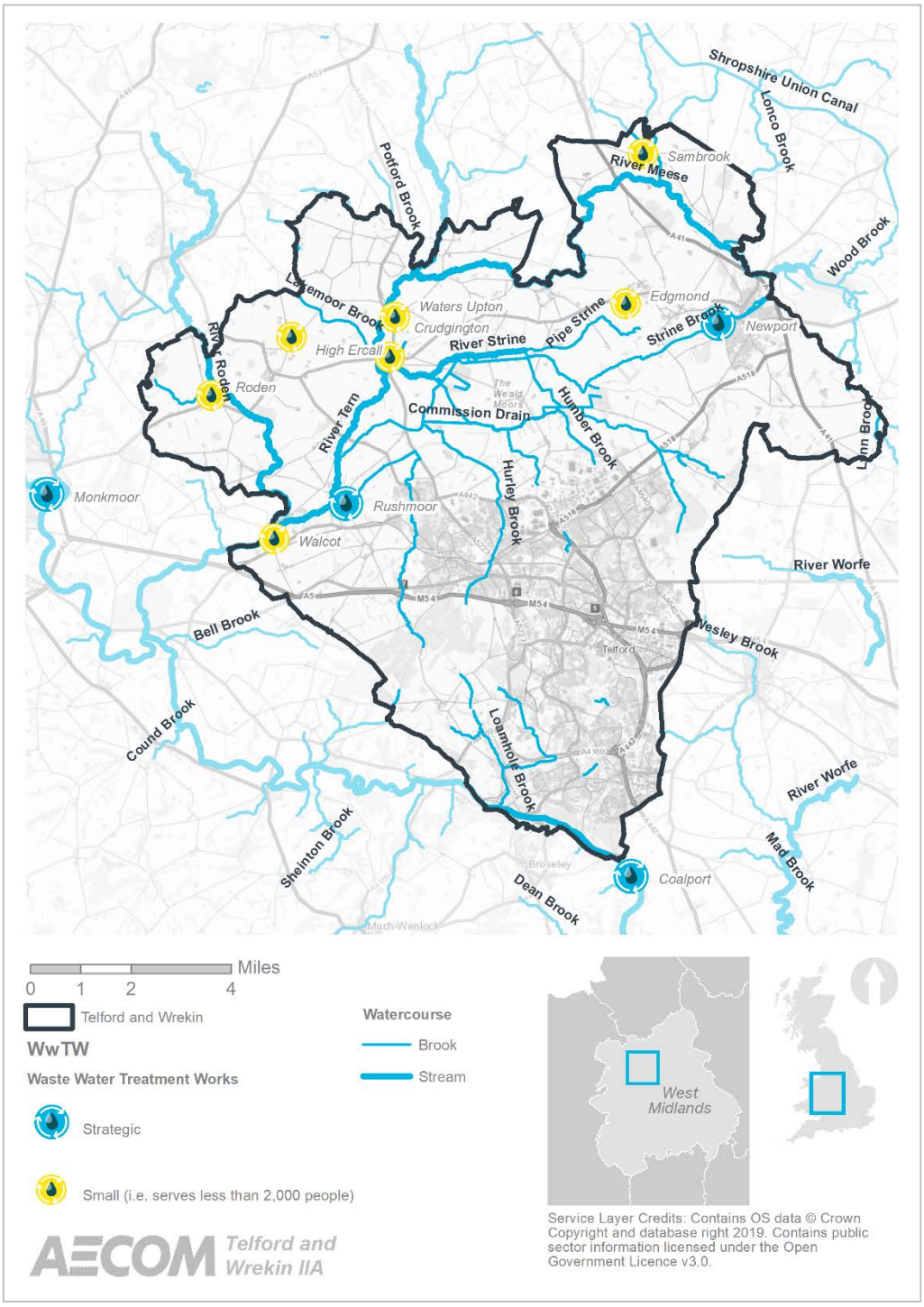
4.4.15 The Local Plan area has a large number of surface water bodies and watercourses, which flow towards the River Severn. The River Mease and the River Strine are the principal rivers and are mapped, along with the borough's other key watercourses, in Figure 4.5, overleaf.

4.4.16 Both potable water supply and wastewater treatment in Telford and Wrekin are the responsibility of Severn Trent Water as the statutory undertaker (as per the Water Industry Act 1991).

4.4.17 The borough is covered by two Water Resource Zones (WRZ) which are the geographical areas for drawing ground water supplies. The majority of the borough, including Telford itself, is covered by the Shelton WRZ whilst a portion of the rural area falls within the Wem and Whitchurch WRZ.

4.4.18 The key issues driving investment in water supply infrastructure are sustainable management of ground water, addressing issues of low river flows and improving the resilience of local water supplies.

Figure 4.5 Key resources in Telford and Wrekin



4.4.19 Wastewater treatment is managed through nine wastewater treatment works (WwTW) within the borough itself and two further sites in neighbouring Shropshire, namely Coalport WwTW to the south of Telford and Monkmoor WwTW to the west.[42]

4.4.20 The Severn Trent 2014 WRMP proposed bringing an alternative source of supply for Telford onstream during the WRMP period as the previous source of supply was considered to be "environmentally unsustainable". The proposed alternative source is the expansion of output from the existing borehole at Uckington (west of Telford) to generate the full licensed quantity of 10Ml/day on average). The WRMP forecasts that this upgrade will take place by the end of 2020 and should therefore be in place by the start of the new Local Plan period.

4.4.21 The Severn Trent 2019 WRMP does not make any specific proposals within the borough, though the wider Shelton WRZ as a whole is targeted for additional headroom generation to accommodate future development within the WRZ. Primarily, this additional headroom is proposed to be found through leakage reduction, with Shelton targeted for a near 40% leakage reduction over the 25 year plan period, reducing from 24 Ml/d currently to 14Ml/day by 2044/45.

Trends and future baseline

4.4.22 Water availability across the region and the UK has the potential to be affected by population growth and by increased risks of drought as a result of climate change.

4.4.23 Although Telford and Wrekin specifically, and the Severn Trent supply area more broadly, are not generally considered to be water-stressed, poorly planned development could potentially lead to unsustainable pressure on water resources through intensifying demand without providing additional supply in a coordinated, timely manner.

4.4.24 Growth within the region in the longer term is likely to add pressure on existing water resources by placing more demand on infrastructure. However, Severn Trent appear to have improved the resilience and sustainability of water supply to the Telford and Wrekin area in the medium term through actions proposed in the 2014 WRMP and implemented by the start of the 2019 WRMP.

4.4.25 Future greenfield development could have potential for effects upon surface water nitrates on the basis that much of the borough, including at the northern and eastern fringe of Telford, are within NVZs.

4.5 Key issues

4.5.1 The following key issues emerge from the context and baseline review:

- The entire borough falls within the Severn River Basin and is provided by both potable and wastewater services by Severn Trent.
- The quality of watercourses across the Local Plan area is generally good in terms of chemical status. In terms of ecological quality, the sites are mostly a mix of poor quality and moderate quality.
- The Local Plan area does not appear to be water stressed and Severn Trent have recently taken action to ensure the ongoing sustainability of supply to Telford by increasing output at the Uckington borehole.
- No issues emerge in relation to headroom capacity at wastewater treatment works serving the borough. However, future development needs to be planned for proactively.

[42] https://www.telford.gov.uk/downloads/file/4386/b6b_technical_paper_-_water

4.6 Scoping Decision

4.6.1 Considering the key issues discussed above it is proposed that the topic of water resources should be **SCOPED IN** to the Integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objectives	Assessment questions (will the option/ proposal help to...)
Promote sustainable forms of development which minimise pressure on water resources, whilst maintaining and enhancing the quality of the Borough's rivers, lakes and aquifers.	• Maintain areas with good water quality and make improvements where necessary? • Promote the role of water resources for their recreational and economic benefits without compromising environmental quality? • Promote the integration of blue infrastructure into new developments? • Ensure the timely phasing of wastewater and drainage infrastructure improvements to support new development?

5. Soil and Land

5.1 Introduction

5.1.1 Soil resources are vital to ensure both the production of food is met and global ecosystems function effectively.

5.1.2 The efficient use of land is a key issue given the finite amounts of greenfield land and natural resources that are coming under pressure from development.

5.1.3 This section provides a strategic review of the policy context, literature, and baseline position in relation to these important factors.

- Soil / agricultural land
- Land Use
- Minerals

5.2 Context Review

International

5.2.1 The **EU Common Agricultural Policy (CAP)** was launched in 1962 and is a partnership between agriculture and society between Europe and its farmers. The aim of the policy is to support farmers to provide a stable supply of affordable foods.

National

5.2.2 Key messages from the National Planning Policy Framework[43] (NPPF) include that planning policies should:

- Protect and enhance valued landscapes, sites of biodiversity or geological value and soils.
- Recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.
- Prevent new or existing development from being 'adversely affected' by the presence of 'unacceptable levels' of soil pollution or land instability and be willing to remediate and mitigate 'despoiled, degraded, derelict, contaminated and unstable land, where appropriate'.
- Promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions.
- Set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously developed or 'brownfield' land.
- Give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs', and 'promote and support the development of under-utilised land and buildings.
- Where significant development of agricultural land is necessary, direct growth to areas of poorer quality and away from land of higher quality.

[43] MHCLG (2019) National Planning Policy Framework [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

5.2.3 Since July 2017 the **Government's Planning Practice Guidance (PPG)** requires Local Planning Authorities to publish a Brownfield Land Register, and review it at least once a year, in order to identify all previously developed sites with potential for delivering new development.

5.2.4 This is to help achieve maximum planning value and efficiency from available land, whilst avoiding unnecessary land take at greenfield sites.[44] Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality.[45]

5.2.5 The **Government's 25 Year Environment Plan** was published in 2018 and presents the 'goals for improving the environment within a generation and leaving it in a better state than we found it".[46] The implementation of this plan aims to achieve clean air, clean and plentiful water, reduced risk from environmental hazards, and managed exposure to chemicals. Specific polices and actions relating to environmental quality include:

- Improving soil health and restoring and protecting our peatlands;
- Reducing pollution; and
- Maximising resource efficiency and minimising environmental impacts at end of life.

5.2.6 **Safeguarding our Soils: A strategy for England**[47] sets out a vision for soil use in England which includes better protection for agricultural soils, protecting stores of soil carbon, improving the resilience of soils to climate change and preventing soil pollution. The essential message in relation to development is that pressure on soils is likely to increase in line with development pressure and the planning system should seek to mitigate this.

Regional

5.2.7 The 2018 Spring Statement from the Chancellor of the Exchequer included a £350m package of government funding for the West Midlands Combined Authority, of which £100m was to be specifically targeted at "*buying and cleaning up*" priority brownfield sites in the region to help unlock land supply at previously developed sites.

Local

5.2.8 Policies SP1 (Spatial strategy), SP3 (Rural area), EC2 (Employment in the urban area) and EC3 (Employment n the rural area) of the **adopted Local Plan** (2018) seek to direct new housing and employment growth towards previously developed land (PDL) where possible.

5.2.9 As a Unitary Authority, minerals planning in Telford and Wrekin is also the responsibility of the Council as there is no upper-tier authority. Therefore, the key minerals planning policies for Telford and Wrekin are Policies **ER2** – **ER6** of adopted local plan.

5.3 Focused literature review

Local soil resources are valuable to ensure a supply of nutritious food

5.3.1 Food security is essential to human health, and this is heavily reliant upon sufficient soil resources. Though many food sources are imported, a strong domestic agricultural sector is important to ensure self-sufficiency and contributes to the economy. This has direct benefits on the wellbeing of those communities that work in these sectors.

[44] MHCLG (2017) Guidance: Brownfield Land Registers [online] available at: https://www.gov.uk/guidance/brownfield-land-registers
[45] Department for Communities and Local Government (2012) National Planning Practice Guidance [online] available at: http://planningguidance.communities.gov.uk/
[46] DEFRA (2018) 25 Year Environment Plan [online] available at: https://www.gov.uk/government/publications/25-year-environment-plan
[47] DEFRA (2009) Safeguarding our Soils: A strategy for England [online] available at: https://www.gov.uk/government/publications/safeguarding-our-soils-a-strategy-for-england

5.3.2 Not only does self-sufficiency support jobs, it helps to reduce impacts due to transport of goods, and there is evidence that locally sourced, fresh, seasonal food is more nutritious and promotes better health (given that the food is picked when it is ripe, the time from being picked to eaten is often shorter, and processing measures are usually reduced). (Wunderlich S.M. et al. 2009) (Martinez, S, et al. 2010) (Kaume.L. et al. 2012).

5.3.3 Soil health is key to the sustainability of our food system, and use of pesticides, herbicides and fertilizers are damaging to the health of our soil, while also posing potential human health risks. Transitioning to well-managed extensive farming systems, can help to mitigate environmental and population health impacts. These include but are not limited to: a reduction in NH3 emissions to reduce particulate matter (which is a risk to human health) and a reduced need for antibiotic use in livestock production due to higher animal welfare standards (which reduces the phenomenon of antibacterial resistance that has occurred in both animals and humans). (Bash. A & Donnelly. A, 2019)

There are amenity benefits offered by agricultural activities in communities

5.3.4 Benefits to health may be gained by introducing farming into local and urban areas. These include an increase in well-being, physical and mental health gained from access to green spaces (Twohig-Bennett and Jones, 2018; South et al, 2018).

5.3.5 Within the UN sustainability development goals, goal three states 'to ensure healthy lives and promote well-being for all' this is discussed in 'Health, Environment and Climate Change' regarding reducing the number of deaths from hazardous soils and contaminates. Further suggesting that soil does have an impact on our health and wellbeing (WHO, 2019).

There is evidence that mining activities can be detrimental to the health of workers and nearby communities.

5.3.6 Minerals development can increase the levels of dust particles (particulate matter) and release gases from transportation of minerals and operation of on-site machinery.

5.3.7 There is consistent evidence of the association of coal mining with a wide spectrum of diseases in populations resident or in proximity of the mining activities (Cortes-Ramirez, J, 2018).

5.4 Baseline review

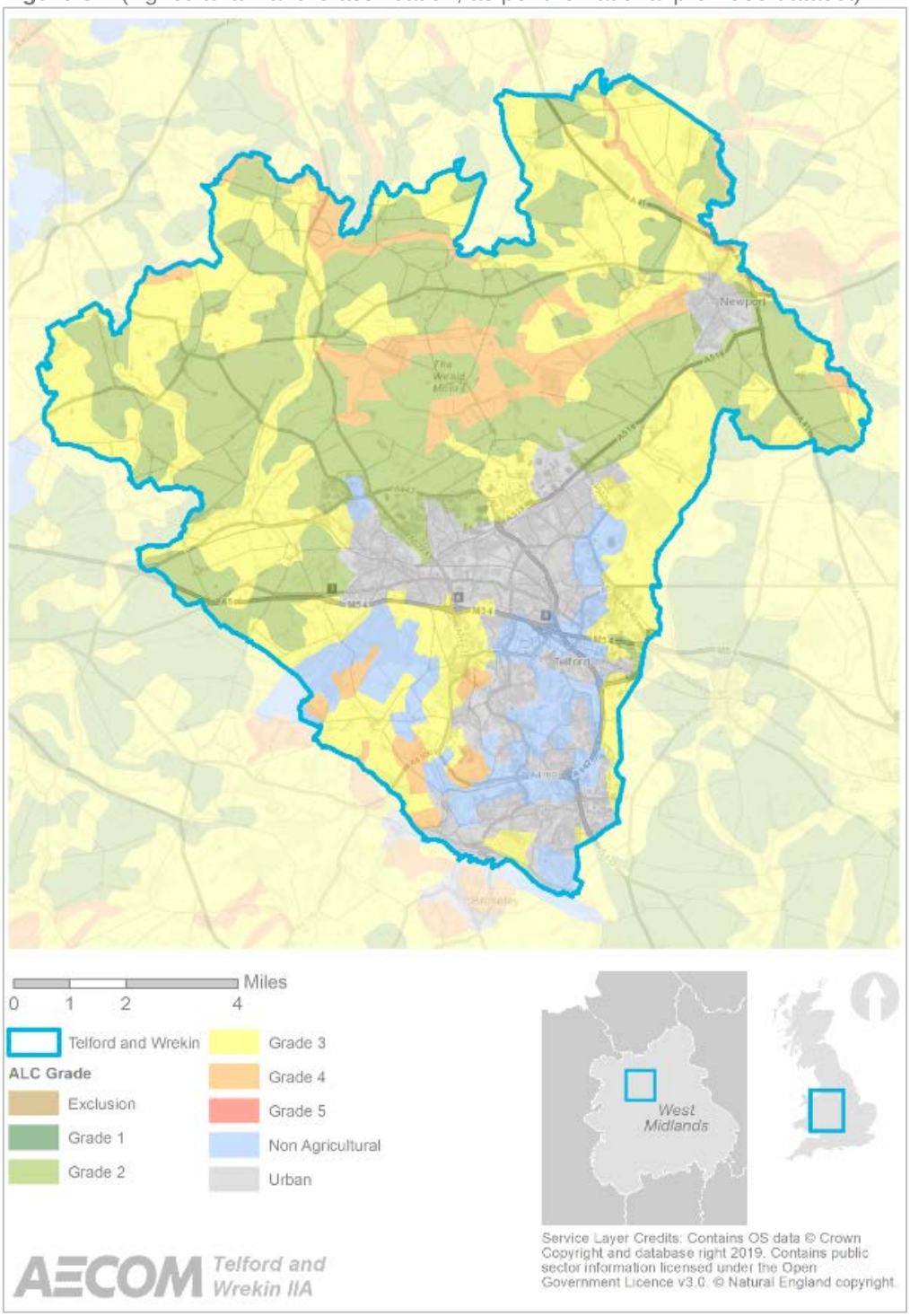
Soil resources / agricultural land

5.4.1 The Agricultural Land Classification (ALC) classifies land into six grades (plus 'non-agricultural' and 'urban'), where Grades 1 to 3a are recognised as being the 'best and most versatile' (BMV) land and Grades 3b to 5 are of poorer quality. The higher quality soils are important as they support a wider range of crops and produce better yields.

5.4.2 The subdivision of Grade 3 into 3a and 3b has not been undertaken on a national scale, including within much of Telford. In line with the precautionary principle, Grade 3 land is therefore presumed to be best and most versatile unless evidence can be provided to demonstrate it is 3b, not 3a.

5.4.3 A substantial proportion of the south of the plan area is urbanised or in non-agricultural use, reflecting the near contiguous urban area of Telford and its neighbouring settlements, such as Madeley to the south and Wellington to the north. A much smaller area of urban land use is evident at the borough's next largest settlement of Newport, on the eastern boundary of the plan area. The majority of the remainder of the plan area is underlain by Grade 2 and Grade 3 agricultural land, though linear ribbons of poorer quality land are evident at the Weald Moors in the centre and north of the borough. It is notable that the national dataset indicates that much of the land immediately north of the Telford urban area is underlain by Grade 2 land, i.e. high quality BMV land. This is illustrated in Figure 5.2 below:

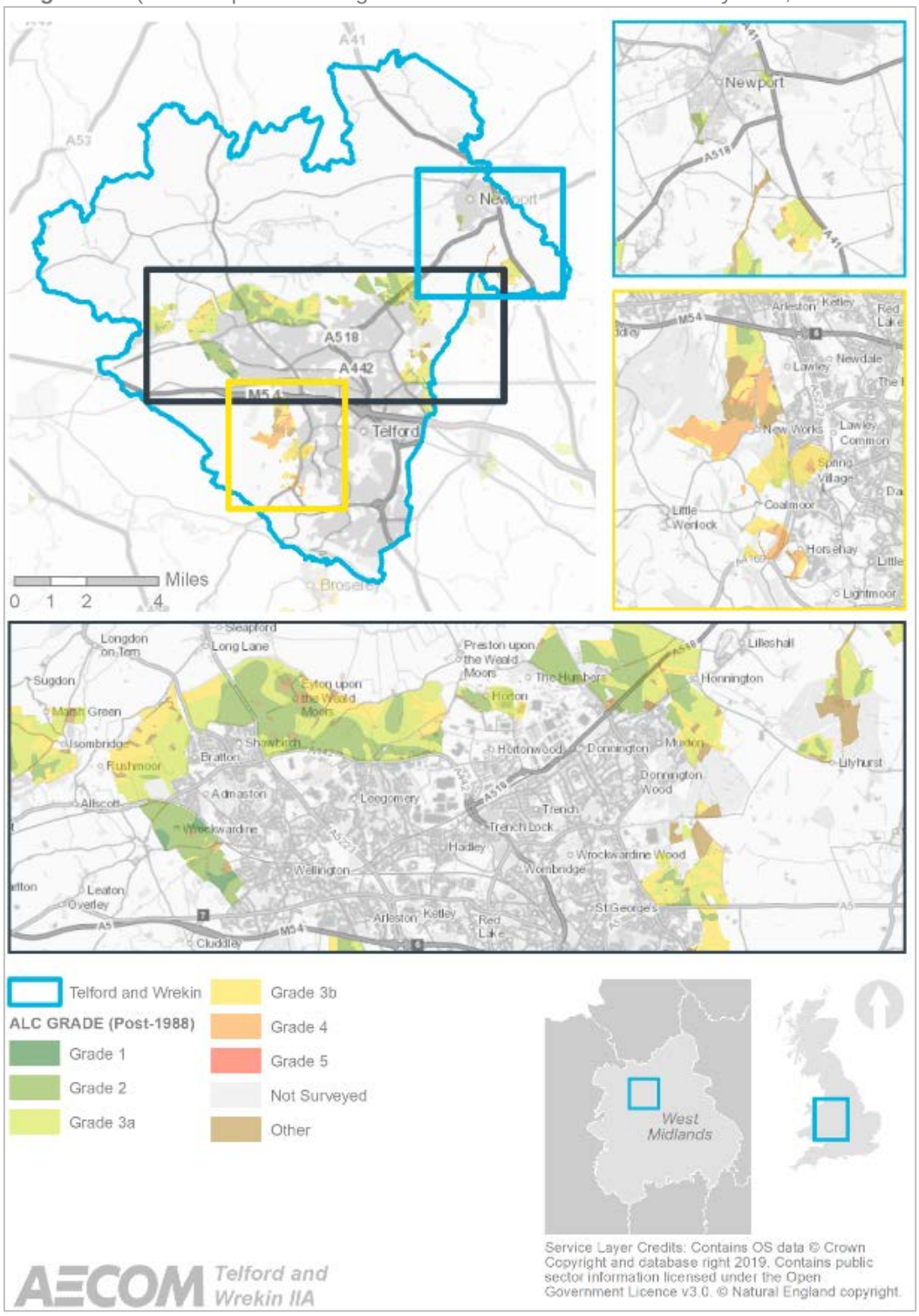
Figure 5.2 (Agricultural Land Classification, as per the national pre-1988 dataset)[48]



[48] The national dataset on agricultural land classification dates from pre-1988. Therefore, whilst it is a useful indication of agricultural land quality data is indicative-only and does not capture post-1988 development.

5.4.4 In addition to the nationally available dataset, there is evidence of more recent ad hoc survey work having been undertaken around much of the fringe of Telford's urban area, providing a more granular understanding of land quality around Telford. Where available, this detailed data illustrates that within the broad areas of Grade 2 to the north of the urban area are ribbons of Grade 3a and some 3b, whilst land to the north west of Telford - i.e. west of Wellington - appears to be of notably high quality, consisting mostly of Grade 2 and Grade 1 land. Land to the south west of the Telford urban area, west of Lawley, appears to be of notably poorer quality, with detailed survey data identifying that much of the area is Grade 3b or Grade 4, with isolated areas of Grade 5 and 'other' land use evident. See Figure 5.3 below.

Figure 5.3 (detailed post-1988 Agricultural Land Classification survey data, where available)



Land use

5.4.5 The most recently available update to the Telford and Wrekin Brownfield Land Register (BLR) was published in December 2018[49]. It is important to note that since this date, a number of sites on the BLR have been delivered or received permission. Therefore, the data provided in this scoping report represents a snapshot in time and an updated register is being prepared at the time of writing (though is not yet available). Nevertheless, this data provides a useful indication of the previously development land supply in Telford and Wrekin.

5.4.6 The 2018 BLR identifies 41 previously developed sites in the borough with a total minimum net capacity of 3,199 new dwellings.

5.4.7 Of this total, there is capacity for 1,855 dwellings on previously developed sites which **did not** have planning permission as at the date the register was published. Capacity for 1,344 dwellings is identified on sites already with full or outline permission, or where permission was pending at the date of publication.

5.4.8 It is notable that of the total number of sites identified on the BLR, 14 are owned by a public authority, with a total capacity of 1,779 dwellings. This means that over half of the brownfield sites in the borough are in public ownership and could therefore present opportunities to bring forward development. The adopted Local Plan reflects this in the supporting text of Policy SP1 (Spatial Strategy), noting that "*Telford still contains some of the highest amounts of land in public ownership in England*".

5.4.9 Recent rates of housing delivery disaggregated by greenfield and brownfield land are presented in Table 5.1 below:

Table 5.1 Housing delivery in Telford disaggregated by land type (2014/15 – 2018/19)[50]

Land type		2014/15	2015/16	2016/17	2017/18	2018/19
Greenfield	No.	588	562	564	629	943
	% of total	55	45	49	59	70
Brownfield	No.	486	693	582	438	402
	% of total	45	55	51	41	30

5.4.10 Table 5.1 shows that between 2014-2019, Telford and Wrekin has delivered an average of 44% of new dwellings on brownfield sites. This equates to a net total of 2,601 new dwellings delivered on previously developed land in five years. However, it is notable that the proportion of completions on brownfield sites has fallen consistently in each of the last four years.

Minerals

5.4.11 The borough is underlain by extensive minerals deposits, many of which fall within Minerals Safeguarding Areas (MSAs). MSAs abut much of the settlement boundary of Telford and completely encircle Newport in the north east of the borough.

5.4.12 Widespread deposits of sand and gravel are evident beneath the rural areas at the north of the borough and around Newport, while smaller deposits of crushed rock, coal and fireclay underlie the area to the west of Telford, in several instances directly abutting the Telford

[49] https://www.telford.gov.uk/info/20456/local_registers/3270/brownfield_register
[50] https://www.telford.gov.uk/downloads/file/14748/annual_monitoring_report_2019

built-up area boundary. Localised deposits of brick clay and coal are evident to the north east of Telford.

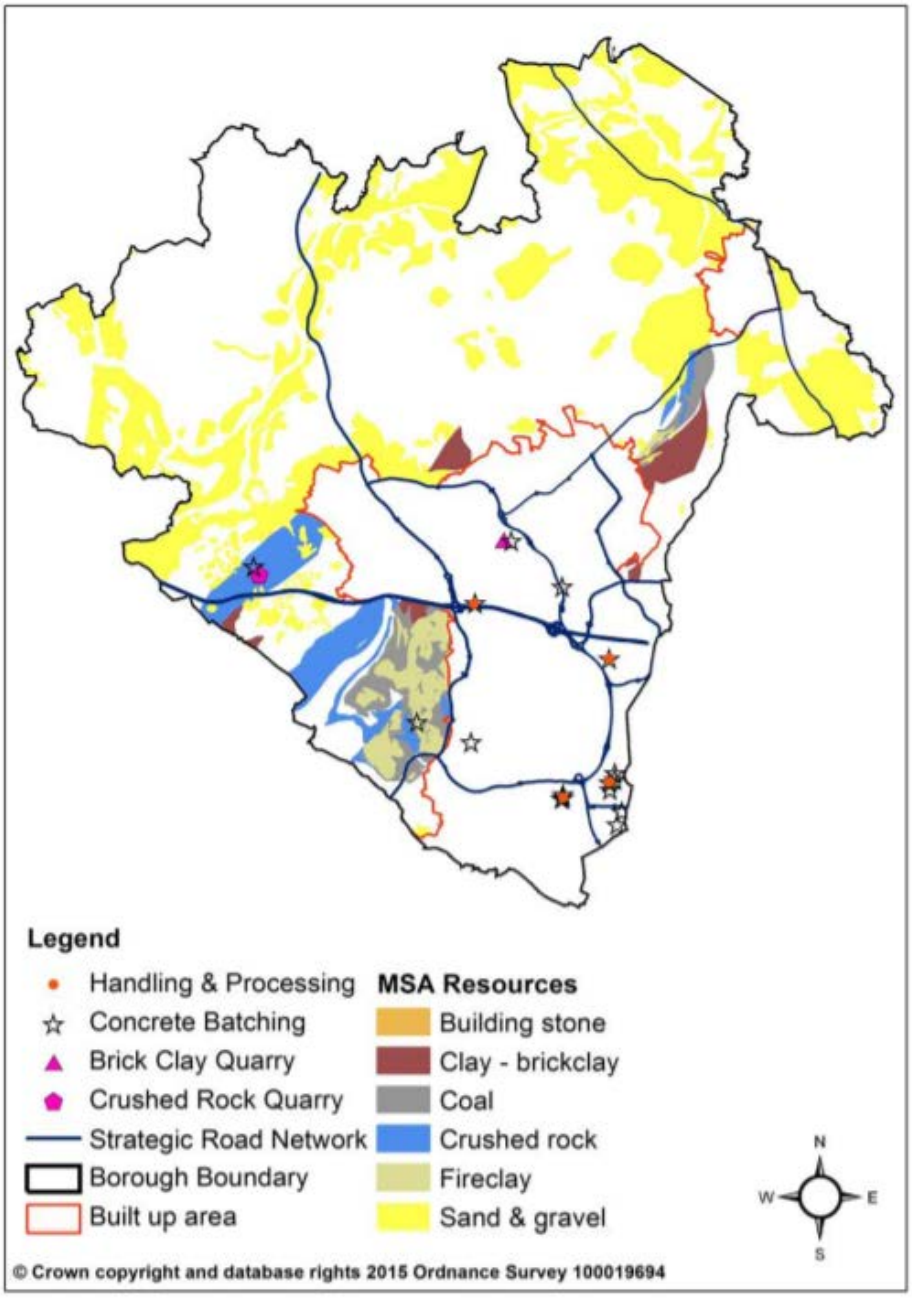
5.4.13 Despite the extent of minerals deposits in the borough, there are only two active minerals extraction sites:

- New Hadley Brickpit, extracting clay and shale;
- Leaton Quarry, extracting igneous and metamorphic rock.

5.4.14 The last coal and fireclay extraction ceased in the 2013 with the closure of the New Works mine west of Wellington.

5.4.15 The borough's minerals resources are mapped in Figure 5.1 below:

Figure 5.1 Minerals deposits and facilities in Telford and Wrekin[51]



[51] http://www.telford.gov.uk/download/downloads/id/4388/b6d_technical_paper_-_minerals.pdf

Trends and future baseline

5.4.16 The majority of high quality land is Grade 2 and Grade 3 located to the northern and north western fringe of Telford. This indicates some potential sensitivity to development at these locations, though it is recognised that in practice some land at the Telford fringe is no longer in functional agricultural use and its development may not necessarily result in the loss of productive agricultural land.

5.4.17 The high quality BMV land which underlies the rural areas of the borough could be adversely affected by future development on greenfield land at the smaller rural settlements.

5.4.18 Opportunities exist at brownfield sites within the borough, and it is anticipated that such opportunities, particularly those with extant permission, will continue to come forward for development over the plan period. However, brownfield sites are a finite resource and there can be considerable challenges in bringing them forward, particularly in instances where sites require rehabilitation from prior uses such as heavy industry.

5.4.19 It is considered that many of the borough's minerals deposits will continue to be remain underground, either due to their location beneath land protected by MSAs or land use constraints, or because they are not commercially viable. Consistent with national climate objectives, there is currently no prospect of remaining coal deposits being commercially extracted in the borough in future.

5.5 Key Issues

5.5.1 The following key issues emerge from the context and baseline review:

- There is clear direction from national, regional and adopted local policy that significant new growth should be directed to areas of poorer quality land and away from areas of best and most versatile agricultural land, where possible.
- Much of rural area of the borough is underlain by Grades 2 and 3 agricultural land, and detailed survey data reveals that land at the north and north western periphery of Telford is predominantly of Grades 2 and 3a. Poorer quality land is evident at the western and south western periphery of the Telford urban area.
- The most recently available Brownfield Land Register (BLR), published in December 2018, identified capacity for 3,199 dwellings on brownfield sites within the borough, 55% of which are land in public ownership.[52] However, a number of these sites have subsequently been delivered or received permission and publication of a new BLR is anticipated in the near future.
- Housing completions on previously developed sites in the borough have averaged 44% of total completions over the last five years, though within this period the annual proportion of total completions on PDL land has fallen in each of the last four years.
- Minerals deposits beneath the plan area are extensive in both total area and variety, though minerals extraction is limited to just two operational sites.

[52] https://www.telford.gov.uk/info/20456/local_registers/3270/brownfield_register

5.6 Scoping Decision

5.6.1 Considering the key issues discussed above it is proposed that the topic of soil and land should be **SCOPED IN** to the Integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Promote the effective use of land, minerals and soil resources; supporting the protection of best and most versatile agricultural land, preserving minerals resources, and taking opportunities to enhance the value of land for biodiversity, carbon sequestration, and other beneficial functions.	• Promote the use of previously developed land where this exists as a viable alternative to greenfield development and would not have unacceptable impacts on other important features such as biodiversity and cultural heritage? • Avoid the loss of the highest quality agricultural land where possible? • Promote the effective use of agricultural land for temporary uses where soil quality can be retained? • Support a change of use from agricultural land where opportunities for environmental net gain can be achieved? • Promote community food growing and greater self-sufficiency? • Avoid the unnecessary sterilisation of minerals deposits and associated infrastructure?

6. Landscape

6.1 Introduction

6.1.1 Landscape is defined in the European Landscape Convention as "*an area, as perceived by people, whose character is the result of the action and interaction of* natural *and/or human factors".*

6.1.2 Landscapes contribute immensely to the character of places, and have an important role in how people interact with and enjoy the environment. It is therefore important to understand how these areas are perceived, what makes them special, and how they should be managed.

6.1.3 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following relevant factors.

- National Landscape Character Areas
- Protected landscapes
- Areas of Outstanding Natural Beauty

6.2 Context review

International

6.2.1 The **European Landscape Convention** (ELC) promotes protection, management and planning for European landscapes and organises European co-operation on landscape issues. The ELC was signed by the UK government and introduced in 2007.

National

6.2.2 Key messages from the **National Planning Policy Framework**[53] (NPPF) include:

- Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty […]. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within these designated areas should be limited.
- Strategic policies should set out an overall strategy making provision for 'conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure.
- Planning policies and decisions should ensure that developments 'are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation of change (such as increased densities).
- Planning policies and decisions should contribute to and enhance the natural and local environment by:
  a. protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;
  b. recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and

[53] MHCLG (2019) National Planning Policy Framework [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

other benefits of the best and most versatile agricultural land, and of trees and woodland; and

c. remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

- The government attaches great importance to Green Belts, whose fundamental aim is to prevent urban sprawl by keeping land permanently open. The general extent of Green Belts is established and can only be altered in exceptional circumstances through preparation or review of a Local Plan.

6.2.3 National Character Area (NCA) Profiles are published by Natural England and divide England in 159 distinct natural areas based on their landscape, biodiversity, geodiversity, historic, cultural and economic characteristics.[54] NCAs follow natural features in the landscape and are not aligned with administrative boundaries. NCA profiles describe the features which shape each of these landscapes, providing a broad context to its character.

6.2.4 **The Government's 25 Year Environment Plan**[55] states the intention to work with relevant authorities to deliver environmental enhancements within all 159 NCAs across England. Along with the policies contained within Chapter 2 'Recovering nature and enhancing the beauty of landscapes', Goal 6 'Enhanced beauty, heritage and engagement with the natural environment' of the Government's ''A Green Future: Our 25 Year Plan to Improve the Environment' directly relates to the Landscape.

6.2.5 The recent **Environmental Bill 2020 Policy Statement** supplements existing legalisation and policy on protected sites and species and introduces new incentives, actions and planning tools to drive further improvements for nature:

It establishes provisions that require the development of local nature reserve strategies across England.

Tools will support better spatial planning for nature recovery by setting out priorities and opportunities for protecting and investing in nature within a local area.

Regional

6.2.6 The **Shropshire Hills AONB Management Plan**[56] aims to "influence and guide landowners, organisations and individuals on a wide range of topics by setting out how to best manage the Shropshire Hills landscape".

6.2.7 The **West Midlands Farmsteads and Landscapes Project: Summary Report (Shropshire)** provides solutions to finding a sustainable uses for existing historic farm sheds, and surrounding buildings. The document lists that a great number of registered offices are based within historic farmsteads in eastern Shropshire and Telford.

Local

6.2.8 Policy NE7 (Shropshire Hills Area of Outstanding Natural Beauty and Strategic Landscapes) of the **adopted Local Plan 2018** underscores the protection afforded to areas of the borough which fall within the Shropshire Hills AONB, and also identifies a number of landscapes for local designation as 'strategic landscapes'. This designation provides protection from "development which would cause detrimental change to the quality of the landscape".

6.2.9 The **Local Green Infrastructure Needs Study (2013)** identifies green infrastructure needs in regards to health and wellbeing (including recreation needs), biodiversity and spatial

[54] Natural England (2012) 'National Character Area profiles' [online] https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making
[55] HM GOV (2018) A Green Future: Our 25 Year Plan to Improve the Environment [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf
[56] Shropshire Hills AONB Management Board (2019) [online] https://www.shropshirehillsaonb.co.uk/our-work/management-plan/2019-24-management-plan

environmental resilience. The study identified the extent to where there is surplus of deficiency of green infrastructure. Suggested interventions include improving landscape character.

6.2.10 The **Landscape Sensitivity Study (2014)** was undertaken to assess landscape sensitivity and its ability to accommodate changes from development.

6.2.11 The report analysed the SHLAA sites for their landscape sensitivity. The sites were mainly located within urban areas of Telford and Newport.

6.2.12 The **Telford & Wrekin Strategic Landscape Study (2015)[57],** was produced to support the Telford & Wrekin Local Plan and identifies three strategic landscapes within the borough which include Weald Moors, Lillieshall Village and Wrekin Forest and their sensitivity to development and change.

6.2.13 The **Green Infrastructure Framework[58]** is a framework with a purpose to provide overall provision of overall green infrastructure and to improve the understanding. The report provided an analysis of existing green facilities and a description on how the planning process effects/ can help the provision of green infrastructure.

6.3 Focused literature review

There are many studies showing a positive link between access to green space and health

6.3.1 Access to nature and attractive green spaces has been a recurring theme throughout history in relation to healthy lifestyles (*Ward-Thompson, 2011*)

6.3.2 Greenspace exposure is associated with a wide range of health benefits, both the reduction in blood pressure and heart rate and the decrease of diabetes and cardiovascular mortality. (*Jones & Twohig-Bennett 2018*).

6.3.3 There are correlations between quality and quantity of neighbourhood greenspace in relation to health and well – being (*van Dillen et. al, 2011; McEachan et. al. 2018*).

Access to scenic environments is associated with positive effects upon wellbeing

6.3.4 Inhabitants of more scenic environments report better health, across urban, suburban and rural areas, even when taking core socioeconomic indicators of deprivation into account (*Seresinhe, C., Preis, T. & Moat, H, 2015*)

6.3.5 There is evidence that more frequent visits to the countryside is associated with higher life satisfaction *(Coldwell & Evans, 2018).*

6.3.6 Access to good-quality landscape has positive effects on health and wellbeing – and negative effects when access is lacking *(Landscape Institute, 2013).*

Urban landscapes / townscapes are as important as the countryside

6.3.7 Jerrett, et al. (2014) states that greenness within urban areas is positively associated with physical activity. The strongest association was linked between young adults and grew weaker with increase of age.

6.3.8 A combination of air pollution, noise pollution and limited access to green space in urban areas can appear particularly harmful to health *(Persson et, al. 2018).*

6.3.9 McEachan et. al. (2002) suggests there is a positive link between longevity and walkable access to urban greenspace for older people.

[57] https://www.telford.gov.uk/download/downloads/id/3787/strategic_landscapes_study_2015.pdf
[58] https://www.telford.gov.uk/download/downloads/id/1377/green_infrastructure_evidence_and_analysis_document.pdf

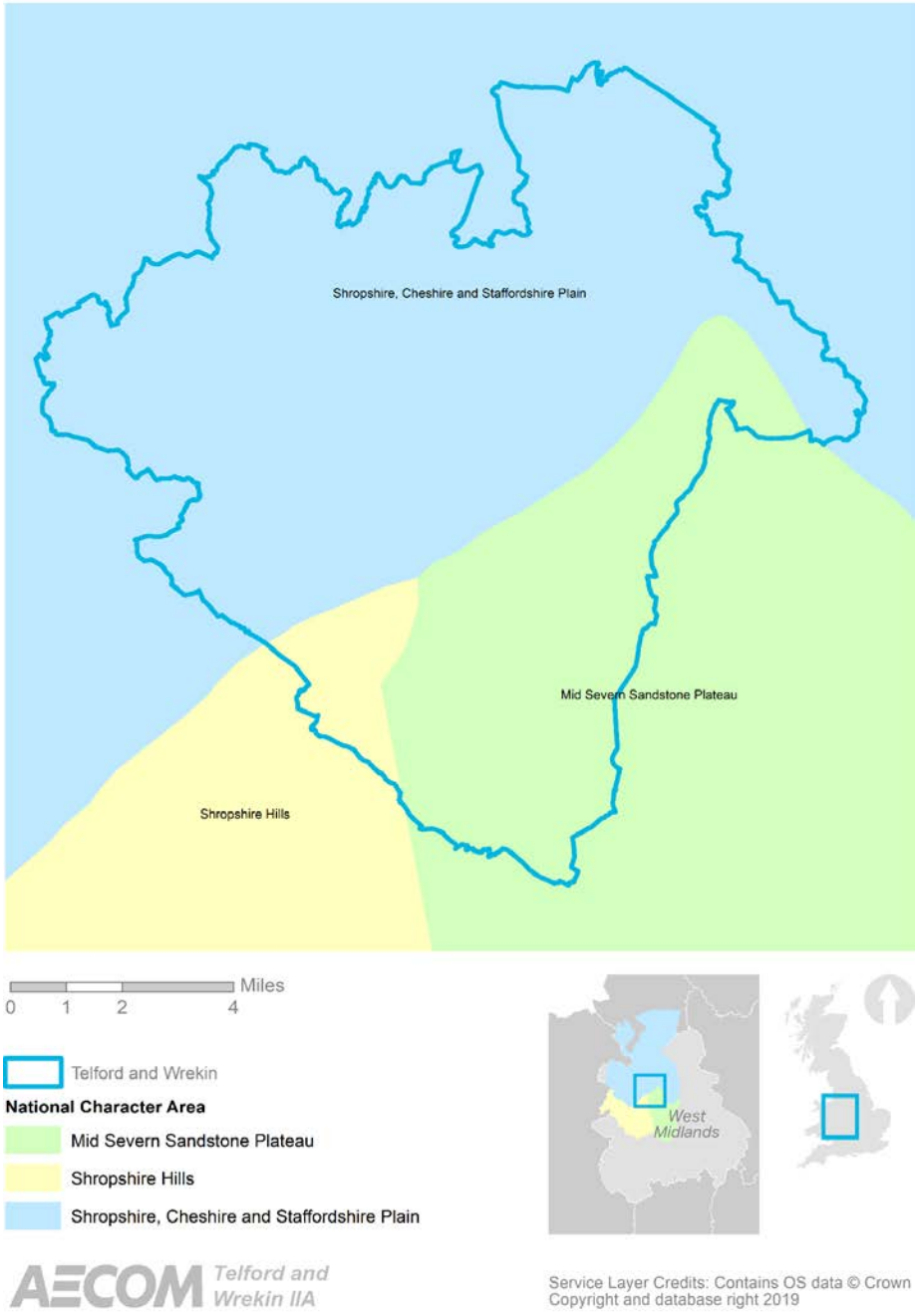
6.4 Baseline review

National Landscape Character Areas

6.4.1 National Character Area (NCA) Profiles are published by Natural England and divide England in 159 distinct natural areas based on their landscape, biodiversity, geodiversity, historic, cultural and economic characteristics.[59] NCAs follow natural features in the landscape and are not aligned with administrative boundaries. NCA profiles describe the features which shape each of these landscapes, providing a broad context to its character. Across England, there are 159 National Character Areas (NCAs).

6.4.2 There are three National Landscape Character Areas (LCA) within Telford and Wrekin.

Figure 6.1: National Landscape Character Areas



[59] 3 Natural England (2012) 'National Character Area profiles' [online], available from: https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making

6.4.3 The most prominent of these is the Shropshire, Cheshire and Staffordshire Plain. The remaining two NCAs are Mid Severn Sandstone Plateau and Shropshire Hills. The National Character Area profiles detail the features and characteristics of each NCA and are summarised below.

6.4.4 **NCA Profile 61: Shropshire, Cheshire and Staffordshire NCA** is made up of several gently undulating, lush pastoral farmlands (Figure 6.2). It is surrounded by the Merseyside NCA to the north and rural Shropshire Hills to the south. The NCA comprises of the county of Cheshire, northern half of Shropshire (Telford & Wrekin), and north-west of Staffordshire.

Figure 6.2 Pastoral farmlands in Shropshire, UK.

6.4.5 **NCA Profile 65: Shropshire Hills NCA** is characterised by a landscape of rugged, and mostly bare-topped hills, contrasting with mixed agricultural lands that intervene between valleys and dales. The landscape is known for its tranquillity, with strong presence of hedgerow, trees and watercourses. The Wrekin Woodlands and the Shropshire Hills AONB falls within this character area.

6.4.6 **NCA Profile 66**: **Mid Severn Sandstone Plateau NCA** is located amongst the central catchment of Severn and lower Stour rivers. The landscape is predominantly rural and provides the region with large arable fields for food production. The NCA combines landscape character with heritage through several industrial historical sites such as the Ironbridge Gorge. In the 19th and 18th century the landscape was rich in resources such as raw materials, coal, iron and other resources valuable during the Industrial Revolution.

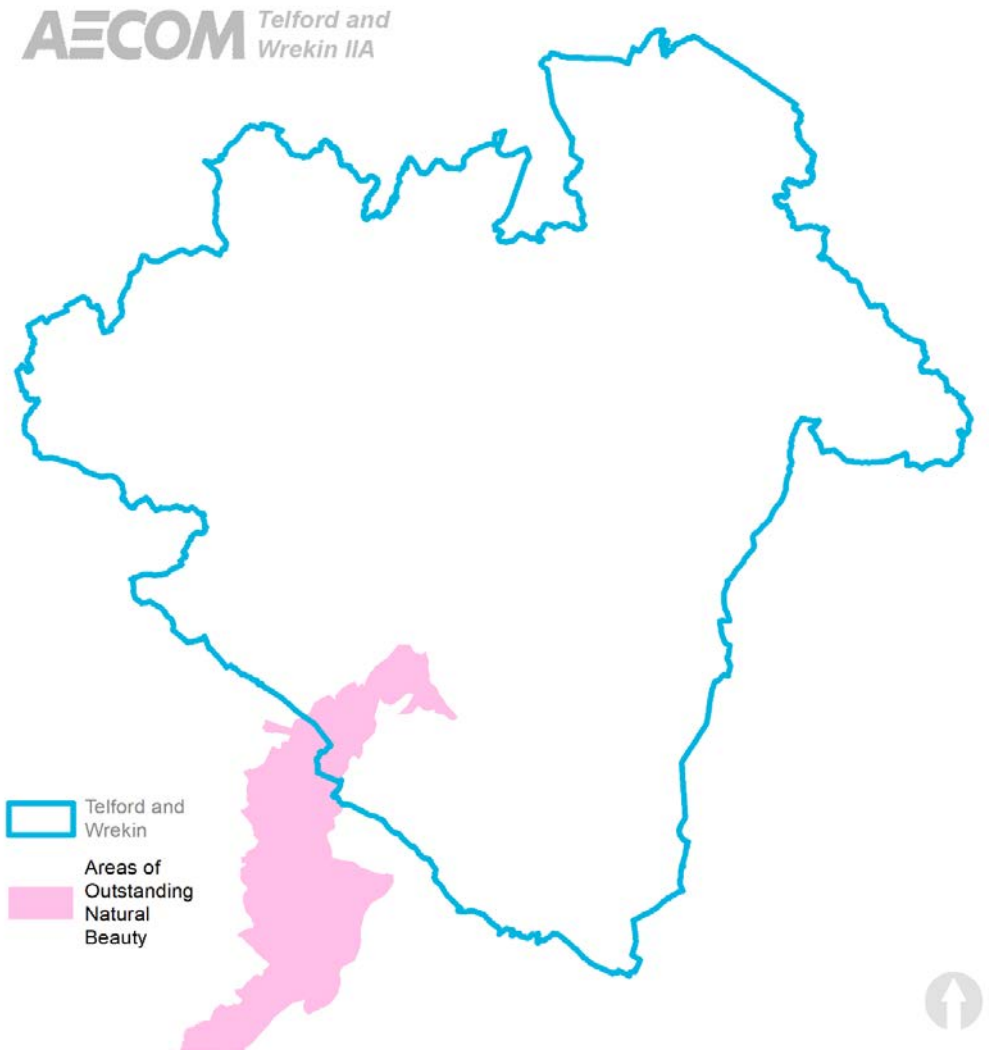
Protected Landscapes

6.4.7 Areas of Outstanding Natural Beauty (AONB) are countryside landscapes across England that are designated for their overwhelming natural and historic beauty. Existing ANOBs are protected and conserved from significant development proposals that may alter the landscape and surrounding areas. Natural England carry out designations for areas across England and to be considered, the landscape must include a variety of factors such as:

- Landscape quality
- Scenic quality
- Relative wildness
- Relative tranquillity
- Natural heritage
- Cultural heritage

6.4.8 The Shropshire Hill AONB partly intersects with the south of the local plan area (though a larger zone of influence exists). The AONB was designated in 1958 and covers a large portion of Shropshire. Many distinct qualities of the AONB include wildlife, heritage, geology, culture and recreational opportunities.

Figure. 6.3 Areas of Outstanding Natural Beauty (AONB) 2019 – Shropshire Hill AONB.



6.4.9 The Council sits on the Shropshire Hills Area of Outstanding Natural Beauty (AONB) partnership and is involved in the process to review, update and adopt the AONB management plan. The most recent update was adopted in 2019.

6.4.10 A key local plan monitoring measure was to ensure local green spaces are delivered and important greenspaces within the community are protected. A further 27 local green spaces were designated in 2018 – 2019.

6.4.11 The 200 Green Guarantee is an initiative from the council to secure funding of £52,000 as a result of the 'big green vote' which involved the communities input.

6.4.12 A Green Infrastructure Framework was created to better co-ordinate planning, design and management of green infrastructure across the borough. The outcome produced an evidence based strategic framework that supports the boroughs green infrastructure and involved key internal and external stakeholders.

Landscape Sensitivity

6.4.13 A Landscape Sensitivity Study was undertaken in February 2014 and found that overall there were approximately 16% of sites within Telford and Newport that were susceptible to landscape sensitivities taken from the 2012 SHLAA. Open countryside sites that are distanced away from urban areas are of higher landscape value. Sites that are located on the far outskirts are considered high sensitivity. There are several sites within the borough considered to be of the highest sensitivity ranking and these are located in the North West & North East areas of the borough. The analysis identified that there were no SHLAA sites within and around Newport in 2012 that were of the highest sensitivity ranking.

6.4.14 The aim of the Telford and Wrekin Strategic Landscapes Study Draft (2015) was to assess and identify strategic landscapes sensitivity to development and change. The report concluded that there are several threats and forces of change that affect the landscape, and that planning and management within Telford and Wrekin should protect and enhance special qualities of the landscape. The following points/threats were identified:

- Climate change could lead to increase temperatures and extreme weather events that could potentially affect the landscape and its associated habitats, land uses and farming practices.
- Further urban encroachment from surrounding larger settlements of Telford and Newport erode a strong sense of landscape character and have the ability to disrupt views towards historic assets and open setting of villages.
- Poorly-sites/ designated residential development has previously not responded to sensitivities of existing settlement patterns, in particular Lilleshall Village.
- Incremental suburbanisation does not take into account property boundary treatments and highway interventions such as road infrastructure. This detracts from rural character.
- There should be consideration of extensive horizontal developments (such as solar farms) and their impacts on important views.
- Agricultural activities such as diversification/ amalgamation and intensification can significantly affect the landscape.
- There are concerns around lack of hedgerow/ field tree management which would eventuate in their loss from the landscape.

6.4.15 A new Landscape and Visual Sensitivity Study has been commissioned to support the Review of the Local Plan. Gillespies LLP have completed the field work and are currently working on the final report which is anticipated in November 2020. The assessment of potential sites will be undertaken against the outcomes of the 2020 Landscape and Visual Sensitivity Study.

Trends and future baseline

6.4.16 There are designated landscapes and greenspace within the borough that will continue to be protected irrespective of the Local Plan review. It is therefore likely that these areas will retain their special character. However, pressures and threats could potentially lead to a gradual erosion of landscape character in the absence of a well-planned approach to growth.

6.4.17 Telford and Wrekin landscapes contribute to health and wellbeing of the community in terms of providing tranquil environments and nature reserves.

6.4.18 The Green Guarantee was a council led commitment to provide protection and preservation of up to 200 green spaces. The Local Plan initiative was agreed to by cabinet members and a £52,000 funding grant was provided. The council going forward will need to provide updates and regular monitoring. This should help to ensure some degree of enhancement to greenspace across the borough, at least in the short term.

6.4.19 The Landscape Sensitivity Study conducted in 2014 reviewed that the previous 2012 SHLAA sites contained only 16% highly sensitive site options. There would need to be an updated landscape sensitivity study to review further site options in future.

6.4.20 A more recent Strategic Landscape Sensitivity study undertaken in 2015 stated several threats to the borough's landscape character which included urban encroachment, lack of asset management and further agricultural land uses.

6.4.21 Climate change has the ability to significantly affect the landscape in unpredictable ways. This should be considered moving forward in terms of potential effects.

6.5 Key issues

6.5.1 The following key issues emerge from the context and baseline review:

- There is a need to protect and enhance landscape and townscape character as it contributes towards environmental protection, enhancement and communities health and wellbeing.
- The ability to experience tranquil environments in countryside settings is important to local communities and their health and wellbeing.
- There is an AONB landscape within Telford and Wrekin boundary. Protection of this asset will be of high importance, among other historical, geographical and environmental assets.
- Landscape sensitivity studies have previously reviewed development site options from the 2012 SHLAA. There will be a need to produce a landscape sensitivity study, and even monitor effects from previous recommendations to current state of landscape environments as these will have likely changed.
- The effects of climate change upon landscapes will need to be taken into consideration.

6.6 Scoping Decision

6.6.1 Considering the key issues discussed above it is proposed that the topic of landscape should be **SCOPED IN** to the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IA objective	Assessment questions (will the option/ proposal help to...)
Protect and enhance the character of valuable landscapes and townscapes; whilst ensuring their multifunctional use and enjoyment by all.	• Protect and enhance access to high quality green and open space in urban areas? • Enhance poor quality landscapes and townscapes? • Protect sensitive landscapes that makes a positive contribution to landscape character and provide recreational opportunities? • Consider effects of climate change on landscape environments?

7. Historic Environment

7.1 Introduction

7.1.1 The historic environment is defined in the NPPF as:

"All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora"

7.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following relevant factors.

- Designated heritage assets
- Heritage at risk
- Trends

7.2 Context review

International

7.2.1 The European Landscape Convention of the Council of Europe promotes the protection, management and planning of the landscapes and organises international co-operation on landscape issues.[60]

7.2.2 The main purpose of the Convention for the Protection of the Architectural Heritage of Europe is to reinforce and promote policies for the conservation and enhancement of Europe's heritage.[61] It also affirms the need for European solidarity with regard to heritage conservation and is designed to foster practical co-operation among the Parties. It establishes the principles of "European co-ordination of conservation policies" including consultations regarding the thrust of the policies to be implemented.

7.2.3 These Conventions are still relevant during the transitionary period of Brexit, but for much of the remaining plan period the UK will be independent from EU law. The principles of these European statutes are reflected heavily in UK national law, strategy and policy though (see below).

National

7.2.4 The Planning (Listed Buildings & Conservation Areas) Act 1990 is a UK Act of Parliament that changed laws relating to the granting of planning permission for building works, with a particular focus on listed buildings and conservation areas. [62] It created special controls for the demolition, alteration or extension of buildings, objects or structures of particular architectural or historic interest, as well as conservation areas.

7.2.5 The Ancient Monuments and Archaeological Areas Act (1979)63 allows the investigation, presentation and recording of matters of archaeological or historical interest and makes provision for the regulation of operations or activities which may affect ancient monuments and archaeological areas.

[60] Council of Europe (2019) Council of Europe Landscape Convention [online] available at: <https://www.coe.int/en/web/landscape> last accessed [28/08/19]
[61] Council of Europe (2019) Convention for the Protection of the Architectural Heritage of Europe (Granada, 1985) [online] available at: <https://www.coe.int/en/web/culture-and-heritage/granada-convention> last accessed [28/08/19]
[62] UK Public General Acts (1990) Planning (Listed Buildings and Conservation Areas) Act 1990 [online] available at: <https://www.legislation.gov.uk/ukpga/1990/9/contents> last accessed [28/08/19]
[63] Ancient Monuments and Archaeological Act (1979) [online] https://www.legislation.gov.uk/ukpga/1979/46

7.2.6 Historic Environment for England (2010)[64] sets out the Government's vision for the historic environment. It calls for those who have the power to shape the historic environment to recognise its value and to manage it in an intelligent manner in light of the contribution that it can make to social, economic and cultural life.

7.2.7 Key messages from the **National Planning Policy Framework**[65] (NPPF) include:

- Strategic policies should set out an overall strategy making provision for 'conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure.
- Planning policies and decisions should ensure that developments 'are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation of change (such as increased densities).
- Heritage assets should be recognised as an 'irreplaceable resource' that should be conserved in a 'manner appropriate to their significance', taking account of 'the wider social, cultural, economic and environmental benefits' of conservation, whilst also recognising the positive contribution new development can make to local character and distinctiveness.
- Plans should set out a 'positive strategy' for the 'conservation and enjoyment of the historic environment', including those heritage assets that are most at risk.
- When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss of less than substantial harm to its significance.

7.2.8 These messages are supported by the **National Planning Practice Guidance** (NPPG)[66] which itself includes the key message that local authorities should set out in their Local Plans a positive strategy for the conservation and enjoyment of the historic environment which recognises that conservation is not a passive exercise and that identifies specific opportunities for the conservation and enhancement of heritage assets.

7.2.9 Along with the policies contained within Chapter 2 'Recovering nature and enhancing the beauty of landscapes', Goal 6 'Enhanced beauty, heritage and engagement with the natural environment' of the Government's 'A Green Future: Our 25 Year Plan to Improve the Environment'[67] directly relates to the historic environment.

7.2.10 The **UK 2070 Commission's Final Report 2020** on regional inequalities details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes harnessing cultural and environmental assets by focusing policy and funding towards areas and assets outside of London.

[64] HM Government (2010) The Government's Statement on the Historic Environment for England [online] http://webarchive.nationalarchives.gov.uk/+/http://www.culture.gov.uk/reference_library/publications/6763.aspx
[65] MHCLG (2019) National Planning Policy Framework [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf
[66] Department for Communities and Local Government (2012) National Planning Practice Guidance [online] http://planningguidance.communities.gov.uk/
[67] HM GOV (2018) A Green Future: Our 25 Year Plan to Improve the Environment [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

Regional

7.2.11 **The Marches Local Industrial Strategy**[68] outlines the importance of the historic past of the industrial revolution's birth in the area when considering future economic prosperity.

Local

7.2.12 **The Telford and Wrekin Local Plan** (2011-2031)[69] sets out policies to protect the area's historical assets, including:

Policy BE3: Ironbridge Gorge World Heritage Site

Policy BE4: Listed Buildings

Policy BE5: Conservation Areas

Policy BE6: Buildings of Local Interest

Policy BE7: Parks and Gardens of Historic Interest

Policy BE8: Archaeology and scheduled ancient monuments

7.2.13 **The Telford and Wrekin programme to protect, care and invest to create a better borough**[70] sets out plans to protect and champion the local culture and heritage through its future ambitions.

7.2.14 Telford and Wrekin have two specific supplementary planning documents which advise on the specifics of shop front and signage design in conservation areas as well as windows and doors for listed buildings and conservation areas.

7.3 Focused literature review

7.3.1 Historic environments are places where individuals are able to connect with, creating meaning and values. These meanings and values are prominent particularly on a localised scale, where residents and historic assets are directly linked. Several studies have investigated the linkage between historic nature and health and well – being.

Heritage assets can strengthen community spirit and social value

7.3.2 Historic England has identified that heritage can act as a healing mechanism for health and well - being in terms of heritage – triggered thinking, 'meaning-making' and cultural inclusion[71].

7.3.3 Power and Smyth (2016) examined the benefits of community – based heritage and found that many positive effects were derived from people who have been involved with heritage asset conservation. The effects of coming together with the community to research local historic assets resulted in many self – reported positive effects such as personal enrichment. The past can contribute to feelings of greater security and stability.

Heritage can stimulate positive emotions

7.3.4 Thomson, et. al. (2012) researched enhancing cancer patients wellbeing through non-pharmacological, heritage-focused intervention. It involved handling and discussing museum

[68] The Marches (2019) *Local Industrial Strategy (draft),* [online] https://www.marcheslep.org.uk/download/marches_local_industrial_strategy/Marches-Local-Industrial-Strategy-Final-draft-20.12.19.pdf [23/6/2020].
[69] Telford and Wrekin (2018) *Local Plan 2011-2031,* [online] https://apps.telford.gov.uk/downloads/localplan/Telford_and_Wrekin_Local_Plan_2011_2031_adopted_Jan_2018.pdf [23/6/2020].
[70] Telford and Wrekin (2019) *Our programme to protect, care and invest to create a better borough,* Telford: Telford and Wrekin Council.
[71] Reilly, S. Nolan, C. Monckton, L. Historic England. (2018). Wellbeing and the Historic Environment. [online] available at: https://historicengland.org.uk/images-books/publications/wellbeing-and-the-historic-environment/wellbeing-and-historic-environment/

objects with female patients in oncology wards. The results revealed that positive emotions and wellbeing had increased post session.

7.3.5 Barton et. al. (2009) studies health benefits in particular changes in self-esteem and mood after walking in four different National Trust sites of nature and heritage value in the East of England. The study concluded that access to countryside and urban green spaces for lifestyle, recreation and fitness purposes positively impact physical and mental health.

7.3.6 Certain places or situations are perceived to be therapeutic by those that experience them, and this often involves those with a historic / cultural meaning (*Darvill,T. et al. 2019*).

7.3.7 Whilst acknowledging limitations with some of the evidence (*Pennington, A. et al, 2019*) undertook a comprehensive review of studies that sought to make links between heritage and wellbeing. The review suggests that heritage and culture can contribute positively to health and wellbeing in a range of settings, including:

- Benefits from access to and visitation of museums.
- Handling of heritage related materials in healthcare settings.
- Visiting museums, historic houses and other heritage sites.
- Heritage volunteering and social engagement activities.
- Activities in historic landscapes and parks.
- Community archaeology.
- Living in historic places.

Heritage can have particular benefits for older people

7.3.8 Heritage based community research can encourage excitement and achievement among elderly people. Interest in heritage can stem from anxiety of the present, including uncertainty felt by society about government, technology and global threats (*Power and Smyth, 2016*).

7.3.9 Heritage can trigger nostalgia and a sense of local place among older generations (*Lundgren, 2010*) (*Beaumont, 2013*).

7.4 Baseline review

Designated assets

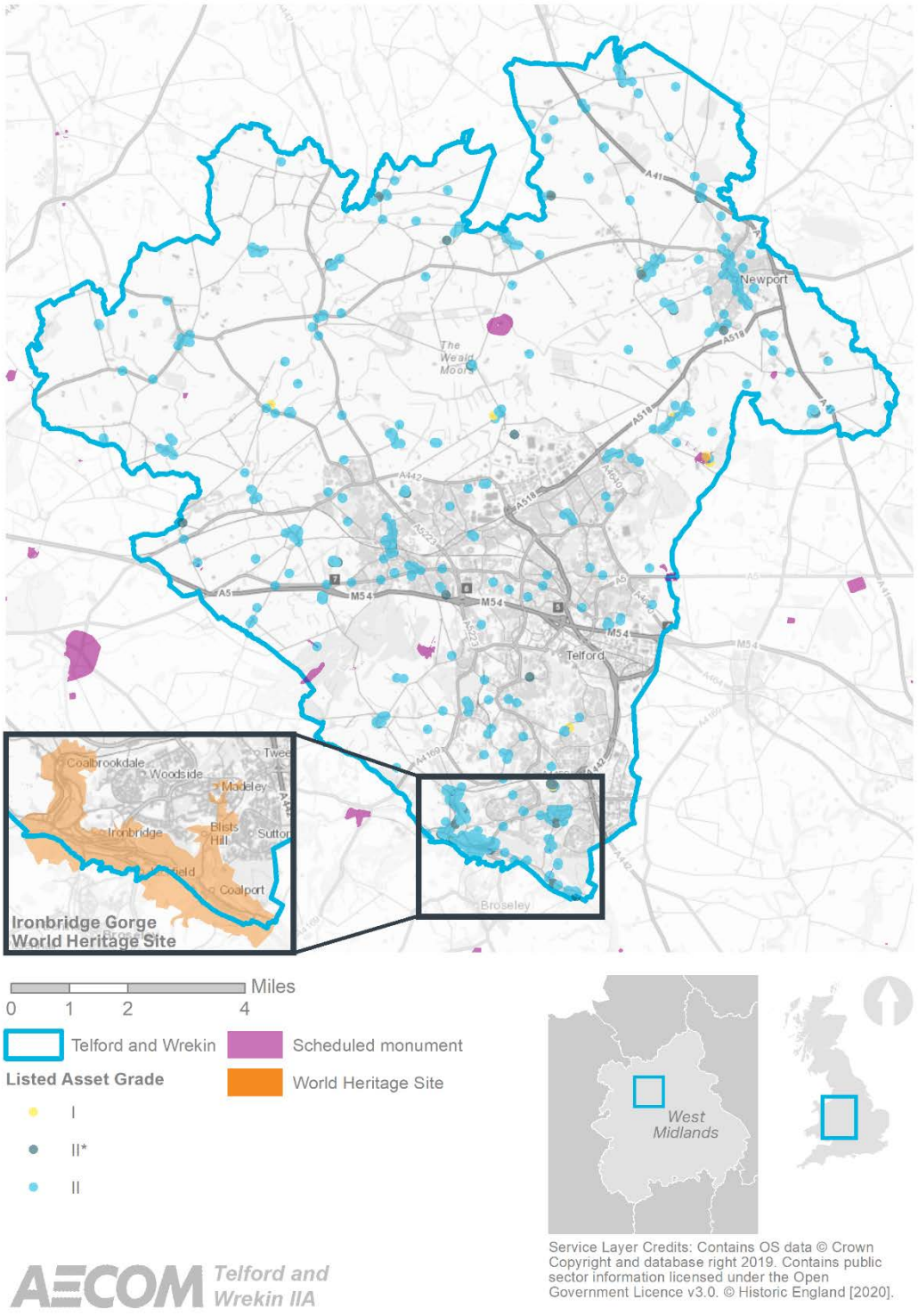
7.4.1 As Figure 7.1 shows, there is a broad distribution of designated heritage assets across the Borough. It is evident that the larger built-up areas of Telford and Newport have higher concentrations, whilst the concentrations of listed assets in Ironbridge and Coalbrookvale are within the Ironbridge Gorge World Heritage Site. There are a number of scheduled monuments across the area, though none are clustered together and for the most part they are found outside of the Borough's main built-up areas.

7.4.2 The borough has a total of seven conservation areas. Only one of these – the Horsehay and Spring Village conservation area - is within the urban area of Telford itself. The towns of Wellington and Newport each have a conservation area at their historic centres, as do the villages of Edgmond in the borough's north, High Ercall in the borough's north west and Wrockwardine in the borough's west. The remaining conservation area covers a broad expanse of the south of the borough, capturing much of the settlements of Ironbridge, Jackfield and Coalbrookvale and overlapping in part with the World Heritage Site.

There are a number of locally listed assets in the area which have been identified as being important to the local historic environment. As of the last audit of these sites, the majority of them were found around the Telford built-up area with the greatest clusters found around the Ironbridge Gorge World Heritage Sites in Ironbridge. That said, the data representing these

assets is old and hence minor changes are likely to have occurred. As such, there is no accompanying map of the locally listed sites.

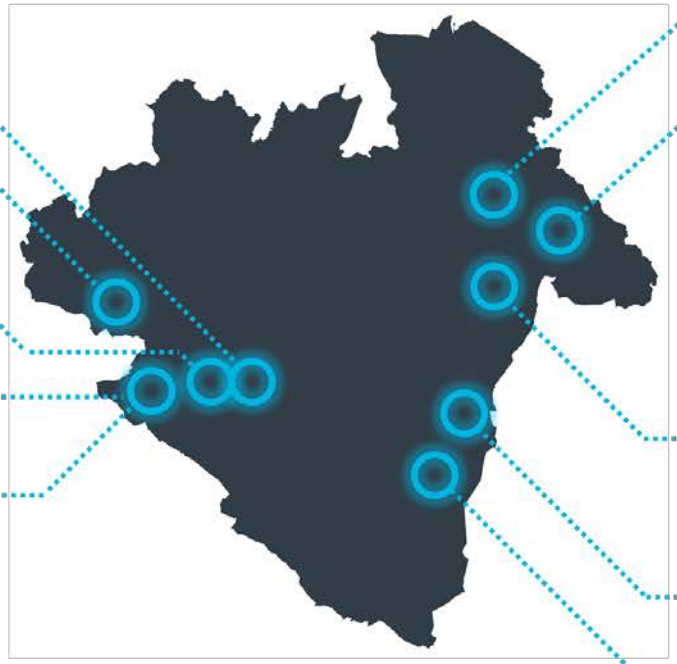
Figure 7.1: Heritage assets in Telford and Wrekin.



Heritage at risk

7.4.3 As Figure 7.2 shows, there are a number of heritage assets which are deemed at risk in the Borough. In total there are ten assets identified as at risk, many of which are scheduled monuments and seven of which are classified as in poor, very bad or having extensive problems. Three of the heritage assets are classified as at 'immediate risk' of rapid deterioration, though responsibility for remediation lies with a range of organisations.

Figure 7.2 Heritage at risk in Telford and Wrekin (as reported by Historic England)



Wellington Conservation Area
Condition: Poor
Vulnerability: Low vulnerability
Trend: No significant change

Canal aqueduct over River Tern, Rodington (Scheduled Monument)
Condition: Extensive significant problems
Vulnerability: Plant growth
Trend: Declining

Church of St Peter, Wrockwardine (Grade I Listed Building)
Condition: Poor
Priority Category: D- Slow decay- solution agreed but not yet implemented

Charlton Castle, Wrockwardine (Scheduled Monument)
Condition: Very bad
Priority Category: C - Slow decay; no solution agreed

Moated site and a fishpond, Charlton (Scheduled Monument)
Condition: Generally satisfactory, but with significant localised problems
Vulnerability: Plant growth
Trend: Declining

Gatehouse to former Caynton Manor, Edgmond (Grade II* Listed Building)
Condition: Poor
Priority Category: A - Immediate risk of further rapid deterioration or loss of fabric; no solution agreed

Enclosed Iron Age farmstead, Chetwynd Aston and Woodcote (Scheduled Monument)
Condition: Unknown
Vulnerability: Arable ploughing
Trend: Unknown

Site of pumping engine, Lilleshall and Donnington (Scheduled Monument)
Condition: Poor
Priority Category: B - Immediate risk of further rapid deterioration or loss of fabric; solution agreed but not yet implemented

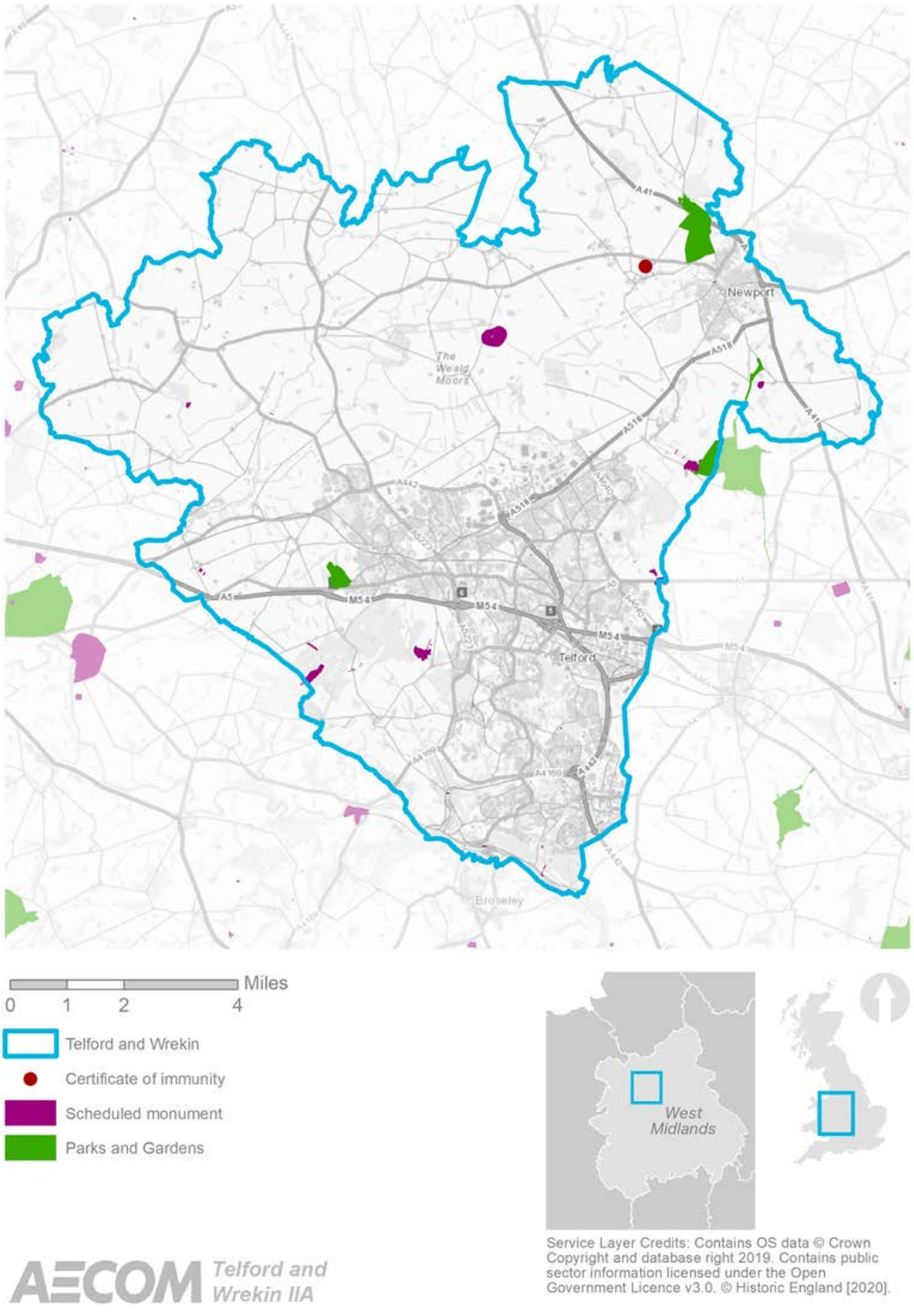
Uxacona Roman site (Scheduled Monument)
Condition: Generally satisfactory, but with significant localised problems
Vulnerability: Development requiring planning permission
Trend: Stable

Church of St Peter, Church Road, St. Georges and Priorslee (Grade II Listed Building)
Condition: Poor
Priority Category: A- Immediate risk of further rapid deterioration or loss of fabric and no solution agreed

Archaeology

7.4.4 There are a number of identified archaeological assets in the area, including one site which has got a current certificate of immunity, meaning that the listing and heritage status of the site is prevented from changing in order to restrict the site from having its heritage status altered; this is in order to give certainty of viability for a developer. The area also has a number of historic parks and gardens, one of which crosses into Staffordshire, raising the importance of local authority cooperation to ensure that it is adequately protected. There are also a number of scheduled monuments across the Borough (which are also designated).

Figure 7.3 Archaeological features



Trends and future baseline

7.4.5 Ironbridge and Coalbrookdale have the highest concentration of listed assets.

7.4.6 The heightened flood risk as a result of climate change is likely to lead to an increase risk of loss and damage to these heritage assets.

7.4.7 If remediating action is not taken, then the deterioration of some of the area's heritage assets could result in a loss of significance of certain heritage features.

7.4.8 Ongoing protection for nationally listed heritage assets will offer a degree of protection from ad-hoc development. Likewise, Conservation Areas will continue to provide guidance on what is acceptable development. A significant deterioration in the historic environment across the borough would therefore be unlikely (but cumulative effects could arise due to piecemeal development).

7.5 Key issues

7.5.1 The following key issues emerge from the scoping exercise:

- The policy context makes it clear that the protection and enhancement of the historic environment is important.
- Historic features and cultural heritage can contribute towards sense of community and wellbeing.
- The West Midlands historic manufacturing and industrial history should be recognised as important to the area's identity when considering how industry develops in the future.
- Ironbridge (including Ironbridge Gorge World Heritage Site), Madeley and Coalbrookdale have the highest concentration of listed assets.
- The Borough's listed assets are spread across the urban and rural areas, exhibiting a range of distinct settlements.
- The heritage assets identified as at risk are located predominantly to the east and west of the Borough.

7.6 Scoping Outcome

7.6.1 Considering the key issues discussed above it is proposed that the topic of historic environment should be **SCOPED IN** to the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Conserve and enhance heritage assets (including their setting), cultural heritage and natural history.	• Protect historic assets, including their significance and their settings? • Support patterns of growth that are in keeping with settlement character? • Retain the historic industrial identity whilst meeting the needs of the present? • Recognise and promote the role of the historic environment in contributing to community identity?

8. Waste

8.1 Introduction

8.1.1 Human activities use resources and create 'wastes'. Traditionally, much of this waste material was discarded of and either sent to landfill or incineration. There is now a much stronger recognition that resources are finite and disposal of waste is problematic. Therefore, resources need to be managed sustainably, with a move to a 'circular economy'. This means using less natural resources, producing less waste, reusing and recycling materials and promoting more sustainable uses for residual material such as energy from waste.

8.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following important factors.

- Waste generation
- Waste management
- Waste facilities

8.2 Context review

International

8.2.1 The Directive 2008/98/EC on waste, the so-called Waste Framework Directive, (Council of the European Union and European Parliament, 2008) introduces the basic concepts and definitions relating to waste management, such as types of waste, recycling and recovery. It establishes when waste ceases to be waste and becomes a secondary raw material (so-called end-of-waste criteria), and distinguishes between waste and by-products. The Directive lays down some basic waste management principles:

8.2.2 Another piece of legislation which is of paramount importance is the Landfill Directive 1999/31/EC (Council of the European Union, 1999). This Directive aims at significantly reducing landfilling. Landfilling is the worst option from an environmental and resource efficiency perspective.

National

8.2.3 Responsible authorities must ensure that waste is handled in a manner which protects human health and the environment through testing the suitability of proposed sites, against the policies and factors in the National Planning Policy for Waste. LPAs should also work with Environmental Health colleagues, Public Health England and the Environment Agency and ensure land raising or landfill sites are restored to beneficial after-uses (e.g. agriculture, biodiversity, forestry, amenity) at the earliest opportunity and to high environmental standards.

8.2.4 The **National Planning Policy for Waste (2014)** sets out detailed waste planning policies. These are mainly focussed on the responsibilities of waste planning authorities and include:

- Using a proportionate evidence base to plan new capacity and spatial distribution in terms of waste arisings locally and in a wider context;
- Consider the need for waste management facilities alongside other spatial planning concerns;
- Identify the need for waste management facilities;
- Identifying suitable sites and areas for new waste management facilities;
- Policy on determining planning applications;

- Monitoring to inform local plan preparation and the determination of planning applications
- The factors that proposed sites should be considered to determine suitability.

8.2.5 The **National Waste Management Plan for England (2013)** is a high level document which is non–site specific. It provides an analysis of the current waste management situation in England, and evaluates how it will support implementation of the objectives and provisions of the revised Waste Framework Directive.

8.2.6 The **Clean Growth Strategy**[24] (2017) sets out a blueprint for a low carbon future by outlining proposals for decarbonising all sectors of the UK economy. Key aims include accelerating the shift to low carbon transport and homes and enhancing the benefits and value of natural resources by preserving and establishing new natural assets such as forests, minimising avoidable waste and managing emissions from landfill.

8.2.7 In the **Environmental Bill 2020 Policy Statement** there is a clear objective to move our economy away from the 'take, make, use, throw' system to a more circular economic model. The ambitions of the new bill are:

- Keep resources in use for longer and ensure that we extract the maximum value we can from them.
- The clauses will set a minimum eco-design requirement for products and require provision of information to buyers of products that are more durable, repairable and recyclable products and banning those products that cannot be reused or recycled.
- The bill will act on illegal waste activities. The government seeks to improve the management of waste and reduce the risk of economic, environmental and social harm that illegal activity often causes.

Regional

8.2.8 Telford and Wrekin is part of the **West Midlands Regional Waste Planning Technical Group** and hence is covered by the **Regional Waste Planning Strategy**[72]. It aims to deliver waste management organisation and facilities for the region, with ambitions to reduce waste and dispose/treat it in a way which does not harm the environment. The document sets out the segmented approach which distinguishes between industrial/commercial waste, construction and demolition waste and municipal waste.

Local

8.2.9 **The Telford and Wrekin Local Plan** (2011-2031)[73] sets out policies relating to waste management facilities (Policy ER7), waste planning for residential developments (Policy ER8) and waste planning for commercial, industrial and retail developments (Policy ER9).

- **Policy ER7:** focuses on applications for, and affecting waste management facilities. It assesses a scheme against its role within the circular waste economy, ensures that evidenced need is accounted for and aims to deliver increased recycling rates.
- **Policy ER8:** relates to waste planning within residential developments, with focus on the waste hierarchy, local design, storage and specific considerations for housing types.
- **Policy ER9:** is related to waste planning for commercial, industrial and retail development. It stipulates that centralised and integrated waste storage should be provided in a manner which permits easy access for collection.

[72] West Midlands Regional Waste Planning (2001) *West Midlands Regional Waste Planning Strategy,* [online] https://www.telford.gov.uk/downloads/file/1442/regional_waste_planning_strategy_draft_2001_west_midlands_regional_assembly_report, [23/6/2020].
[73] Telford and Wrekin (2018) *Local Plan 2011-2031,* [online] https://apps.telford.gov.uk/downloads/localplan/Telford_and_Wrekin_Local_Plan_2011_2031_adopted_Jan_2018.pdf [23/6/2020].

8.3 Focused literature review

8.3.1 Human activities generate large amounts of waste which needs to be handled, stored, collected and disposed of in a way that does not cause risks to human health and the environment (Zhu et. al. 2008, Public Health England, 2018).

Poor management of waste can cause serious environmental and health risks

8.3.2 Unscientific disposal of waste can cause serious environment and health risks (Gupta et. al. 1998) (Kansal et al. 1998). This tends not to be as much of an issue in developed countries such as the UK, but polluting activities can still occur.

8.3.3 Public Health England (2018) suggests that 80% of waste related damage to the environment (and subsequent human health) could be avoided through more thoughtful decisions about design, choice of materials and chemicals used.

8.3.4 Inadequately disposed of or untreated waste may cause serious health problems for populations surrounding the area of disposal. Other nuisances caused by uncontrolled or mismanaged waste disposal which may affect citizens negatively include impacts at local level, such as landscape deterioration, local water and air pollution, as well as littering, noise and other amenity concerns (World Health Organisation, 2015).

8.3.5 There is 'convincing evidence' that gastrointestinal symptoms result from bathing in sewage contaminated recreational waters (Saffron, L. et al, 2003). Pollution events such as flooding and direct effluence into rivers and the sea can contribute to such situations.

Improved management of waste is beneficial to the environment, with knock-on benefits to health

8.3.6 The appropriate disposal of waste has a beneficial impact not only on the economy but the environment and population health. Increasing environmental practices throughout the industry can reduce impacts on the environment such as air and water pollution. Ultimately this improves health and wellbeing. (WHO, 2003).

Communities in close proximity to waste management plants can be adversely affected

8.3.7 The populations living in proximity of waste disposal plants are often more deprived than general population, which invokes environmental health inequalities.

8.3.8 The Environment Agency (2005) commented on a range of studies that sought to find links between waste facilities and human health. There are some correlating factors, but strong causative links have not been established and further research is required. For example:

- Mental health could suffer for those in areas where waste facilities are planned or already exist (though this could be complicated by the presence of social deprivation).
- A large UK study has reported a small excess risk of congenital abnormalities for babies born to mothers residing within 2 km of landfill sites, compared with mothers residing further than 2 km
- Exposure to bioaerosols associated with composting can cause respiratory problems, particularly within a 250m buffer zone.

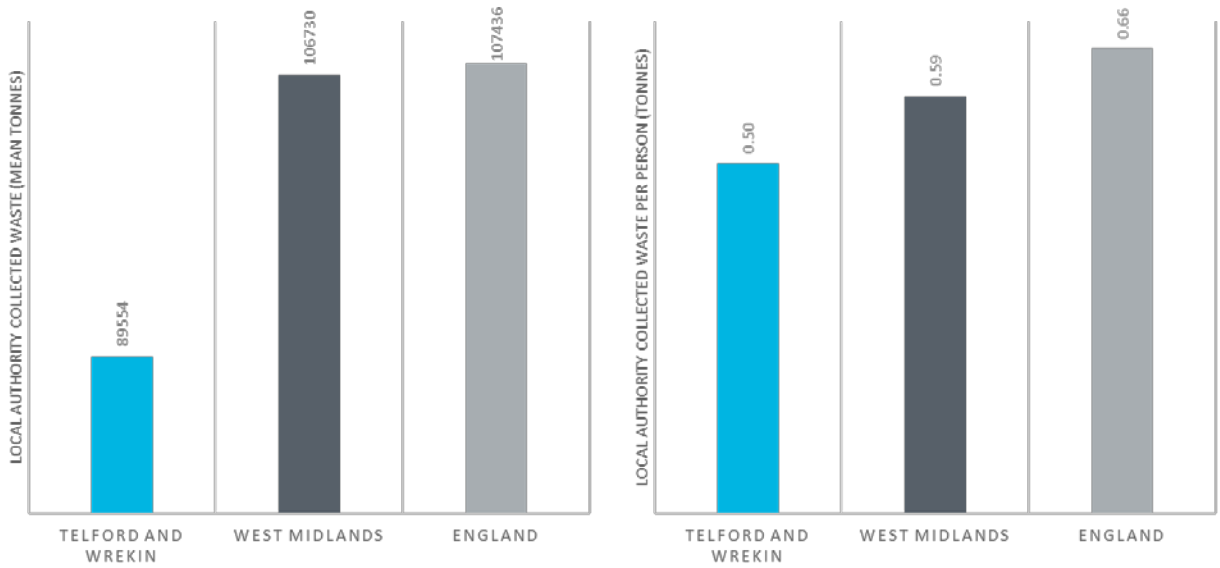
8.4 Baseline review

Waste generation

8.4.1 As Figure 8.1 shows, Telford and Wrekin Local Authority collect a significantly smaller amount of waste compared to the regional and national local authority averages. However, this data is likely to be skewed by the area's population, land-use and concentrations of activity. Hence, as revealed in Figure 8.1, the graph on the right (per person) reveals the

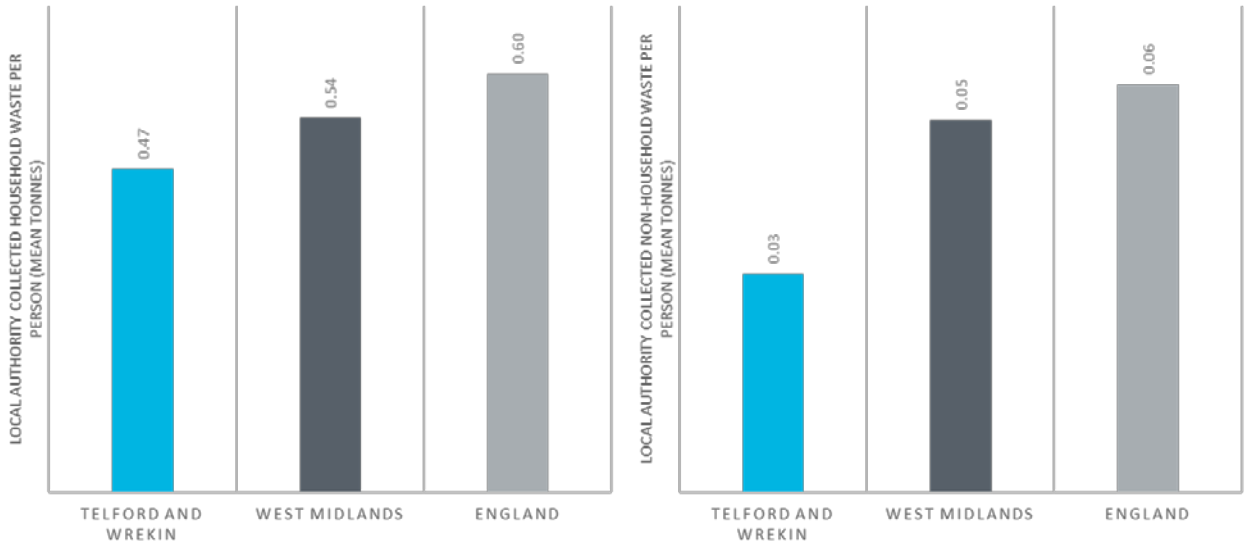
total waste collected per person; this still highlights a lower amount of waste produced per person in the Telford and Wrekin Borough, but the disparity between national and regional figures is greatly reduced.

Figure 8.1: Local Authority collected waste- total (left) and per person (right). Source: DEFRA, 2019.



8.4.2 Figure 8.2 splits down the waste data by household and non-household waste. It is evident that the area has lower, but not significantly lower household waste produced per person and produces significantly lower volumes of waste from non-household sources. It is important to note that this data does not include waste collection from other sources.

Figure 8.2: Local Authority collected household (left) and non-household (right) waste per person. Source: DEFRA, 2019.

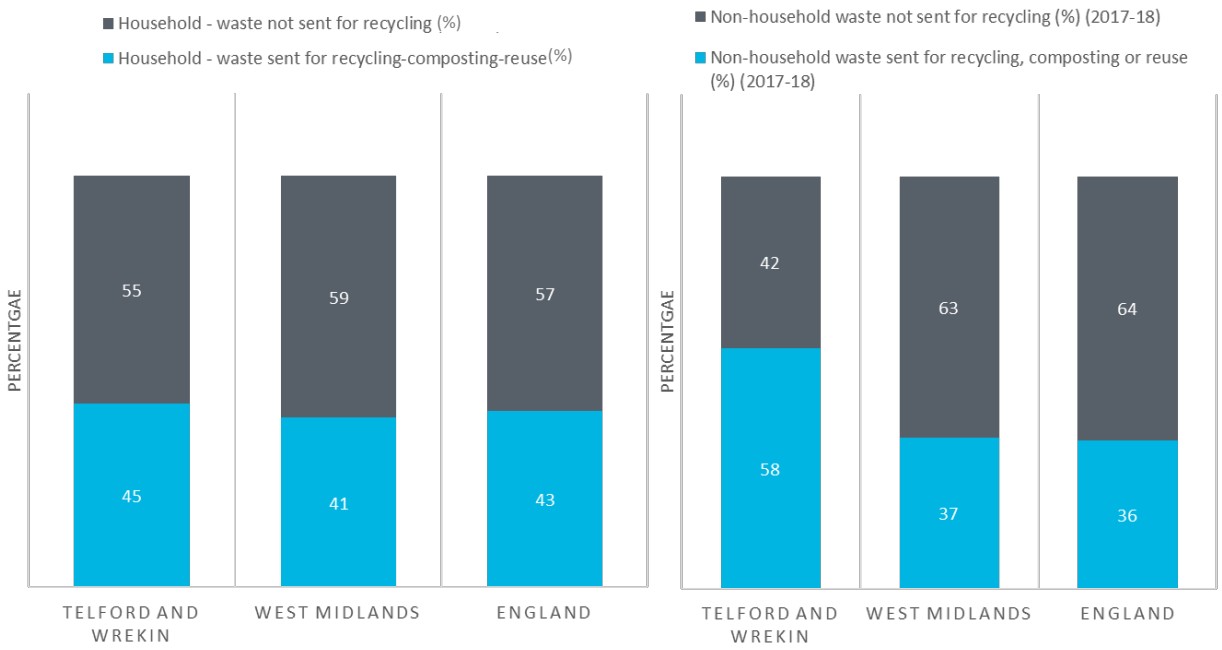


8.4.3 Focusing on waste generation over time, in total since 2014, there has been a 4% increase in waste collected by the Local Authority. There was a 5% increase in household waste and a 6% decrease in non-household waste over the same period.

Waste management

8.4.4 Figure 8.3 shows, when focusing on household waste, the Borough has slightly higher rates of recycling/composting/reuse than regional and national averages. The figures for non-household rates indicate that West Midlands has higher recycling/composting/reuse rates than national figures, and that Telford and Wrekin has significantly higher rates.

Figure 8.3: Household (left) and non-household (right) waste processing data. Source: DEFRA, 2019 (left) and 2018 (right).



8.4.5 There are two household waste recycling centres in the Borough, located at Haleswood in Telford and Hortonwood in Donnington.

Trends and future baseline

8.4.6 The Borough produces less waste per person than regional and national figures, meaning the processing is a smaller task for the Borough than surrounding areas. This could have the effect of freeing up more resources for making the process more environmentally friendly and efficient.

8.4.7 Sustainability is a key topic in current affairs and recycling rates are likely to be a key area of interest in the future, meaning that the Borough will be expected to improve in this area in line with national goals. Further to this, recent scandals involving the export of recycling are likely to create greater pressures to process waste within the country of origin.

8.5 Key Issues

8.5.1 Key policies for the area aim to reduce the waste produced, process it in a more environmentally friendly way and maximise energy production and overall efficiency from the entire process.

8.5.2 Literature reinforces the importance of waste management which is as environmentally friendly as possible, acknowledging the importance of this and its links to human health and wellbeing.

8.5.3 The Borough has a significantly lower than average overall waste production, with a moderately lower rate when the figure is a factor of the population.

8.5.4 The Borough produces significantly less non-household waste per person than regional and national averages. Of this waste, recycling/composting/reuse rates are marginally higher than regional and national equivalents.

8.6 Scoping Outcome

8.6.1 Considering the key issues discussed above it is proposed that the topic of waste should be **SCOPED IN** to the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Minimise waste generation and support the circular economy by implementing the waste hierarchy.	• Reduce waste generation associated with new development. • Promote the use of secondary materials. • Support the management of waste close to sources of generation. • Ensure that negative health impacts associated with waste management are avoided.

9. Climate Change Adaptation

9.1 Introduction

9.1.1 There is general consensus that some degree of climate change is already 'locked in', and this can be attributed to human activity over the last 150 years in particular. Climate change adaptation requires actions which serve to mitigate the adverse effects of such changes to climatic and weather patterns.

9.1.2 Planning for climate change resilience is a key aspect of planning for climate change adaptation. Climate change resilience is also a highly cross-cutting topic, reflecting the breadth of activities and assets that will be affected by climate change. Such complexity makes building resilience challenging and requires a holistic, flexible and cross-cutting approach to development and planning. It is paramount to understand how systems function and interact, and rethink how areas can be more flexible and adaptable to change. It also offers a great opportunity, as resilience calls for integrated interventions that can produce multiple co-benefits. For example, green infrastructure not only reduces vulnerability to the shocks of heatwaves and flooding, but also improves air and water quality, as well as public health and wellbeing of residents.

9.1.3 Within the United Kingdom there is a primary definitive source of information on the issues of relevance to Telford and Wrekin, namely the iterative process of the United Kingdom government preparing and regularly updating a Climate Change Risk Assessment, followed by a review undertaken by the CCC's Adaptation Sub Committee (ASC), under a regime established by the Climate Change Act.

9.1.4 This section provides a strategic review of the policy context, literature, and baseline position in relation to these important factors.

- Flood Risk
- Other climate change impacts

9.2 Context review

International

9.2.1 Climate Adaptation is included in the United Nations' Sustainable Development Goals (UN SDGs), and the United Kingdom wishes to demonstrate leadership in the delivery of these goals. As a result, the Greening Government Commitments state that: "Climate resilience planning and mitigation shall be incorporated at all business levels. Strategic climate impact risk mitigation shall be embedded in strategic programmes and plans including estate rationalisation and disposal. Similarly, climate mitigation and adaptation measures shall be incorporated into projects to ensure deliverables are climate resilient. Where climate risks are identified, appropriate adaptation actions shall be undertaken".

National

9.2.2 Key messages from the **National Planning Policy Framework**[74] (NPPF) include:

- Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as

[74] MHCLG (2019) National Planning Policy Framework [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.

- Inappropriate development in areas at high risk of flooding should be avoided by directing development away from areas of highest risk (whether existing or future).
- Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources.
- Plans should take account of the effects of climate change in the long term, taking into account a range of factors including flooding. Adopt proactive strategies to adaptation and manage risks through adaptation measures including well planned green infrastructure.
- Plans should reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbate the impacts of physical changes to the coast.

9.2.3 A second port of call is the NPPF (2019) the Planning Practice Guidance (PPG), paragraph 148 identifies the objective as being to "minimise vulnerability and improve resilience" and highlights the central importance of achieving this objective in respect of flood risk. Paragraph 149 then sets out further detail, identifying the need to take into account:" the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures… [and] support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure."

- *With regards to the PPG, the most relevant part of the section on Climate Change which presents the following bullet point list of 'examples' of ways local planning can support adaptation:*
- *"Considering future climate risks when allocating development sites to ensure risks are understood over the development's lifetime;*
- *Considering the impact of and promoting design responses to flood risk for the lifetime of the development;*
- *Considering availability of water and water infrastructure for the lifetime of the development and design responses to promote water efficiency and protect water quality;*
- *Promoting adaptation approaches in design policies for developments and the public realm relevant."*

9.2.4 Focusing on infrastructure, the National Infrastructure Commission (NIC) published the National Infrastructure Assessment (2018), which identified the key national challenges, and the government is developing a National Infrastructure Strategy. The NIC also published two key reports in 2019:

- Strategic Investment and Public Confidence – this report is clear that "the regulatory system has not adequately addressed societal interests: it needs to work more effectively to achieve net zero greenhouse gas emissions by 2050, transition to full-fibre digital networks, and manage the increasing risks of floods and drought." It calls for a much more coordinated approach, explaining that: "The current system leaves strategy primarily to infrastructure owners and providers. But they may not be best placed to assess the coming challenges, and they do not have the right incentives to build the right infrastructure to address them… There are some good examples of the system delivering strategic, long-term investment, however in general the system is not designed to deliver this… [R]egulators should demonstrate how they have taken consideration of the strategic vision of… local government..."

- Resilience Study Scoping Report - includes a section on 'Resilience in the planning system', although the focus is on Nationally Significant Infrastructure Projects (NSIPs) more so local infrastructure.

9.2.5 One of the three overarching objectives of the NPPF is an environmental objective to 'contribute to protecting and enhancing our natural, built and historic environment' including by 'mitigating and adapting to climate change' and 'moving to a low carbon economy.' 'The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

9.2.6 Focusing on planning legislation, the **Planning and Compulsory Purchase Act 2004**, which governs the preparation of Local Plans, requires that the Local Plan, taken as a whole, includes "policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change."

9.2.7 The **Climate Change Act Regime** requires the Government to present to Parliament an assessment of the climate change risks for the UK every five years. Following the publication of each Change Risk Assessment, the Government must lay out its objectives, policies and proposals to address the climate change risks and opportunities. The second National Adaptation Programme (NAP2), setting out these objectives, policies and proposals, was published in 2018.

9.2.8 The ASC is required by the Act to assess the NAP and present progress reports. The most recent report was published in 2019, presenting a key diagram (see Figure x below) concluding as follows:

9.2.9 "Leaving adaptation responses to local communities and individual organisations without a strategic plan is not a strategy to manage the risks from climate change. Climate change impacts and adaptation are associated with market failures, and institutional or behavioural barriers that require Government intervention. These barriers are caused partly by adaptation requiring numerous interactions through time and between communities, regions, and economic sectors (…). For individual businesses, organisations or the public, it is extremely challenging to build awareness and take adaptation actions at a scale that is effective and efficient, and that accounts for social costs and benefits (…). These factors mean that adaptation action will not be successful without a strong, integrated, strategic national plan. Given the piecemeal nature of the NAP, the gaps within it, the decline in resources and local support, and the lack of progress in managing risks, the Committee's view is that the Government's approach of mainstreaming adaptation has, so far, not succeeded in putting in place a coherent and coordinated plan, nor the resources to enable the required actions to be carried out."

9.2.10 The ASC report (2019) presents 12 recommendations, most of which are of limited direct relevance to Local Plans. However, the previous ASC report (2017) made the following notable recommendation: "The Government should review the effectiveness of the land-use planning system in achieving reductions in greenhouse gas emissions from buildings and transport, and enhancing the resilience of communities and the built environment to the impacts of climate change. The review should consider both strategic and local land-use allocation, and building and infrastructure design."

9.2.11 The **Committee of Climate Change** published a 2012 report entitled 'How Local Authorities Can Reduce Emissions and Manage Climate Change Risk'[75] which emphasises the crucial role councils have in helping the UK meet its carbon targets and preparing for the impacts of

[75] CCC (2012) 'How local authorities can reduce emissions and manage climate risks' [online] available at: https://www.theccc.org.uk/publication/how-local-authorities-can-reduce-emissions-and-manage-climate-risks/

climate change. It outlines specific opportunities for reducing emissions and highlights good practice examples from local authorities.

9.2.12 The **UK Climate Change Risk Assessment**[76] is published on a 5-yearly cycle in accordance with the requirements of the Climate Change Act 2008.

9.2.13 It required the Government to compile an assessment of the risks for the UK arising from climate change, and then to develop an adaptation programme to address those risks and deliver resilience to climate change on the ground. For both the 2012 and the 2017 UK Climate Change Risk Assessment, the Adaptation Sub-Committee commissioned an evidence report containing six priority risk areas requiring additional action in the next five years:

- Flooding and coastal change risks to communities, businesses and infrastructure;
- Risks to health, well-being and productivity from high temperatures;
- Risk of shortages in the public water supply, and for agriculture, energy generation and industry;
- Risks to natural capital, including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity;
- Risks to domestic and international food production and trade; and
- New and emerging pests and diseases, and invasive non-native species, affecting people, plants and animals

9.2.14 The **Flood and Water Management Act (2010)**[77] sets out measures to ensure that risk from all sources of flooding, not just rivers and seas, are managed more effectively. This includes: incorporating greater resilience measures into the design of new buildings; utilising the environment in order to reduce flooding; identifying areas suitable for inundation and water storage to reduce the risk of flooding elsewhere; roll back development in coastal areas to avoid damage from flooding or coastal erosion; and creating sustainable drainage systems (SuDS).

9.2.15 Recent context also comes in the form of the **Court of Appeal Judgement *R (Friends of The Earth) V Secretary Of State For Transport And Others*** **i**n respect of expansion of capacity at Heathrow Airport by the addition of a third runway under the policy set out in the "Airports National Policy Statement: new runway capacity and infrastructure at airports in the south east of England" ("the ANPS"). The Court identified a fatal flaw in the process of preparing the ANPS, stating:

- "This relates to the legislative provisions concerning the Government's policy and commitments on climate change, in particular the provision in section 5(8) of the **Planning Act**, which requires that the reasons for the policy set out in the ANPS *"must … include an explanation of how the policy… takes account of Government policy relating to… climate change". We have concluded, in particular, that the designation of the ANPS was unlawful by reason of a failure to take into account the Government's commitment to the provisions of the* ***Paris Agreement*** *on climate change..."*

9.2.16 The requirement of the Planning Act referenced by the Court does not apply to the Scoping exercise; however, there are lessons to learn, nonetheless. Specifically, the judgement serves to indicate the importance of *explicitly* taking account of climate change commitments on the basis of an up-to-date understanding of everything that is "evidently material", as opposed to taking a narrow view.

9.2.17 Focusing on infrastructure, the National Infrastructure Commission (NIC) published the **National Infrastructure Assessment (2018)**, which identified the key national challenges,

[76] HM Government (2008): 'Climate Change Act 2008', [online] available at: http://www.legislation.gov.uk/ukpga/2008/27/contents
[77] Flood and Water Management Act (2010) [online] available at: http://www.legislation.gov.uk/ukpga/2010/29/contents

and the government is developing a National Infrastructure Strategy. The NIC also published two key reports in 2019:

Strategic Investment and Public Confidence – this report notes that *"the regulatory system has not adequately addressed societal interests: it needs to work more effectively to achieve net zero greenhouse gas emissions by 2050, transition to full-fibre digital networks, and manage the increasing risks of floods and drought."* It calls for a much more coordinated approach, explaining that:[78]

"The current system leaves strategy primarily to infrastructure owners and providers. But they may not be best placed to assess the coming challenges, and they do not have the right incentives to build the right infrastructure to address them (…). There are some good examples of the system delivering strategic, long-term investment, however in general the system is not designed to deliver this (…). [R]egulators should demonstrate how they have taken consideration of the strategic vision of (…) local government (...)."

9.2.18 Resilience Study Scoping Report - includes a section on 'Resilience in the planning system', although the focus is on Nationally Significant Infrastructure Projects (NSIPs) more so than on local infrastructure.[79]

Regional

9.2.19 The West Midlands Combined Authority has a Climate Plan which goes further than national commitments; with aims for a target to be 'carbon neutral' by 2041. The document sets out five key principles: to be inclusive in their approach, to boost resilience, to respect heritage, to build more places and more connectivity between them and to save energy and resources without reducing prosperity. It sets out actions based on policy, transport, infrastructure, industry and the environment in a short, medium and long term approach.

Local

9.2.20 **The Telford and Wrekin Flood Risk Management Strategy**[80] outlines Telford and Wrekin as a Lead Local Flood Authority in accordance with the 2010 Flood and Water Management Act. The strategy outlines a collaborative local framework which employs a full range of integrated approaches which manage the human and physical sides to pluvial and fluvial flooding; events which are likely to be more prevalent as a result of climate change. The document outlines a series of policies aimed at managing existing flood risk and mitigating any future risk in the short and long term.

9.2.21 **The Telford and Wrekin Local Plan** (2011-2031)[81] sets out policies relating to water management. This includes Policy ER12, which relates to flood risk management and stipulates a number of conditions which must be met for development to take place.

9.2.22 **The Sustainable Drainage Systems Handbook**[82] sets out the role of SuDS in achieving resilience to flood events across the West Midlands' seven Lead Local Flood Authorities by setting out processes needed to deliver efficient water management techniques and how this fits within the planning process.

9.3 Literature review

Climate change is likely to have profound impacts on health and wellbeing across the world

9.3.1 The WHO, 2020 states that climate change is the greatest threat to global health in the 21st century. Climate change has the ability to create health effects associated with extreme

[78] See nic.org.uk/publications/strategic-investment-and-public-confidence/
[79] See nic.org.uk/publications/resilience-study-scoping-report/
[80] Telford and Wrekin (no date) *LLFA Flood Risk Management Strategy,* Telford: Telford and Wrekin Council.
[81] Telford and Wrekin (2018) *Local Plan 2011-2031,* [online] https://apps.telford.gov.uk/downloads/localplan/Telford_and_Wrekin_Local_Plan_2011_2031_adopted_Jan_2018.pdf [23/6/2020].
[82] Telford and Wrekin (2019) *Sustainable Drainage Systems Handbook,* Telford: Arcadis Consulting.

weather events, outbreaks of infectious diseases, malnutrition and other non-communicable diseases.

9.3.2 The ability to adapt to a changing of climate is essential in maintaining human health. In 2015, the United Nations delivered 17 sustainable development goals[83], one of them being climate action.

The effects of flooding can severely affect people's mental health and wellbeing

9.3.3 Flooding has been found to increase psychological morbidity among participants who's homes have flooded. Approximately 20% of flood affected people experience greater depression, 28% greater anxiety and 36% greater post-traumatic stress disorder *(Waite et. al. 2017).*

9.3.4 The percentage of people whose homes have been flooded have mental health issues six times higher than those that have not been *(Public Health England, 2017).*

9.3.5 There is evidence that suggests the disruption of climatic events such as flooding can cause anxiety, depression, stress, trauma, poor sleep quality and post-traumatic stress disorder *(Berry et. al. 2010; Fritze et. al. 2008, Berry et. al. 2008, Waite et. al. 2017, Public Health England, 2017, Alderman et. a. 2013).*

9.3.6 *Du et. al. (2010)* reviews different scales health implications that occur once climatic events have taken place. Immediate health related can include drowning, injuries, hypothermia and animal bites. Medium term effects include infected wounds, complications of injury, communicable diseases and starvation. Longer term effects can include chronic disease, disability and mental health.

9.3.7 In emergency contexts, mental disorders can be considered a long- term psychological outcome which arises from conflicts, natural disasters and other environmental conditions *(Slekiene & Mosler 2019).*

Climate change can discourage outdoor recreation

9.3.8 People are less likely to exercise during extreme weather events and this can be a detriment to overall physical health. For example, extreme heat exposure causing heat exhaustion *(Berry et. al. 2010).*

9.3.9 Climate change can affect community's overall well – being by damaging physical environments where people socialise and come together for example public green spaces and public squares *(Berry et. al. 2010).*

The effects of climate change are often felt more by deprived communities

9.3.10 Climate change particularly affects people that are within low-income and disadvantaged communities as they are considered vulnerable to the effects of climate change (*Berry et. al. 2010; Fritze et. al. 2008, Ahern et. al. 2005*)

9.3.11 People whose lives depend on the state of the environment such as farmers or people who work within agricultural industry are considered vulnerable and disadvantaged, for example in Australia, rural areas experience severe weather events such as prolonged droughts and this can have negative effects on the agricultural industry (*Berry et. al. 2009*).

9.4 Baseline review

9.4.1 Climate change is likely to bring an overall increase in temperatures, and when focusing on weather events, extremities can be expected. This includes increased prevalence and severity of storms, cold weather events, hot weather events, intense rainfall and extreme winds. Summers are likely to become hotter and drier and winters warmer and wetter; all

[83] https://sustainabledevelopment.un.org/?menu=1300

seasons will be more likely to experience both short and longer-term extreme weather events.

9.4.2 The vulnerabilities to climate change are dependent upon land use. Urban communities are at a significantly higher vulnerability to flooding due to the density of assets and potential for disruption to affect activities.

9.4.3 Critical infrastructure (including transport systems, communications systems and healthcare services) being affected by flooding has widespread implications which mean that areas surrounding these are at a heightened vulnerability.

9.4.4 In rural areas which may be susceptible to flood risk vulnerabilities are not equivalent due to low population and asset densities. Agricultural land can be vulnerable where crops may be destroyed by extreme weather events (ie. Drought or flooding), however the land also plays an important role in flood zoning (where agricultural uses can be more flexible). Flooding can also bring both positive impacts of fertile sedimentary deposits as well as negative impacts of contamination of land.

9.4.5 The Borough's approach to flood risk has divided the area up into four catchments (Rural West, Rural East, North Telford and South Telford). Whilst catchments can be used indicatively to predict flood risk and inform management, the public sewerage network in the area can result in surplus water being channelled between catchments.

9.4.6 Figure 9.1 highlights the numbers of properties within different flood zones. Flood Zones: 2-medium probability (1-100 / 1-1000 year flood risk). 3a- high probability (1-100+ year flood risk). 3b- functional floodplain (1-20 year flood risk). It shows that, in terms of properties, key vulnerabilities lie in the more urban areas of Telford North and Telford South. The data suggesting that there are a higher number of properties located within the zone 3b is a cause for concern, however due to the flood risk being very high and flood event prevalence being frequent, properties in the area may have features and processes which assist with adaptation, hence lowering their vulnerabilities.

9.4.7 Figure 9.2 echoes fluvial flood risk patterns which highlights higher numbers of vulnerable properties in more built-up areas. The heightened risk is partly due to the lower rates of permeable surfaces in urban areas alongside greater concentrations of properties.

Figure 9.1: Fluvial flood risk and vulnerable properties (data taken from Telford and Wrekin Flood Risk Management Strategy).

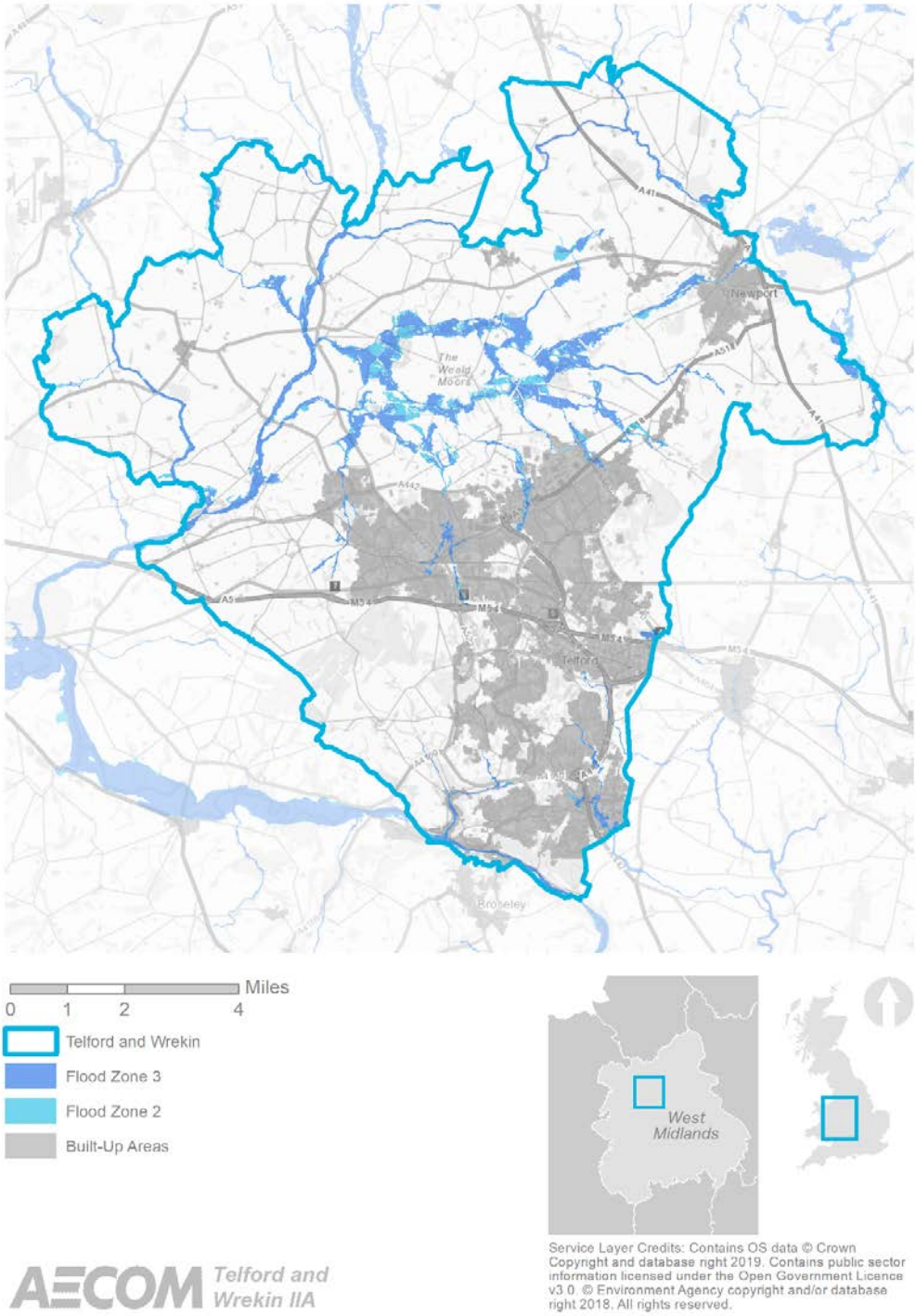
	Flood Zone 2	Flood Zone 3a	Flood Zone 3b
Telford North Predominantly urban	**667** properties at risk	**106** properties at risk	**304** properties at risk
Telford South Predominantly urban	**119** properties at risk	**130** properties at risk	**12** properties at risk
Rural West Predominantly rural, agricultural uses and scattered villages	**2** properties at risk	**15** properties at risk	**0** properties at risk
Rural East Predominantly rural and agricultural uses	**16** properties at risk	**38** properties at risk	**0** properties at risk
Total	**805**	**281**	**316**

Figure 9.2: Pluvial flood risk and vulnerable properties (data taken from Telford and Wrekin Flood Risk Management Strategy).

	Medium Risk 1 in 100	High Risk 1 in 30
Telford North Predominantly urban	**1356** properties at risk	**742** properties at risk
Telford South Predominantly urban	**1024** properties at risk	**762** properties at risk
Rural West Predominantly rural, agricultural uses and scattered villages	**29** properties at risk	**26** properties at risk
Rural East Predominantly rural and agricultural uses	**210** properties at risk	**63** properties at risk
Total	**2619**	**1593**

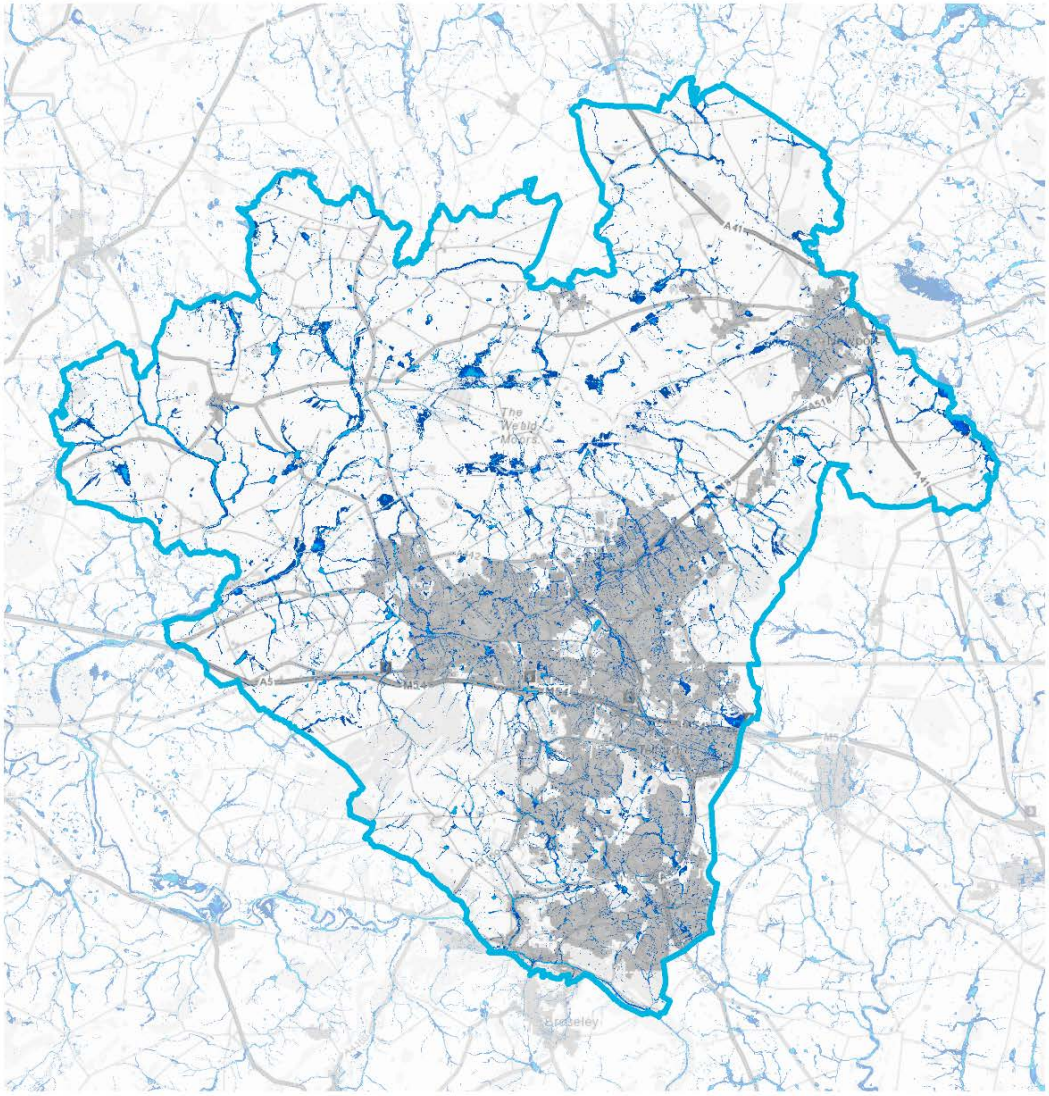
9.4.8 As Figure 9.3 shows, there are some significant areas at risk of flooding across the borough. The Weald Moors in the central-northern area of the Borough has some very large areas at heightened risk of flooding, with other areas broadly following the watercourses in the Borough. Where flood risk and vulnerability are separated out, risk in relatively sparsely populated areas (such as around The Weald Moors) does not commonly translate to high levels of vulnerability. Small areas of flood risk in vulnerable areas can have extremely damaging effects, as shown by recent (Winter 2019/20) flood events in Ironbridge in the south of the Borough where the areas of flood risk are relatively small, but the effects of flooding were significant. Hence, any area of flood risk must be fully assessed and understood in relation to locally specific vulnerabilities.

Figure 9.3: Fluvial flood risk map.



9.4.9 Figure 9.4 shows risk of flooding from surface water across the Borough. Large areas at risk are broadly found in the more rural areas of the Borough, whilst smaller but more regular areas at risk are found in the more built-up areas. Whilst SuDS are prevalent in modern developments, it is important to note that a loss of natural flood mitigation features (trees, permeable surfaces and natural drainage) is likely to dramatically increase the likelihood of flooding from surface water inundation, especially during events of extreme rainfall.

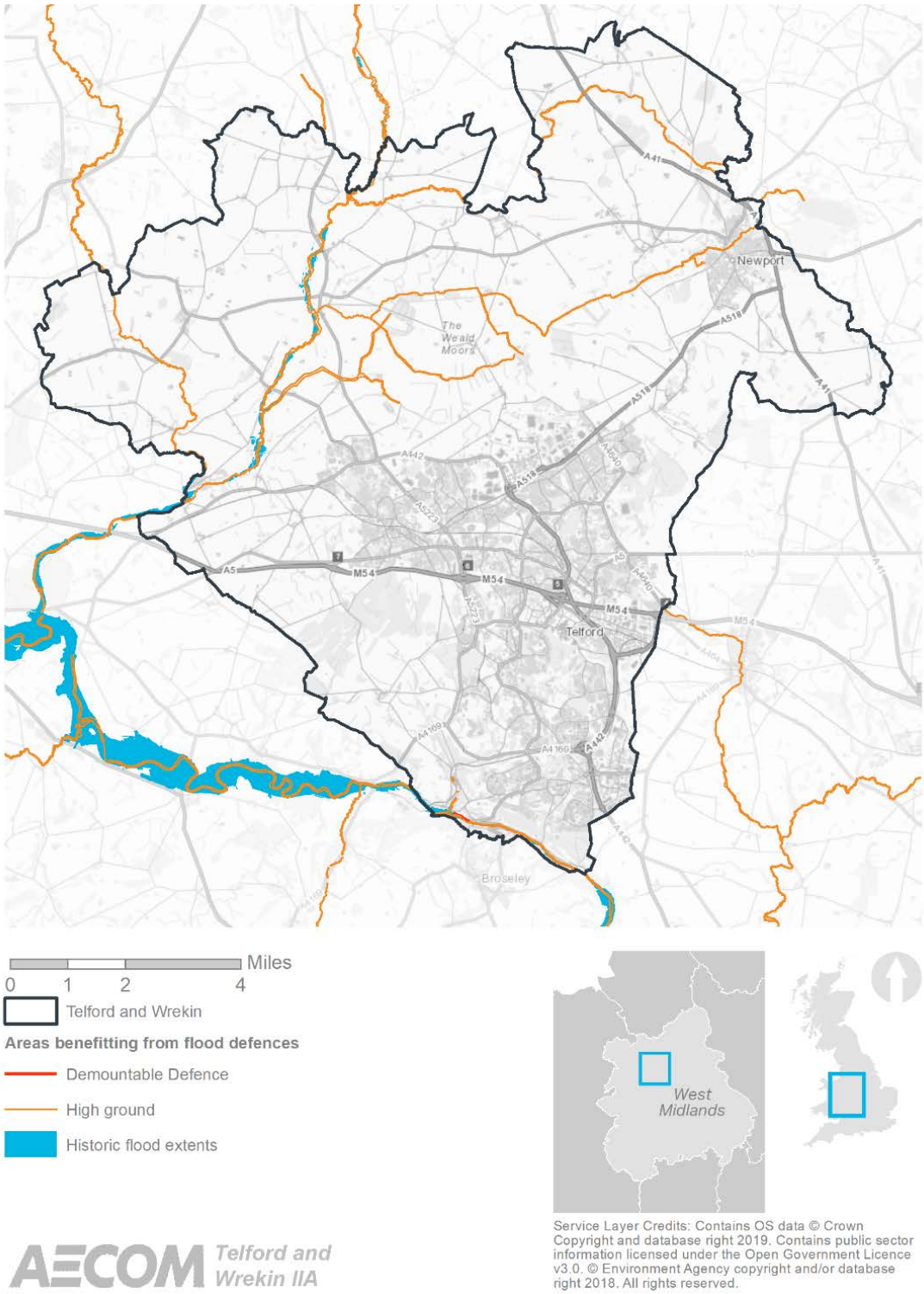
Figure 9.4: Areas at risk from surface water flooding. *This data is not to be used to assess flood extents for areas any more detailed than a 1:10,000 scale would reveal. It is appropriate to show high level information, but not assess the suitability of a site. For further information see footnote [84].*



[84] https://data.gov.uk/dataset/d5ca01ec-e535-4d3f-adc0-089b4f03687d/risk-of-flooding-from-surface-water-suitability

9.4.10 Recent flood events in Ironbridge and Coalbrookdale to the south of Telford along the River Severn highlight the area's vulnerabilities to extreme rainfall events leading to fluvial flooding. The areas have seen multiple flood events over 2019/20. Flood barriers have been installed in the past however issues relating to drainage systems being inundated with flood water from overflowing rivers has led to issues. Extreme flood events which could breach or overwhelm flood defences also have the potential to lead to high volumes of water suddenly inundating surrounding areas. Figure 9.3 shows historic floods have affected the River Severn to the south of the Borough and the River Tern running through the Borough's North West. The majority of Environment Agency flood defences are formed of high ground around the rivers as well as some demountable defences near Iron Bridge and Coalbrookdale.

Figure 9.5: Historic flood extents and flood defences (note- as this is a national dataset, the data is not guaranteed to include all flood extents and defences, especially the most recent schemes).



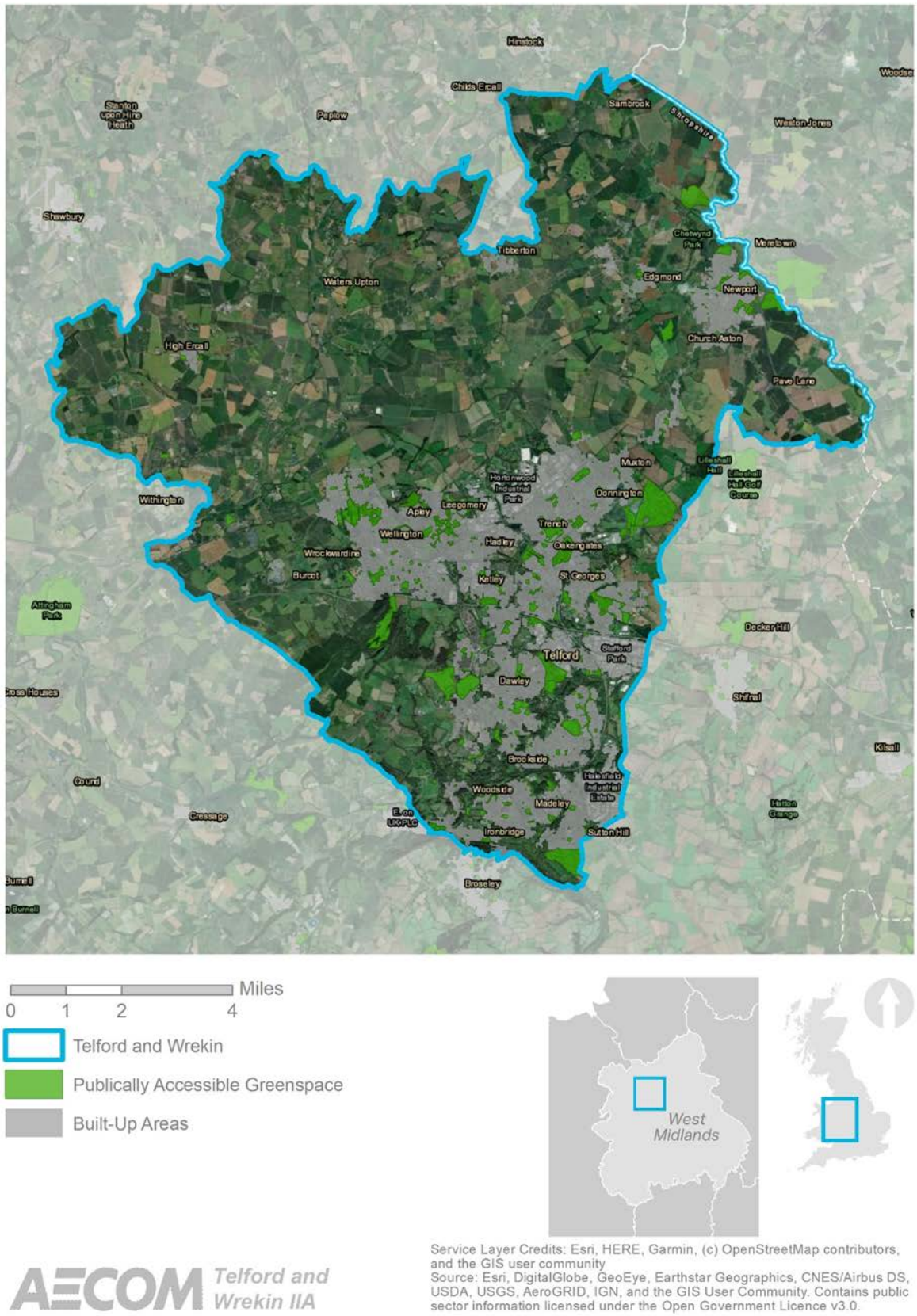
9.4.11 In terms of local and national government for business, government grants and business rate relief schemes have been made available in response to recent extreme flood events. In terms of assistance for residents and personal property, council tax relief and grants are available. Telford and Wrekin is part of the multi-agency River Severn Partnership which is seeking to develop collaborative and targeted responses which assist in mitigating the effects of flooding along the route of the river. £40 million has been allocated from the government to schemes along the route in recent months (July 2020) aimed at accelerating the delivery of flood risk management schemes.

Green infrastructure

9.4.12 Green infrastructure plays an important role in helping to manage the effects of climate change's warming and flooding effects.

9.4.13 Where data was not available for all greenspace in the Borough, the satellite image (Figure 9.6) highlights the rural nature of the majority of land. The more built-up areas do have accessible greenspace which will help to mitigate flood risk and assist with cooling. That said, the extent to which urban green spaces contribute towards cooling and reduced flood risk (through infiltration, and transpiration and interception from trees) depends on the characteristics of the space. Conversely, those areas which are built-up are commonly more susceptible to flooding due to a lack of permeable surfaces and rapid surface run-off rates. Though, again the characteristics of the area are important risk factors, as features such as SuDS and integrating soft/hard surfaces into design can make a big difference in terms of flood risk.

Figure 9.6: Green infrastructure map



Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Contains public sector information licensed under the Open Government Licence v3.0.

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Storms

9.4.14 One of the most severe impacts of climate change on critical infrastructure is the increase in the frequency and severity of storms, leading to more extreme erosion events.

9.4.15 The impacts of erosion hazards are of regional and national importance as they are costly, wide ranging, and critical to the vulnerability of critical infrastructure assets. In the UK storm and erosion hazards cause an additional £336 million a year in flood damage, £238 million a year in water pollution, and £132 million a year in water treatment and maintenance for drainage networks.[85]

9.4.16 Severe weather events such as storms, winds and very heavy rain cause considerable damage to critical infrastructure such as transport networks, bridges, flood defences, electricity pylons, sewage networks, and can also damage parks and ecosystems. They increase the needs of vulnerable people requiring services at a time when transport and other services are disrupted and less able to provide assistance. They also increase insurance costs, as they account for 25% of valid subsidence insurance claims.[86]

Trends and future baseline

9.4.17 Future development is likely to be within or adjacent to existing urban areas in the Borough (given national and existing Local Plan Policy). Hence where flood risk vulnerabilities are heightened in and around these areas, it is important to ensure that reductions in permeable surfaces are mitigated with appropriate flood risk management techniques. These could include SuDS throughout urban areas and the inclusion of natural design features which could serve to decrease surface-water runoff rates.

9.4.18 Lifestyles and business activities are likely to have to become more resilient to the increasing risks associated with extreme weather events, this will require widespread and systemic changes to transport networks, tourism, sporting, agriculture, work patterns and funding, to name a few.

9.5 Key Issues

9.5.1 The following key issues emerge from the scoping exercise:

- National, regional and local policy reinforces the need for all aspects of life to be able to adjust to the challenging circumstances which climatic change will present.
- Climate change and its effects will have dramatic influence upon all aspects of life, including social, economic and environmental factors.
- Urban areas are more vulnerable to both fluvial and pluvial flooding in Telford and Wrekin.
- Recent persistent flood events have raised specific concerns about vulnerabilities in the south of the Borough, along the River Severn.

9.6 Scoping Outcome

9.6.1 Considering the key issues discussed above it is proposed that the topic of climate change resilience should be **SCOPED IN** to the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

85 University of Liverpool. 2020. Erosion hazards in river catchments: How resilient is critical infrastructure to climate change? https://www.liverpool.ac.uk/study/postgraduate-research/studentships/erosion-hazards/
86 University of Liverpool. 2020. Erosion hazards in river catchments: How resilient is critical infrastructure to climate change? https://www.liverpool.ac.uk/study/postgraduate-research/studentships/erosion-hazards/

IIA objective	Assessment questions (will the option/ proposal help to...)
Adapt and become more resilient to the impacts of climate change, including the effective management of flood risk, and preparing for more extreme weather events.	• Direct development away from areas of greatest risk of flooding, unless sufficient mitigation can be implemented. • Ensure that development does not increase flood risk on site or downstream? • Implement multifunctional green infrastructure? • Ensure that critical infrastructure is resilient to the effects of climate change? • Avoid vulnerabilities to flood risk, considering locally specific circumstance? • Locate development in appropriate locations, or on sites where appropriate mitigation can be made?

10. Climate Change Mitigation

10.1 Introduction

10.1.1 Climate change has been identified as one of the most important issues facing the world. It is widely accepted that there is a link between human activities and an increase in global temperature. Whilst some changes are already 'locked-in'; it is still thought possible that more extreme changes to the climate (in the longer term) can be minimised. However, this requires coordinated, quick and radical action to reduce greenhouse gas emissions.

10.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following important factors.

- Renewable Energy Generation
- Greenhouse Gas Emissions
- Energy Consumption

10.2 Context review

International

10.2.1 **The Paris Agreement on Climate Change (2016)** unites many of the world's nations in a single agreement on tackling climate change. The UK is a signatory and has pledged actions to help mitigate climate change.

10.2.2 The Paris Agreement's central aim is to keep a global temperature rise well below 2 degrees Celsius (above pre-industrial levels) and to limit the temperature increase even further to 1.5 degrees Celsius. A range of actions are proposed to support this aim.

National

10.2.3 The **UK Climate Change Act**[87] was passed in 2008 and established a framework to develop an economically credible emissions reduction path. It also highlighted the role it would take in contributing to collective action to tackle climate change under the Kyoto Protocol, and more recently as part of the UN-led Paris Agreement.

10.2.4 The Climate Change Act commits the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050.

10.2.5 Key messages from the National Planning Policy Framework[88] (NPPF) include:

- One of the three overarching objectives of the NPPF is an environmental objective to 'contribute to protecting and enhancing our natural, built and historic environment' including by 'mitigating and adapting to climate change' and 'moving to a low carbon economy.' 'The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure

[87] HM Government (2008): 'Climate Change Act 2008' [online] available at: http://www.legislation.gov.uk/ukpga/2008/27/contents
[88] MHCLG (2019) National Planning Policy Framework [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

10.2.6 The **UK 2070 Commission's Final Report** on regional inequalities details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes an explicitly spatial and equitable transition to zero-carbon. Mitigation will be assisted through more efficient transit networks which transform public transport network between, within and beyond cities.

10.2.7 The Department for Business, Energy and Industrial Strategy has recently consulted upon a policy options document called **Heat Networks: Building a Market Framework (2020)**. The document clearly sets out the Government's thinking in relation to the decarbonisation of heat, suggesting that district heat networks will form an important part of the future mix. The consultation seeks views on policy options for regulating heat networks to protect consumers and ensure fair pricing, while supporting market growth and the development of low-carbon networks.

Regional

10.2.8 In June 2019, the West Midlands Combined Authority declared a climate emergency and vowed to take rapid action to cut harmful emissions.

10.2.9 **The West Midlands Local Industrial Strategy**[89] sets out to continue the reduction in carbon emissions which it has seen in the latter half of the last decade. A specific focus in the area will be on electric vehicles and battery development, helping to decarbonise transport solutions.

10.2.10 **The Marches Local Industrial Strategy**[90] outlines the importance of ensuring zero carbon living is a central pillar in future economic security.

10.2.11 **The Energy Strategy for the Marches Local Enterprise Partnership**[91] sets out priorities for the role energy can play in economic growth, these focus on: smart control, innovation in agricultural technologies, sufficient and reliable supply, development in key areas of the low carbon economy, local renewable energy supply and addressing fuel poverty.

Local

10.2.12 In 2019, Telford and Wrekin Council declared a climate emergency, with an aim for its activities and operations to be 'carbon neutral' by 2030.

10.2.13 **The Telford and Wrekin Local Plan** (2011-2031)[92] sets out policies relating to environmental resources, within this theme comes Policy ER1 (which relates to renewable energy within the area. It sets out how development is supported where it is low carbon, well adapted to climate change impacts and where energy conservation is considered and designed at the earliest possible stages (through the use of energy efficiency management systems).

10.2.14 Policy C1 (Promoting alternatives to the car) is the key sustainable transport policy of the adopted Local Plan, focussing on reducing emissions from vehicles by delivering new and enhanced walking and cycling infrastructure through the development process, and improving public transport services.

[89] West Midlands CA (2019) *Local Industrial Strategy,* West Midlands: HM Government.
[90] The Marches (2019) *Local Industrial Strategy (draft),* [online] https://www.marcheslep.org.uk/download/marches_local_industrial_strategy/Marches-Local-Industrial-Strategy-Final-draft-20.12.19.pdf [23/6/2020].
[91] The Marches (2018) *Energy Strategy for the Marches Local Enterprise Partnership,* [online] https://www.marcheslep.org.uk/download/energy/Marches-Energy-Strategy.pdf [23/6/2020].
[92] Telford and Wrekin (2018) *Local Plan 2011-2031,* [online] https://apps.telford.gov.uk/downloads/localplan/Telford_and_Wrekin_Local_Plan_2011_2031_adopted_Jan_2018.pdf [23/6/2020].

10.2.15 **The Telford and Wrekin Becoming Carbon Neutral Action Plan**[93] outlines the initial steps which the council are taking to achieve the goal of 'carbon neutrality' by 2030, including schemes which are currently in place as well as propositions for the future.

10.2.16 **The Telford and Wrekin Cycling and Walking Strategy**[94] sets out a long term plan to encourage residents and visitors to integrate more active travel choices into their movements. The document explains the associated benefits to public health and wellbeing, physical activity, congestion, the economy and the environment.

10.2.17 **The Telford and Wrekin Local Transport Plan**[95] outlines a vision which aims to accommodate increasing levels of mobility whilst not increasing carbon emissions, encourage cycling and walking and boosting public transport.

10.2.18 **The Telford and Wrekin Sustainable Modes of Travel Strategy**[96] aims to encourage children to travel to school via more sustainable means. It prioritised active means of travel, with journey pooling set out as another preferential approach.

10.3 Focused literature review

Fuel poverty has detrimental effects upon health

10.3.1 Fuel poverty and domestic energy efficiency causes many health and wellbeing effects on a large portion of UK households (Healy, 2013).

10.3.2 The Warm Front Scheme conducted by Green and Gilbertson (2008) assessed the mental health impact on adults, concluding that anxiety and depression were strongly associated.

10.3.3 In fact mental health issues such as anxiety and depression are strongly associated with fuel poverty. Difficulty with paying fuel bills results in less fuel consumption to achieve improved temperatures and thermal comfort.

10.3.4 Green and Gilbertson (2008) reviewed that less mould in households reduces respiratory conditions. Better living conditions have significant impacts on health and that increased temperatures are linked to better health and fewer winter deaths.

The most vulnerable people in society are typically affected by fuel poverty

10.3.5 Fuel poverty is due to lower income and expensive forms of household heating and energy efficient housing (Lawlor, 2001).

10.3.6 Damp, mould and winter low indoor temperatures are linked with mental and physical health implications (Green and Gilbertson, 2008). In particular children are more vulnerable to damp conditions.

10.4 Baseline review

Renewable Energy Generation

10.4.1 Figure 10.1 shows the capacity of renewable energy generation by source per household in Telford and Wrekin, alongside Regional and National averages. It is evident that whilst the Borough generates higher than average energy per household than regional figures, the national figure is significantly higher. This, however, is often the product of large renewable energy schemes in specific locations which distort the national average.

10.4.2 Telford and Wrekin's key renewable energy generating schemes come from landfill gas, sewage gas, anaerobic digestion and photovoltaic units. In terms of where the Borough generates higher than regional and national average; landfill gas, anaerobic digestion and

[93] Telford and Wrekin (2019) *Becoming Carbon Neutral Action Plan,* [online] https://democracy.telford.gov.uk/documents/s4793/Becoming%20Carbon%20Neutral%20Action%20Plan.pdf [23/6/2020].
[94] Telford and Wrekin (2017) Cycling and Walking Strategy, Telford: Telford and Wrekin Council.
[95] Telford and Wrekin (2011) *Local Transport Plan*, Telford: Telford and Wrekin Council.
[96] Telford and Wrekin (2016) *Sustainable Modes of Travel Strategy 2016-2021,* [online] https://www.telford.gov.uk/downloads/file/1769/sustainable_modes_of_travel_strategy [23/6/2020].

photovoltaics are important. Areas which could be improved on to diversify generating sources are plant biomass and municipal solid waste. Hydro and onshore wind are dependent upon local topography and water courses and may not be appropriate in the Telford and Wrekin Borough.

10.4.3 Figure 10.2 shows how the majority of renewable energy in the Borough comes from solar panels, with the next largest sources (landfill gas and anaerobic digestion) being significantly smaller proportions.

10.4.4 Since 2014, the Borough has seen an increase of 359% in photovoltaic generation capacity and a 358% increase in anaerobic digestion generation capacity. Generation from onshore wind, sewage gas and landfill gas has remained the same.

Figure 10.1: Graph showing the energy generating capacity per person of Local Authority renewable energy generation by source. Source of data: DBEIS, 2019.

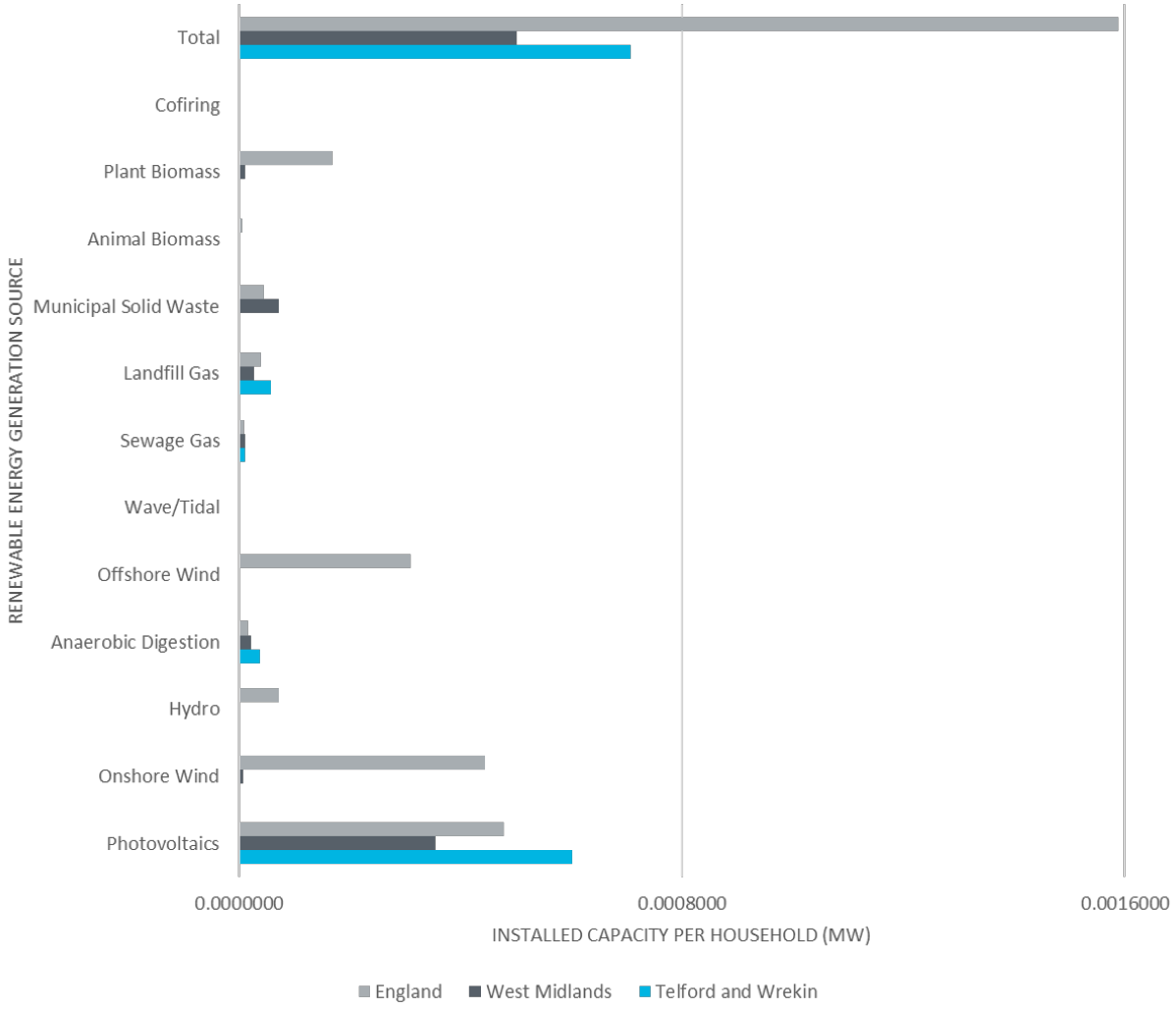
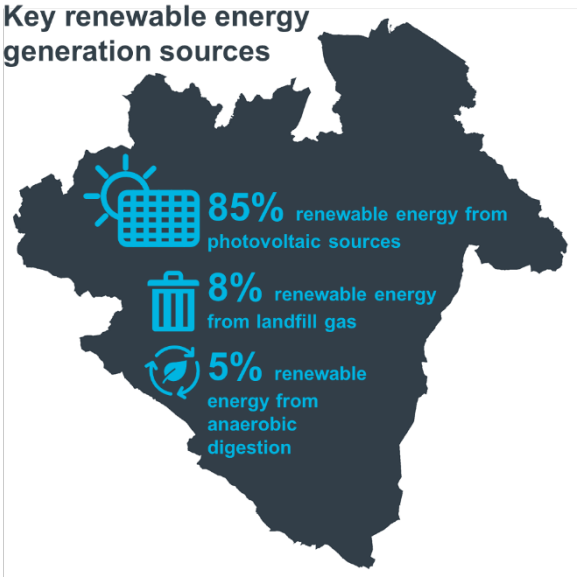


Figure 10.2 Key renewable energy generation sources for Telford and Wrekin.

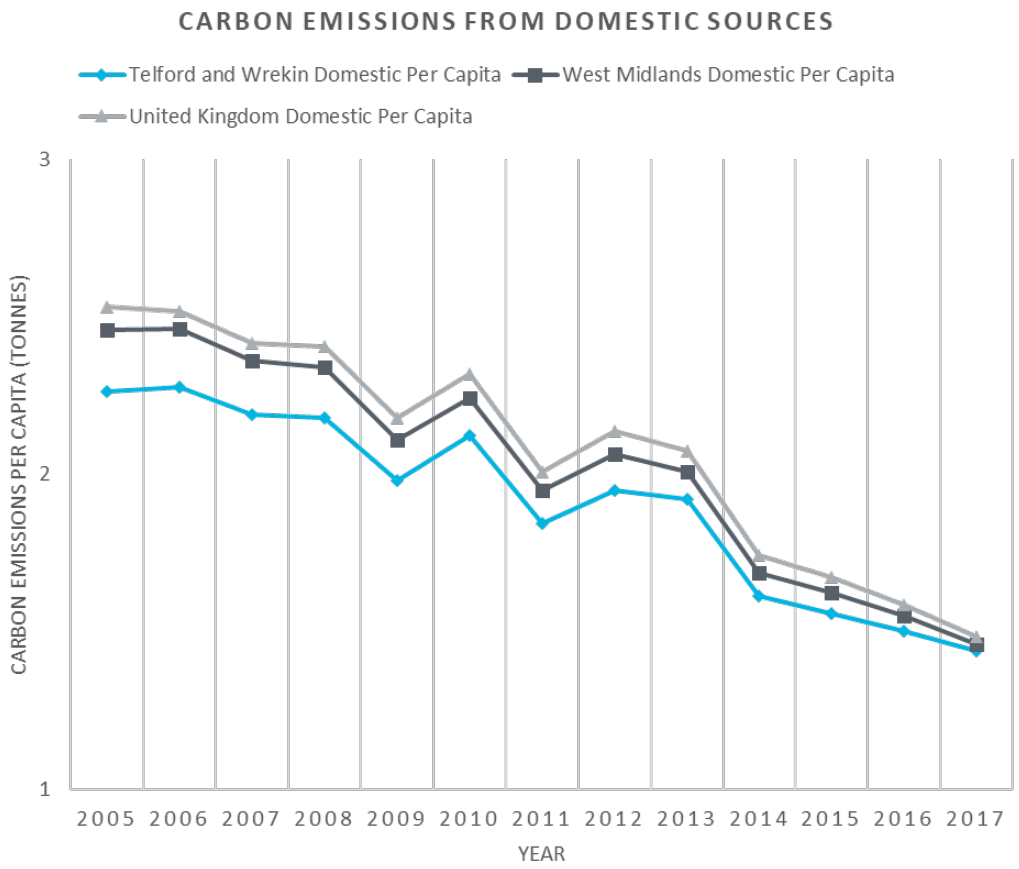


Carbon Emissions

Domestic

10.4.5 Figure 10.3 shows local, regional and national downward trajectories for domestic carbon emissions. Whilst Telford and Wrekin's levels started lower than regional and national figures, the gap has narrowed and the most recent data reveals that all scales of geography have comparable levels. From 2005-2018 the Borough saw a 35% decline in domestic emissions. However the rate of decline has been less dramatic since 2014.

Figure 10.1: Domestic carbon emissions per capita. Source: DBEIS, 2018.

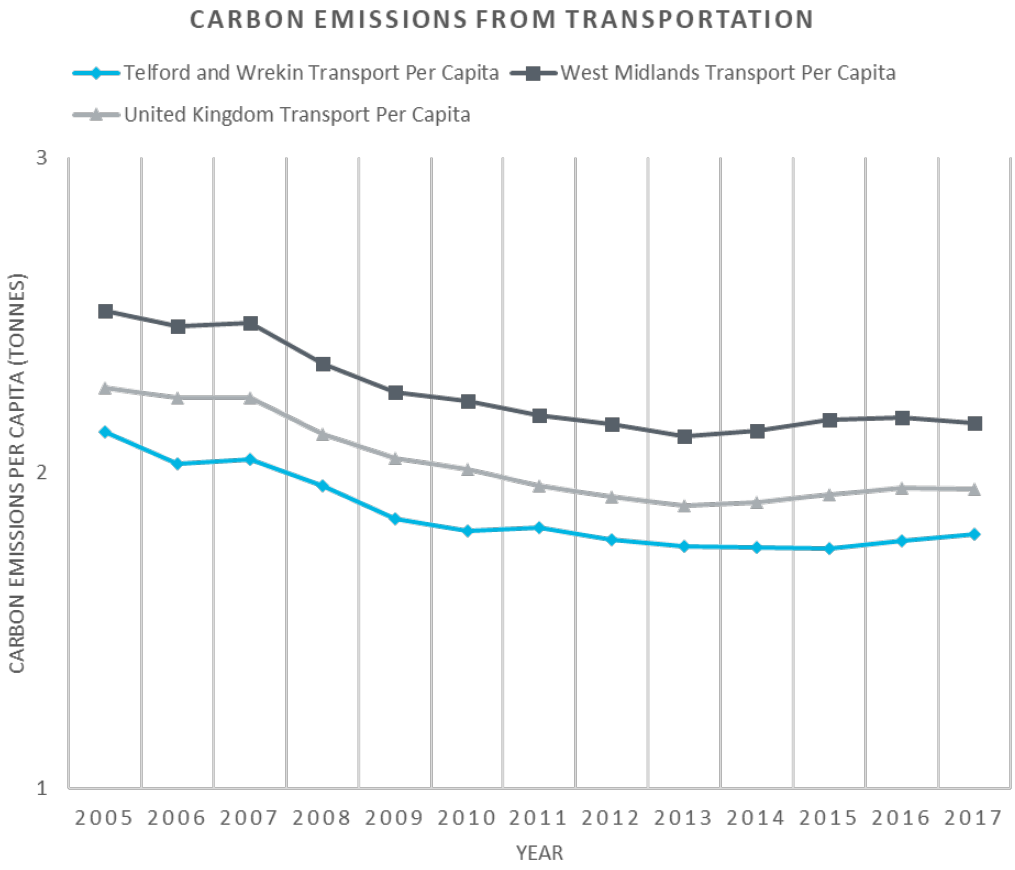


Transport

10.4.6 Figure 10.4 shows an overall decline in local, regional and national carbon emissions per capita from transportation between 2005 and 2013. After this, rates gently rose in the West Midlands and UK, whilst they continued to decline for two years In Telford and Wrekin, before slightly rising since 2015. Between 2005 and 2017, Telford and Wrekin saw a 15% decrease in transportation associated emissions per person.

10.4.7 Overall the Borough has, across all years since 2005, lower transportation emissions per capita than national and regional equivalents.

Figure 10.2: Transport CO2 emissions per person. Source of data: DBEIS, 2018.

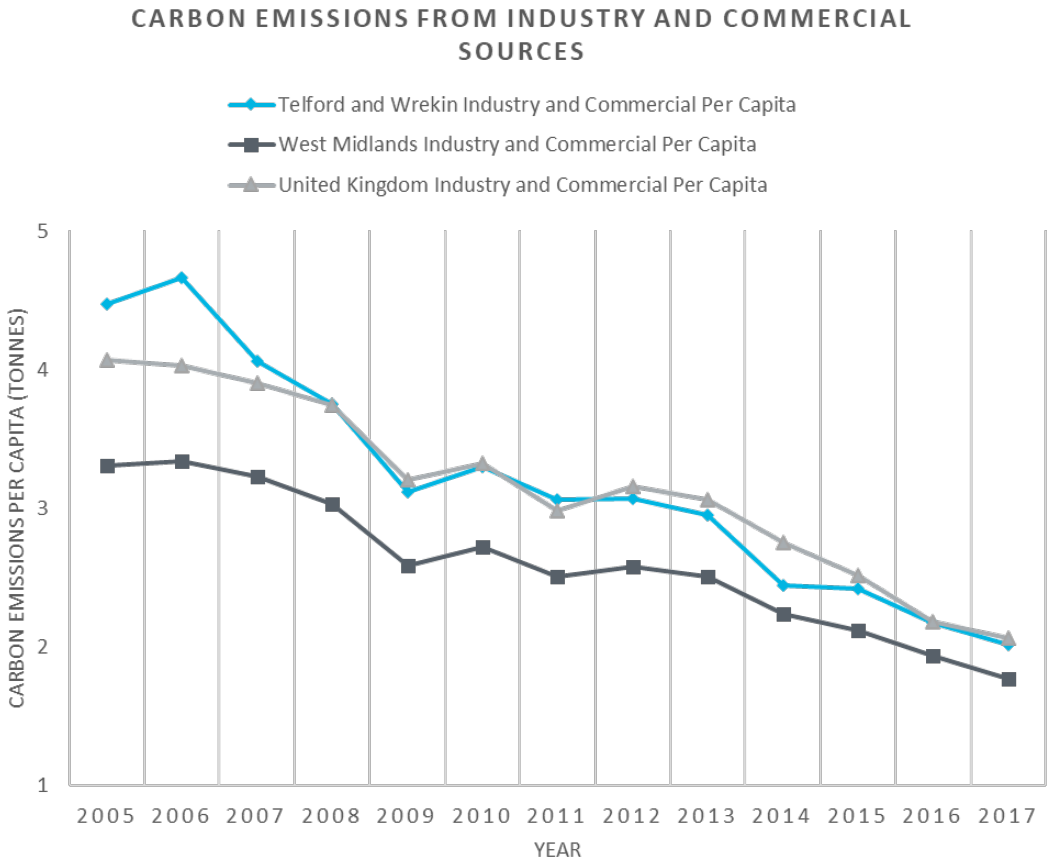


Industry and commercial

10.4.8 Figure 10.5 reveals a pattern where Telford and Wrekin had above average industry and commercial emissions in 2005, they have since reduced, and broadly declined to and at a similar rate to national levels since 2008. Regional levels historically have been considerably lower than national and local levels, however since 2014 the gap has narrowed.

10.4.9 Telford and Wrekin has seen a 54% decline in industry and commercial carbon emissions between 2005 and 2017.

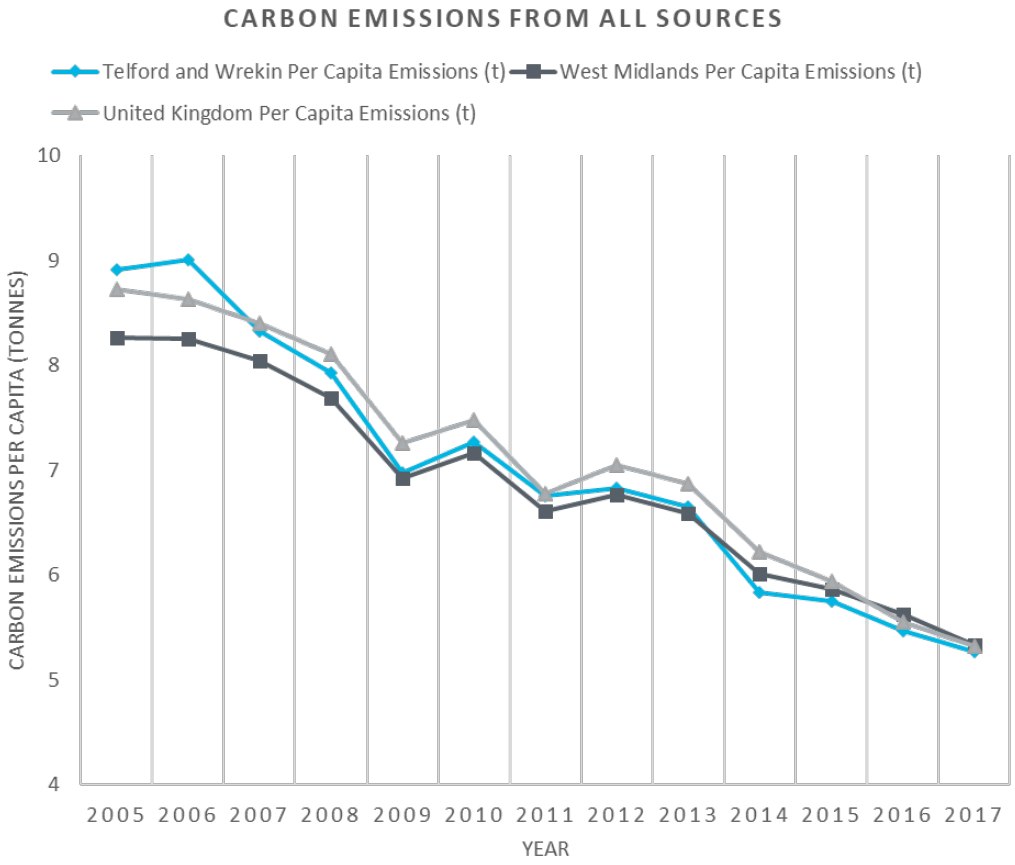
Figure 10.3: Carbon emissions per capita from industry and commercial sources. Source: DBEIS, 2018.



Overall emissions

10.4.10 Figure 10.6 shows a dramatic reduction in overall CO2 emissions per capita between 2005 and 2017. The decline has, since 2007, been broadly in line with regional and national averages and reductions have seen an overall decline of 41% in Telford and Wrekin, compared to 36% for the West Midlands and 39% for the UK.

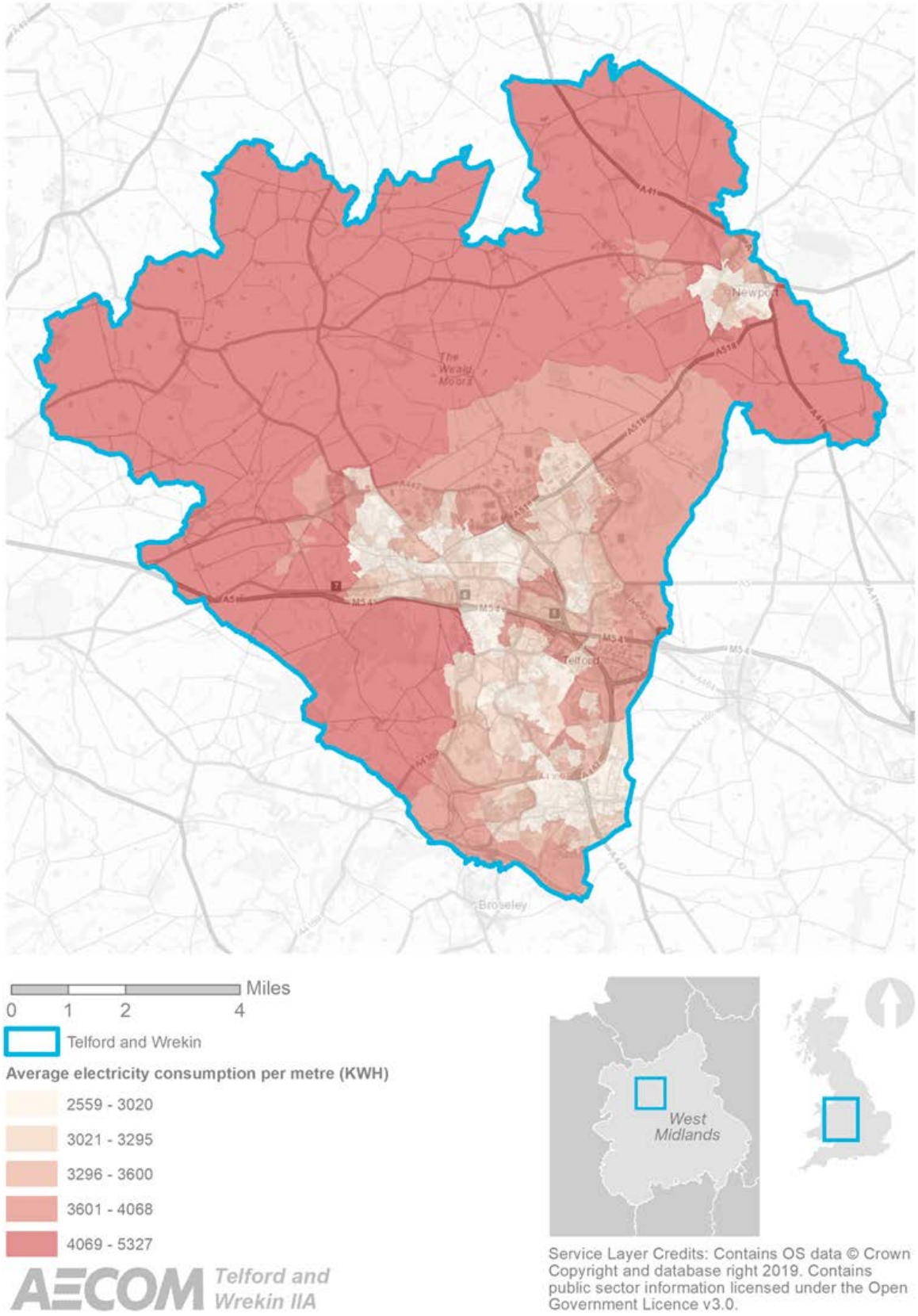
Figure 10.4: Overall carbon emissions per capita from all sources. Source: DBEIS, 2018.



Energy Consumption

10.4.11 Figure 10.7 shows a pattern whereby average electricity consumption per metre is significantly higher in the more rural areas of Telford and Wrekin. Factors which often influence these patterns are poor energy efficiency in buildings (including insulative properties and often a factor of building age), high energy lifestyles and readier access to disposable income.

Figure 10.5: Electricity consumption per metre. Source: DBEIS, 2018.



Trends and future baseline

10.4.12 With local and national government focus, energy efficiency and new low carbon generation capabilities are likely to increase in the short, medium and especially long-term. This will drive down carbon emissions, though it is unclear whether it will be possible to meet the COP21 Paris agreement's target to limit warming to 1.5 degrees above pre-industrial levels.

10.4.13 Transportation can expect to see the recent steady increases fall back into a declining trend. This is likely to be as a product of reduced flying (due to Covid-19), an increase in electric vehicles (including new trials for e-scooters and the growing use of e-bikes) and new forms of battery technology.

10.4.14 These positive trends could be offset by an overall increase in population and growth, and a continued focus on economic recovery.

10.4.15 New development is likely to be of a higher standard provided that the national drive for zero carbon developments continues. Retrofitting of existing stock has been a slow starting carbon saving investment which fits into a large number of local authority net-zero carbon target plans. Recent economic stimulus in response to the Covid-19 pandemic has ensured the availability of a 'Green Homes Grant' for households, with additional support for low income households to insulate their homes.

10.5 Key Issues

10.5.1 The following key issues emerge from the scoping exercise:

- Policy at all scales focuses on the need to decarbonise all pillars of human activity in order to prevent planetary warming which would have catastrophic effects.
- Literature backs up the need for this and links it to the need for energy efficiency, the effects of this on health and vulnerable populations.
- Telford and Wrekin generates more renewable energy per household than regional figures, but less than national.
- Photovoltaic, landfill gas and anaerobic digestion are the Borough's key renewable energy generating sources. There may be opportunities to diversify or build upon existing opportunities.
- Carbon emissions have declined since 2005 across all sectors, with transportation the only one to have risen very marginally in the past 5 years.

10.6 Scoping decision

10.6.1 Considering the key issues discussed above it is proposed that the topic of climate change resilience should be **SCOPED IN** to the integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Facilitate and contribute to the move towards a carbon neutral Telford and Wrekin whilst improving social equity of access to energy.	• Avoid the sterilisation of renewable energy opportunities by locating incompatible development in areas with greatest suitability for generation? • Support the continued growth in renewable energy generation across Telford and Wrekin, particularly where opportunities exist? • Continue to drive down greenhouse gas emissions associated with transport, housing and business? • Reduce energy consumption? • Decouple energy consumption and affluence? • Ensure affordable access to energy for all members of the community? • Lead to greater self-sufficiency?

11. Housing

11.1 Introduction

11.1.1 Access to housing is a basic human right, yet there is a chronic shortage of suitable, affordable and quality housing across the UK.

11.1.2 The Government recognises that there is a housing crisis and is committed to tackling under supply, whilst ensuring the right homes are available to meet the needs of a range of communities.

11.1.3 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following important factors related to housing:

- Housing need and housing delivery
- Housing market geography
- Housing condition
- House prices and affordability.

11.2 Context review

International

11.2.1 The United Nations adopted the 2030 Agenda for Sustainable Development in 2015, establishing 17 Sustainable Development Goals (SDGs) to work towards achieving by 2030. SDG 11 relates to sustainable cities and communities, with the principle objective of seeking to "*ensure access to all to adequate, safe and affordable housing*".[97]

National

11.2.2 Key messages from the **National Planning Policy Framework**[98] (NPPF) include that planning policies should:

- Support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural wellbeing.
- Support the Government's objective of significantly boosting the supply of housing via strategic policies which should be informed by a local housing need assessment, conducted using the standard method in national planning guidance. In addition to the local housing need figure, any needs that cannot be met within neighbouring areas should also be taken into account in establishing the amount of housing to be planned for.
- Assess and reflect the size, type and tenure of housing needed for different groups in the community. Where a need for affordable housing is identified, planning policies should specify the type of affordable housing required and expect it to be met on-site where possible.
- Recognise the important contribution of small and medium sized development sites in meeting housing needs. Local Plans should identify land to accommodate at least 10% of their housing requirement on sites no larger than one hectare, and neighbourhood

[97] https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-11-sustainable-cities-and-communities.html
[98] MHCLG (2019) National Planning Policy Framework [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

planning groups should also consider the opportunities for allocating small and medium-sized sites.

- In rural areas, planning policies and decisions should be responsive to local circumstances and plan housing development to reflect local needs, particularly for affordable housing, including through rural exception sites where appropriate. Authorities should consider whether allowing some market housing would facilitate the provision of affordable housing to meet local needs.

11.2.3 **The Select Committee on Public Service and Demographic Change report Ready for Ageing?** (2013)[99] warns that society is underprepared for the ageing population. The report says that '*longer lives can be a great benefit, but there has been a collective failure to address the implications and without urgent action this great boon could turn into a series of miserable crises*'. The report says that the housing market is delivering much less specialist housing for older people than is needed. Central and local government, housing associations and house builders need urgently to plan how to ensure that the housing needs of the older population are better addressed and to give as much priority to promoting an adequate market and social housing for older people as is given to housing for younger people.

11.2.4 **The UK 2070 Commission's final report on regional inequalities** details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which would see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes rethinking the housing crisis by viewing housing as a part of national infrastructure and ensuring supply meets the needs of the economy.

11.2.5 The government's standard methodology for calculating housing need was introduced in 2017. The standard methodology centralises the process of identifying housing need, providing an annualised minimum housing need figure for all local planning authorities in the UK.[100]

Regional

11.2.6 The 2017 **West Midlands Combined Authority (WMCA) Land Delivery Action Plan** sets out the WMCA's plan to work collaboratively with constituent local authorities and other local authorities within housing market areas (HMAs) relevant to the WMCA to "accelerate the quantum and delivery pace" of housing in the West Midlands region. This reflects the Combined Authority Mayor's commitments on housing delivery.[101]

11.2.7 The **2019 WMCA Strategic Economic Plan (SEP)** sets out eight "priority actions" for the region, including accelerating the delivery of housing within each of the constituent Local Planning Authorities. [102]

Local

11.2.8 The 2015 Objectively Assessed Housing Need (OAN) report was prepared for the Council by Peter Brett Associates to support preparation of the current adopted Local Plan. [103] The OAN report considers a complex range of inputs to calculate an annual housing need figure.

11.2.9 An **Economic and Housing Development Needs Assessment** (EHDNA) is being prepared for Telford and Wrekin Council by DLP Planning to inform the review of the Local Plan. The assessment will provide evidence of employment land requirements and local

[99] Select Committee on Public Service and Demographic Change (2013) Ready for Ageing? [online] http://www.parliament.uk/business/committees/committees-a-z/lords-select/public-services-committee/report-ready-for-ageing/
[100] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728247/How_is_a_minimum_annual_local_housing_need_figure_calculated_using_the_standard_method.pdf
[101] https://governance.wmca.org.uk/documents/s633/Appendix%202.pdf
[102] https://www.wmca.org.uk/media/1382/full-sep-document.pdf
[103] https://www.telford.gov.uk/download/downloads/id/2575/objectively_assessed_need_report.pdf

housing need, including the details of the size, type and tenure of housing needed for different groups in the community.

11.2.10 **The Telford and Wrekin Local Plan 2011-2031** (adopted 2018) sets an overall housing target for the plan period as well as a spatial strategy by which to distribute housing growth within the borough.[104]

11.3 Focused literature review

11.3.1 Providing housing in the right locations for all is a priority for localities and is reflected amongst national, regional and local policies and frameworks across the nation.

Inadequate housing conditions are associated with a wide range of health issues, with specific issues for certain groups

11.3.2 The Building Research Establishment calculated in 2010 that poor housing conditions have a detrimental impact on health, costing the NHS at least £600 million per year.

11.3.3 Issues associated with poor housing conditions include respiratory infections, asthma, lead poisoning, injuries and mental health *(Kreieger & Higgins, 2002), (Montgomery et. al. 1996) (Weitzman et. al. 1990) (Wilkinson 1999*

11.3.4 Overcrowding leads to social tension and can affect the development of children. Young people can be disproportionately affected by poor conditions in terms of emotional development and educational attainment *(Montgomery et. al. 1996) (Hunt, 1997)*

11.3.5 Living in poor housing has a long-term impact on children's life chances (Harker, L. 2006).

11.3.6 Older people can be particularly affected by issues such as inadequate heating, damp, and homes that are not adapted for mobility issues.

11.3.7 Women living in flatted accommodation can be more likely to suffer from emotional wellbeing issues (Gabe and Williams, 1993)

Housing affordability can have detrimental effects on health and wellbeing

11.3.8 Homeless people face clear and obvious physical and mental health difficulties.

11.3.9 For renters, unaffordable housing has negative effects on mental health *(Baker et. al. 2013).*

11.3.10 Affordable Housing Can Improve Health Outcomes by freeing up disposable income *(Maqbool et al, 2015).*

Housing appearance and quality can affect mental wellbeing

11.3.11 A study conducted *by Bond et. al. (2012)* analysed approximately 4,000 residents within deprived areas of Glasgow, Scotland. The results found that mental wellbeing was higher when respondents, neighbourhoods had very good aesthetic qualities.

11.3.12 *McCay (2017),* states that the association between urban living environments and mental health is becoming more apparent.

11.3.13 'Difficult to let' properties can result in poorer emotional wellbeing compared to those living in 'better areas'. (*Blackman et al, 1989*).

[104] https://www.telford.gov.uk/info/20452/research_and_information/1229/telford_and_wrekin_local_plan_2011-2031

11.4 Baseline review

Housing need and housing delivery

11.4.1 The 2015 Objectively Assessed Housing Need (OAN) report prepared for the Council by PBA calculates that Telford and Wrekin had an OAN of 15,555 dwellings over the plan period of 2011-2031, equivalent to 497 dwellings per annum (dpa).

11.4.2 However, at examination of the adopted Local Plan, the inspector determined that, based on a range of recent evidnace, there was "a need for an upwards adjustment" of this figure, and the Plan's overall housing target was revised to 17,280 dwellings overall, or 864 dpa.[105]

11.4.3 The adopted Local Plan (2018) therefore sets a housing target of 864 dpa. To inform the distribution of this target, the adopted Local Plan divides the borough into the following three 'strategy areas' which function as a hierarchy: **1.** Telford → **2.** Newport → **3.** Rural areas.

11.4.4 The spatial strategy for delivering this growth is to focus around 86% of growth at Telford, around 8% at Newport and the remainder across the rural areas.

11.4.5 Recent delivery in relation to this housing need figure at each of the strategy areas is illustrated in Table 11.1 below, taken from the most recent Authority Monitoring Report:

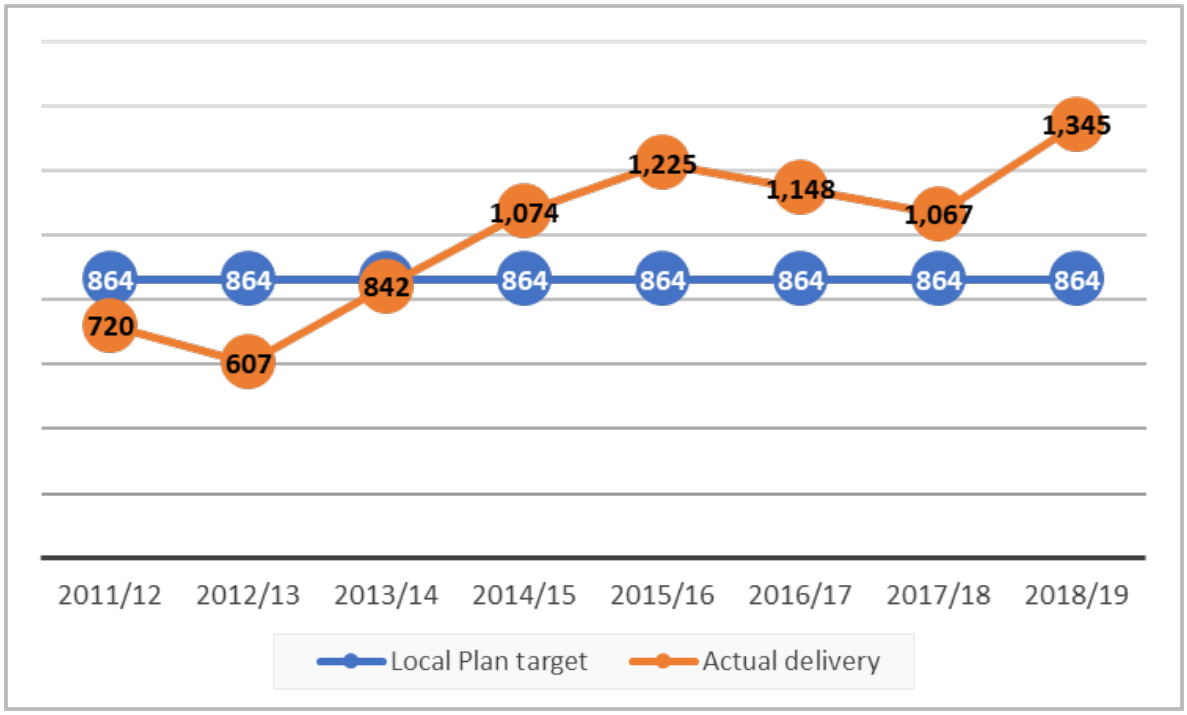
Table 11.1 Housing completions in Telford and Wrekin by Local Plan strategy area (2011-2019)[106]

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Telford	622	591	795	947	1,025	943	803	1,152
Newport	82	13	39	87	166	168	179	122
Rural areas	16	3	8	40	64	37	85	71
Total	720	607	842	1,074	1,225	1,148	1,067	1,345

11.4.6 This demonstrates that housing delivery in Telford and Wrekin has been very high over a sustained period, suggesting a robust land supply and strong market capacity and absorption. To contextualise this high rate of housing delivery, it is graphed in Figure 11.1 below in relation to both the adopted Local Plan housing target.

[105] https://www.telford.gov.uk/downloads/file/6468/l6_-_report_on_the_examination_of_the_telford_and_wrekin_local_plan_2011-2031
[106] https://www.telford.gov.uk/info/20455/land_supply_and_monitoring/124/annual_monitoring_report_amr

Figure 11.1 Annual housing delivery versus OAN and adopted Local Plan housing target [107]



Housing market geography

11.4.7 The EHDNA is expected to find that Telford and Wrekin comprises its own housing market area (HMA). Details of this, including travel to work and migration data will give an indication of the borough's self-containment; it will produce a figure which quantifies the percent of people both living and working in the borough.

11.4.8 There are three other HMAs directly relevant to the housing market geography of the West Midlands region:

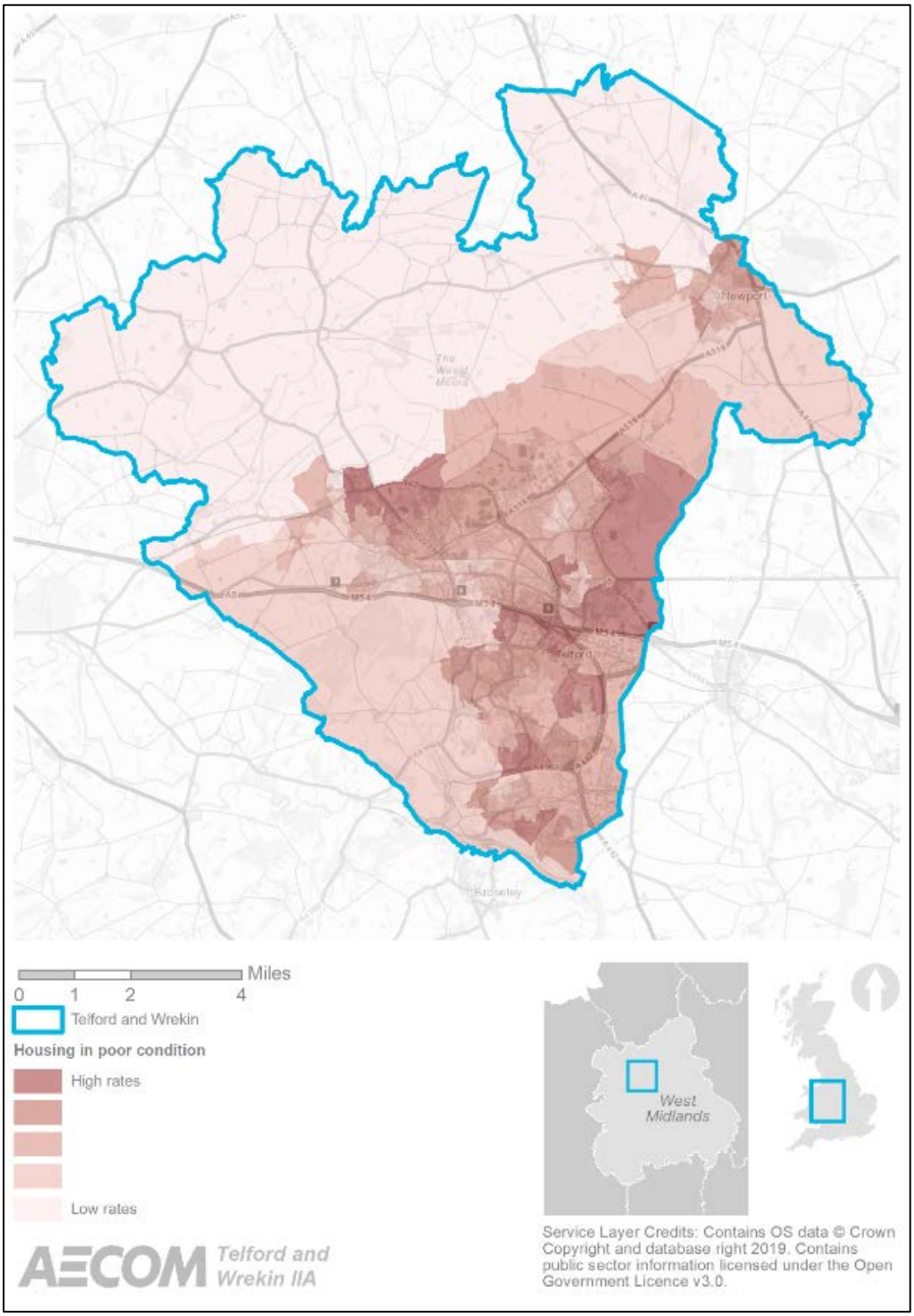
- **Greater Birmingham and Black Country HMA**, which covers Birmingham, Solihull, Cannock Chase, Lichfield, Tamworth, North Warwickshire, Stratford-on-Avon, Redditch, Bromsgrove and the Black Country authorities and South Staffordshire.
- **Coventry and Warwickshire HMA**, which covers Rugby, Coventry, Warwick, North Warwickshire, Stratford-on-Avon and Nuneaton and Bedworth.
- **Shropshire and Herefordshire HMA**, covering all of Shropshire (aside from Telford and Wrekin) and Herefordshire. It is noted that the emerging Shropshire Local Pla proposes that Shropshire comprises its own HMA and that the current geography will change once the plan is adopted.

Housing condition

11.4.9 Figure 11.2 below illustrates the relative proportion of homes that are in a poor condition across Telford and Wrekin, as per the 2019 Indices of Deprivation. The data illustrates that areas with higher rates of poor quality housing within the borough are focussed within the north and west of the urban area of Telford, whilst low rates of poor quality housing are found in the rural areas

[107] Ibid

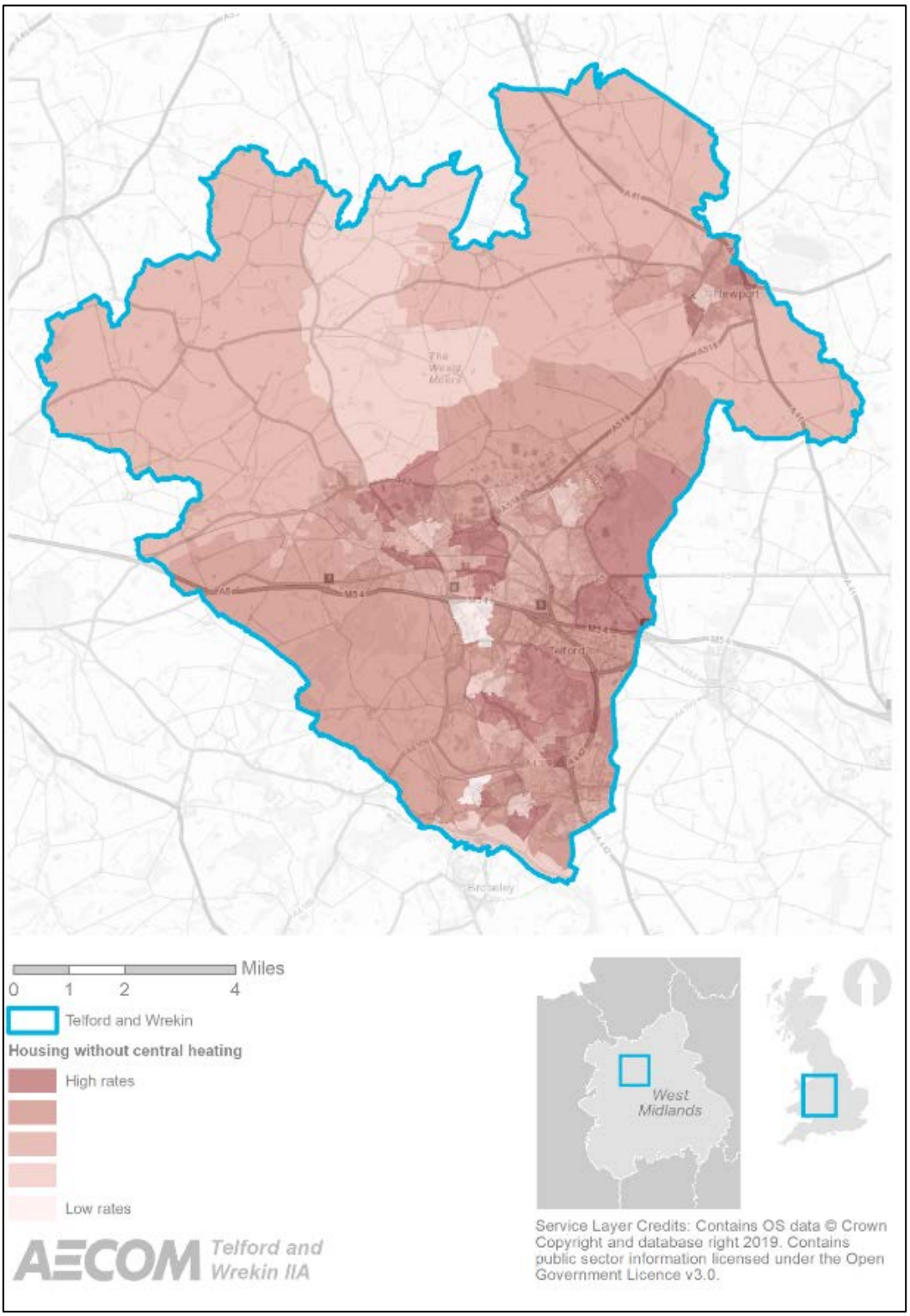
Figure 11.2 Housing condition in Telford and Wrekin[108]



[108] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833992/File_8_-_IoD2019_Underlying_Indicators.xlsx

11.4.10 Figure 11.3 highlights the rates of housing without access to central heating as per the 2019 Indices of Deprivation. This is a key indicator which relates to a number of sustainability issues, including health, energy and housing. The pattern of distribution is broadly similar to that for poor quality housing, with highest concentrations evident in central, northern and north western Telford.

Figure 11.3 Housing without central heating in Telford and Wrekin[109]

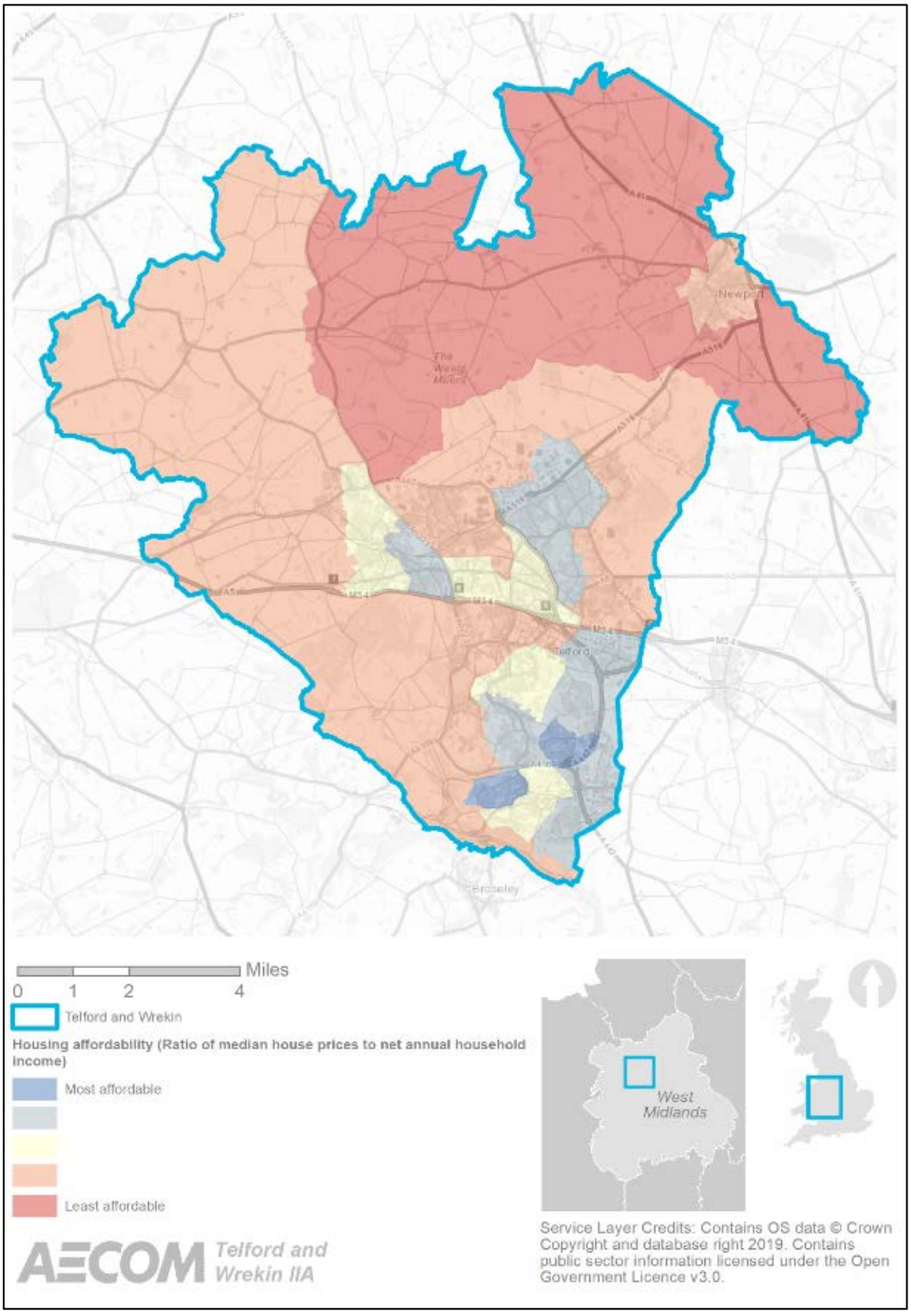


[109] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833992/File_8_-_IoD2019_Underlying_Indicators.xlsx

Housing affordability

11.4.11 Finally, Figure 11.4 maps housing affordability across the borough (based on sale value rather than rental value) as per the 2020 ONS affordability ratios. The picture that emerges is one of greatest affordability in the built area of Telford and lowest affordability in the rural areas, particularly the north of the borough. The reasons underpinning this distribution of housing affordability are likely to be nuanced, though the most affordable areas of the borough correlate to those with high rates of housing supply and highest relative levels of poor-quality housing, both of which can be key determinants of property value.

Figure 11.4 Housing affordability in Telford and Wrekin[110]



110 https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/housingaffordabilityratiosformiddlelayersuperoutputareas

11.4.12 There has been a consistent pipeline of affordable housing completions within the borough since the base date of the current plan period in 2011/12. A total of 2,488 affordable homes have been completed between 2011 and 2019, annualised in Figure 11.5 below. It should be noted that this is a gross completions total, and there have also been some losses through sales and redevelopment which mean the overall net total completions will be slightly lower.

Figure 11.5 Annual affordable housing completions since 2011/12[111]

Year	Total affordable housing completions per year
2011-2012	275
2012-2013	211
2013-2014	319
2014-2015	427
2015-2016	343
2016-2017	301
2017-2018	290
2018-2019	322

Trends and future baseline

11.4.13 Given the consistency of recent housing completions and a substantial supply of available brownfield land, there is good potential for above-target housing completions to continue being achieved going forward.

11.4.14 For the same reasons, consistent delivery of affordable housing is considered likely to be sustained, with the current 9-year average of 30% of completions being of affordable tenures likely to continue.

11.4.15 However, an economic downturn could have knock-on effects on the housing market, meaning a slowdown in construction in the short to medium term.

11.4.16 The focus of growth within the Telford urban area will continue to ensure the majority of development comes forward at the borough's most sustainable settlement. However, this could potentially mean that settlements across the rural area will see only very limited growth going forward. This could potentially impact the future vitality of some settlements and their services.

11.5 Key Issues

11.5.1 The following key issues emerge from the context and baseline review:

- Telford and Wrekin has achieved high and sustained rates of housing completion for several years, consistently delivering well above identified levels of overall housing need and above the housing target in the adopted Local Plan. The adopted Local Plan housing target is **864 dpa,** whilst average delivery since 2011/12 is around **1,003 dpa**.
- Within the overall level of housing completions, consistently high delivery of affordable housing is also evident, averaging **311 affordable dpa (gross)** since 2011/12.
- The vast majority of this housing growth has taken place within the contiguous Telford urban area, with more limited growth at the secondary settlement of Newport. Very limited growth has taken place across the rural areas.

[111] Ibid

- There is evidence of clusters of poorer quality (new town) housing in central, northern and north western Telford, while rates of poor quality housing are much lower in the rural areas, particularly in the far north of the borough.
- Affordability of housing is a key issue, with notable disparities in affordability evident between the urban areas of the borough and the rural areas.

11.6 Scoping outcome

11.6.1 Considering the key issues discussed above it is proposed that the topic of housing should be **SCOPED IN** to the Integrated Appraisal. The following objective and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Support timely delivery of an appropriate mix of housing types and tenures, including a focus on maximising the potential of suitable brownfield opportunities, to ensure delivery of high quality housing that meets the needs of Telford and Wrekin residents.	• Support timely delivery of an appropriate mix of housing types and tenures to meet objectively assessed housing need in the most sustainable locations? • Realise potential from suitable brownfield opportunities in the borough, including unlocking opportunity sites in public ownership? • Support delivery of a range of good quality, affordable and specialist housing that meets the needs of Telford and Wrekin's residents, including older people, people with disabilities and families with children? • Enable managed growth at rural communities where to do so would help improve the sustainability of these settlements?

12. Health and wellbeing

12.1 Introduction

12.1.1 According to the World Health Organisation:

*"**Health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. ... The achievement of any State in the promotion and protection of **health** is of value to all"*

12.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following relevant factors.

- Indicators of health
- Multiple deprivation
- GP and Pharmacy needs
- Mental Health Issues
- Childhood and Maternal Health
- Crime
- Access to greenspace / recreation

12.2 Context review

International

12.2.1 Goal 3 of the **UN Sustainable Development Goals** is to "Ensure healthy lives and promote well-being for all at all ages".

National

12.2.2 Key messages from the **National Planning Policy Framework**[112] (NPPF) include that planning policies should:

- Enable and support healthy lifestyles through provision of green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.
- Take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community.
- Help deliver access to high quality open spaces and opportunities for sport and physical activity to contribute to the health and well-being of communities.

12.2.3 **National Planning Practice Guidance** (NPPG)[113] identifies that local planning authorities should ensure that health and wellbeing, and health infrastructure are considered in local and neighbourhood plans and in planning decision making.

12.2.4 The Fair Society, Healthy Lives ('**The Marmot Review'**)[114] investigated health inequalities in England and the actions needed in order to tackle them. Subsequently, a supplementary report was prepared providing additional evidence relating to spatial planning and health on

[112] MHCLG (2019) National Planning Policy Framework [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf
[113] Department for Communities and Local Government (2012) National Planning Practice Guidance [online] http://planningguidance.communities.gov.uk/
[114] The Marmot Review (2011) The Marmot Review: Implications for Spatial Planning [online] http://www.nice.org.uk/nicemedia/live/12111/53895/53895.pdf

the basis that that there is: "*overwhelming evidence that health and environmental inequalities are inexorably linked and that poor environments contribute significantly to poor health and health inequalities*".

12.2.5 The **UK 2070 Commission's final report** on regional inequalities details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes delivering a connectivity revolution by creating a transformed public transport network between, within and beyond cities. It also recommends implementing a comprehensive framework for inclusive devolution by allowing places to 'step-up' via appropriate levels of devolution according to local ambition, need and capacity. A levelling up of the playing field with fairer access to funds and spatial priorities is also included.

Regional

12.2.6 Public Health England provide **Joint Strategic Needs Assessments (JSNA)** as a resource for understanding health and wellbeing data relating to life expectancy, population, deprivation, mortality, mental health, healthy lifestyles and various other indicators with local authorities across the UK.

12.2.7 The **Thrive West Midlands – Action Plan** recognises the importance of focussing on health and wellbeing and costs to local government associated without planning and considering mental health. Telford and Wrekin are a non-constituent member of the West Midlands Combined Authority.

12.2.8 **Improving health and wellbeing in Shropshire and Telford and Wrekin 2019** is a resource pack for local health care authorities to share and build information relating to the local communities in which they live and wider context affecting health and wellbeing. The resource pack was brought together by Age UK and the Voluntary Community and Social Enterprise Health and Wellbeing Alliance (NHS).[115]

12.2.9 The **Shropshire and Telford & Wrekin Transformation Plan for Children's and Young People's Mental Health and Wellbeing Draft 2019 -2021** is a local transformation plan that seeks to set a vision for the future of children and young people living in Shropshire and Telford and Wrekin.

Local

12.2.10 The **adopted 2018 Local Plan** Policies NE3 (Existing public open space), NE4 (Provision of public open space), NE5 (Management and maintenance of public open space) and NE6 (Green Network) cover matter related to provision and protection of recreational space in the borough.

12.2.11 Annual **Public Health Reports** are published by the Council, reporting on local health outcomes in Telford and Wrekin in relation to key mental and physical health metrics for different groups within the community. The most recent Public Health Report dates from 2019.[116]

12.2.12 The **Local Green Infrastructure Needs Study 2013** identifies areas of greatest need of local green infrastructure and analyses the quality, quantity of existing green spaces. The report considers the importance of health and wellbeing in regards to needs for publicly accessible recreational space as it is essential.

12.2.13 The **Telford and Wrekin Health and Wellbeing Strategy 2016 – 2019**[117] was a strategy to set out the council's vision for health and wellbeing across the borough and to ensure future

[115] https://www.ageuk.org.uk/globalassets/age-uk/documents/programmes/health-and-wellbeing-alliance/july-2019-health-and-wellbeing-resources-pack-for-shropshire-and-telford-and-wrekin-compressed.pdf
[116] https://www.telford.gov.uk/download/downloads/id/10642/annual_report_2019.pdf
[117] https://www.telford.gov.uk/download/downloads/id/4005/health_and_wellbeing_strategy_2016.pdf

generations are living healthier and happier lives for longer. The focus was to support and develop on community assets and strengths.

12.2.14 **Understanding Telford and Wrekin 2019**[118] was designed to provide an overview of the current state of the population, demography, health, children and young people, adults and the economy in Telford and Wrekin. The document identifies the boroughs health inequalities, provides details on national averages and includes summaries from the JSNA.

12.2.15 The **Telford and Wrekin Playing Pitch Strategy 2016** highlights the borough's future demands for a range of playing and athletic facilities.

12.2.16 The **Telford and Wrekin Pharmaceutical Needs Assessment 2018/19 – 2020/21**[119] was published in April 2018 and is an assessment of pharmacy services across the Borough. The report found that there is currently sufficient coverage of pharmacies and GP dispensing practices (Newport). The facilities provide adequate opening times and have good accessibility to majority of the public. There are sufficient coverages of advanced medical services however enhanced, sexual health and other public health services such as eyecare should be encouraged further.

12.2.17 The **Telford and Wrekin Annual Public Health Report 2019**[120] is produced by the Director of Public Health (DPH) and focuses on promoting health within the borough and improving vulnerable groups.

12.3 Focused literature review

There is a depth of evidence demonstrating that urban planning can influence human health and wellbeing

12.3.1 An umbrella review of evidence was undertaken by Public Health England in 2017, seeking to amalgamate the breadth of evidence linking the built and natural environment and health. The review focused on five key aspects; neighbourhood design, housing, healthier food, natural and sustainable development, and transport. Key outcomes include the following:

- Compact communities with safe and walkable infrastructure promotes increased physical activity.
- Housing quality and affordability are critical determinants of health and wellbeing.
- Increased access to unhealthier food retail outlets is associated with increased weight status in the general population and increased obesity and unhealthy eating behaviours among children residing in low income areas.
- There is a wealth of consistent evidence demonstrating clear adverse effects of exposure to air pollutants on health outcomes across all population groups.
- Exposure to excessive noise is associated with poorer mental health outcomes, particularly among older adults and children.
- Access to, and engagement with, the natural environment is associated with numerous positive health outcomes.
- Provision of active travel infrastructure and public transport show clear benefits in terms of cardiovascular health of communities.

12.3.2 Other benefits of planning for healthy inclusive communities, considering all aspects of health according to a range of academic sources include:

- improvements of self – esteem and reduction of stress (Barton et. al., 2010; Depledge et al. 2011; Meija, 2010).

[118] https://www.telford.gov.uk/download/downloads/id/10504/understanding_telford_and_wrekin_2019.pdf
[119] https://www.telford.gov.uk/download/downloads/id/7027/telford_and_wrekin_pna_201819_-_202021.pdf
[120] https://healthytelford.com/wp-content/uploads/2019/10/Annual_Public_Health_Report_2019.pdf

- promotion of good health and reduction of socioeconomic health inequalities (Mitchell, et. al., 2008).

12.3.3 A number of sources have reviewed the direct linkage between access to green space and green environments and the impacts this has on human health. The results from such studies include:

- determining that populations that are located closer to green space have low levels of health inequality related to income deprivation (Mitchell et. al., (2008);
- green spaces are proven to be beneficial for health (Lee et. al. (2011);
- green space development should be the forefront for plans and projects and should be considered as a starting point to create stronger connections with health (Fischer et. al. 2016).
- Parks and green spaces are estimated to save the NHS around £111 million per year (Fields in Trust (2018) Revaluing Parks and Green Spaces. Measuring their economic and wellbeing value to individuals)

12.3.4 Kuo (2015) suggests that there should be just as much attention on providing greenspaces as well as 'oases' such as ball fields and dedicated greenspaces for walking to promote recreation and physical activity. Such oases should be designed to incorporate plants, natural assts that induce feelings of deep relaxation, awe and vitality. Providing green and natural oases where health risks are high could be a powerful yet inexpensive solution to public health and address health inequalities.

<u>The built environment and quality of development can also affect mental health</u>

12.3.5 Mental health can sometimes be overlooked when it comes to the planning and designing process. It's important to ensure that mental illnesses, where it can be planned for, is integrated throughout planning and design.

12.3.6 Several studies show linkages between poor quality urban environments and greater likelihood of mental illnesses. The following points have been confirmed:

- Galea, S. Et al (2005), found that living in neighbourhoods with poor quality built environments results in a greater likelihood of depression[121].
- McCay (2017) found that people who reside in high density urban areas are more likely to experience higher levels of depression, anxiety and other common mental illnesses[122].

<u>Living in a deprived neighbourhood can be bad for mental health and wellbeing</u>

12.3.7 Leventhal & Brooks – Gunn (2003) found that people moving to less deprived neighbourhoods became significantly less stressed in terms of mental health than those that lived in most deprived neighbourhoods[123].

12.3.8 Weich, Et al. (2002) depression was associated with independently rated features of the built environment, independent of individuals' socio-economic status and internal characteristics of dwellings. For example, graffiti, poor quality housing frontages, a lack of public space(s) and few private gardens had significant associations with prevalence of depression.

[121] Galea, S. Ahren, J. Rudenstine, S. Wallace, Z. & Vlahov, D. (2005). Urban built environment and depression: a multilevel analysis. [online] available at: https://jech.bmj.com/content/jech/59/10/822.full.pdf
[122] McCay, L. (2017). Urban Mental Health. [online] available at: https://books.google.co.uk/books?hl=en&lr=&id=W8SbDwAAQBAJ&oi=fnd&pg=PA32&dq=McCay,+L.+2017.+Designing+Mental+Health+into+Cities&ots=IzPcu4rqE5&sig=C1Zb0hhmVSF2GbpwCHCi4Iu0z4I#v=onepage&q=McCay%2C%20L.%202017.%20Designing%20Mental%20Health%20into%20Cities&f=false
[123] Leventhal, T. & Brooks – Gunn, J. (2003). Moving to opportunity: an experimental study of neighbourhood effects on mental health. AM J Public Health; 93: 1576 – 82.

12.3.9 Gehl, Et al 2018 express that inclusion efforts among public space and public health should focus on areas of deprivation.

12.3.10 Addressing health and wellbeing through planning can be challenging Barton, H. and Grant, M (2006)[124] expressed that the linkages between health, well – being and planning are widely recognised but often indirect and complex to combat.

12.4 Baseline review

Indicators of health

12.4.1 Local Authority Health Profiles provided by Public Health England present detailed overviews of the current health issues across the country including local and regional scales. Public Health England draw on relevant ONS data and other government departments to visually reflect the current state of ongoing physical health, mental health and well-being.

12.4.2 The current health related issues within Telford and Wrekin have been summarised through the local JSNA report. Some important headline health and wellbeing messages for the council is that:

- The population is younger than the national average.
- The population is growing, changing and ageing.
- The population is becoming more diverse.

- Households are more likely to contain dependent children/carers.
- High rates of poor health.
- Not always making healthy choices.

- Hospital admissions higher rates than national averages.
- National prevalence rates enable an estimation of the number of residents with other health conditions.

- Emergency admissions for young children are higher than the national averages.
- Overall crime rates are slightly higher than national rates.
- Child protection and homelessness is high.

Multiple deprivation

12.4.3 The Index of Multiple Deprivation 2019 (IMD2019) is an indication tool that relatively ranks small areas within England on a scale from least deprived to most deprived based on seven domains of deprivation (Figure 12.1). The domains of deprivation cover factors such as income and living environments. The tool can be used to compare small areas across England in income, employment, education, health, crime, barriers to housing/ services and living environment.

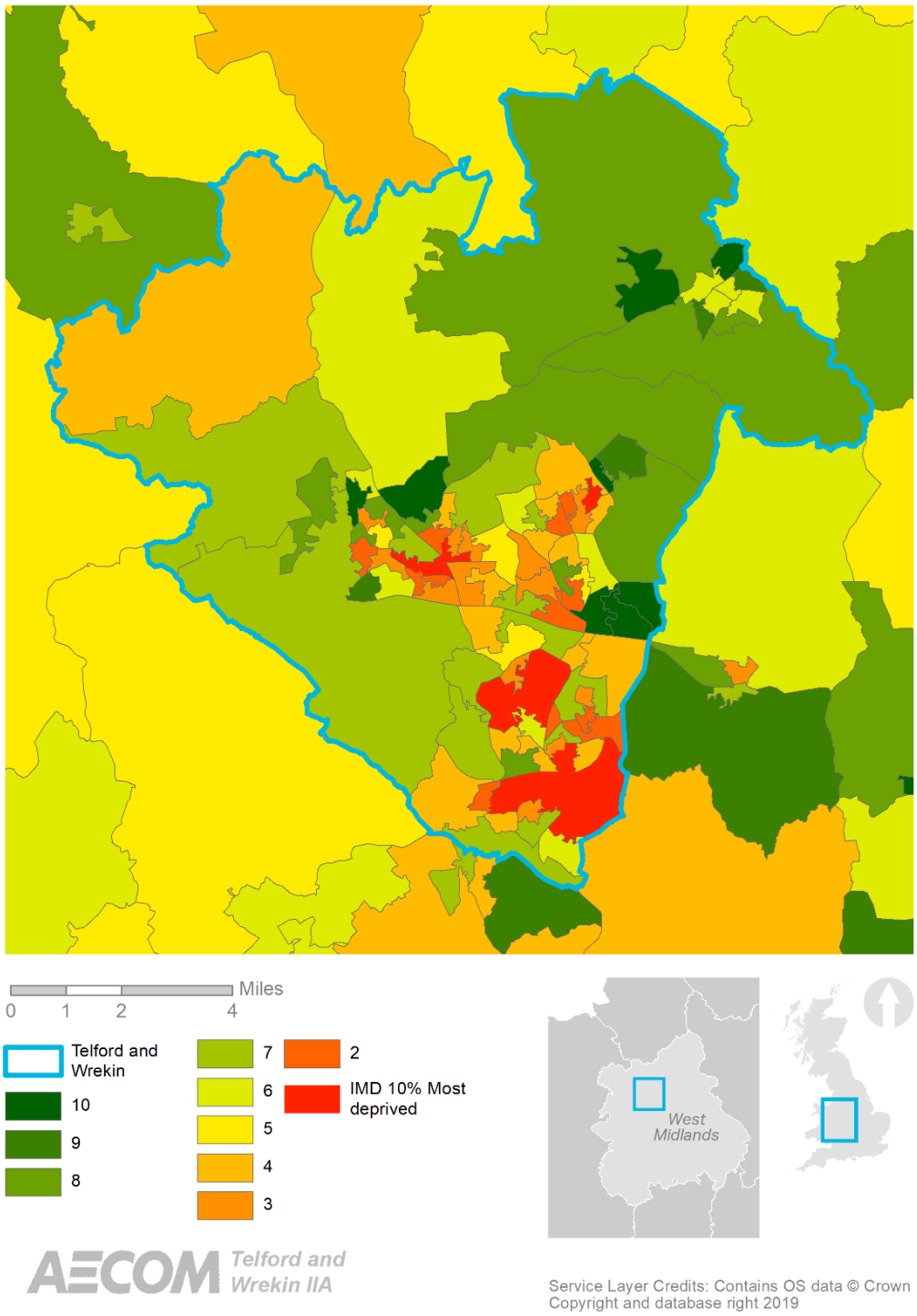
12.4.4 There are small pockets of deprivation in mainly urban areas. Newport and Edgmond and other similar rural areas within the council are within the least deprived locations.

12.4.5 Overall, the socio-economic balance is contrasting within the borough as some urban areas are considered the most deprived in the country whilst others are amongst the least deprived.

[124] Barton, H., & Grant, M. (2006). A health map for the local human habitat. Journal- Royal Society for the Promotion of Health, 126(6), 252- 253. https://doi.org/10.1177/1466424006070466

12.4.6 People who reside in areas of least deprivation experience higher levels of economic wellbeing than other areas within the borough. There are lower levels of unemployment benefit rates and income deprivation. It was revealed that a quarter of the population in Telford and Wrekin are living within the 10% most deprived areas nationally. This has declined since the previous IMD in 2015.

Figure 12.1. Telford and Wrekin – Index of Multiple Deprivation, 2019.



GP and pharmacy needs

12.4.7 The **Pharmacy Needs Assessment (2016) for the period 2018/19 – 2020/21** states that there are a number of services across the borough which provide the local community. This includes dispensing services which there is sufficient capacities within existing pharmacies and GP services. Other medical services such as sexual healthcare are encouraged to offer more services on weekends and after hours as there is a greater demand during these times.

12.4.8 In the report it was surveyed that the most influential factors in choosing a pharmacist was the distance it takes to travel there and those closest to home were preferred. In the report it was also mentioned that those who are living in rural areas have a lack of access to these GP services. There are three GP practices within Newport and the remaining practices are within the urban areas of Telford[125].

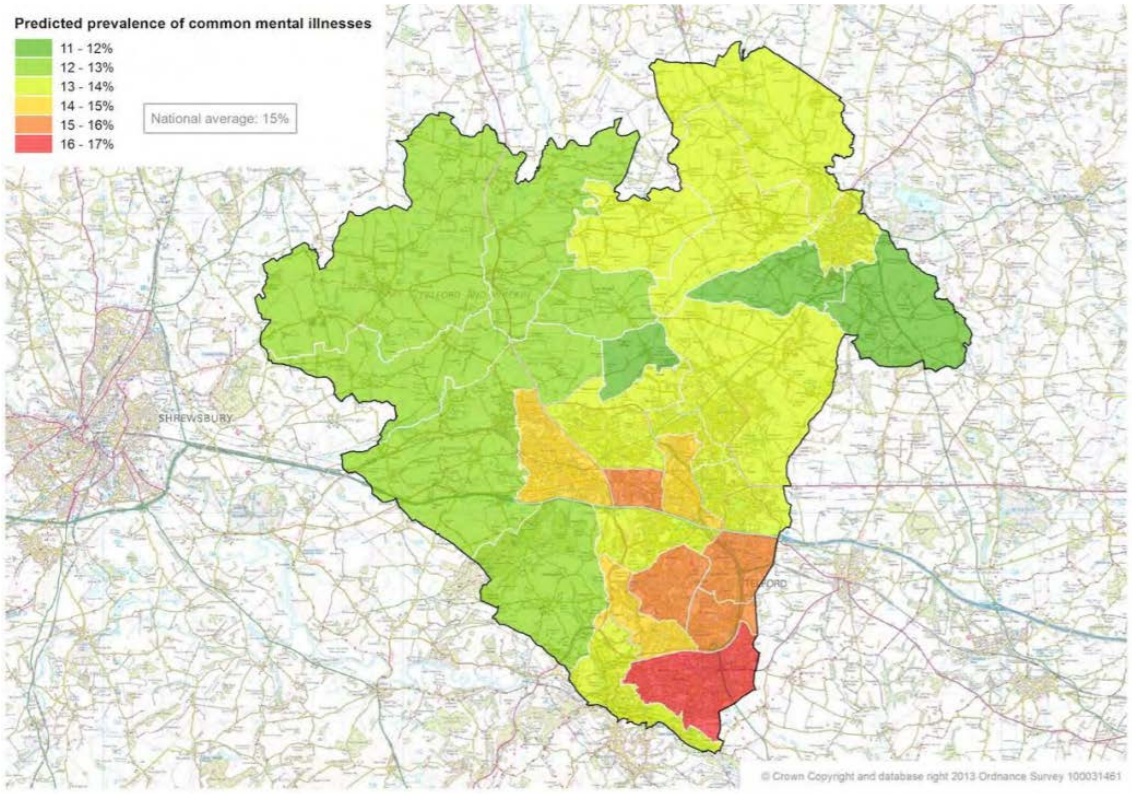
Mental health issues

12.4.9 Within the borough mental health disorders are higher than the national average, however 'severe' disorders are lower. It is estimated that almost 10% of children have a mental health disorder, similarly around 12.4% of adults experiences anxiety and depression.

12.4.10 There is a Children's and Young People's Mental Health Taskforce, which has been created to address and improve concerns regarding mental health for the younger population.

12.4.11 As stated previously there is likely to be a greater need to improve mental health in areas located in Madeley, Great Dawley, Stirchley and Brookside, Hollinswood, Randley and Ketley, as they have least access to local green infrastructure as identified in the Local Green Infrastructure needs study.

Figure 12.2. Areas in need of local green infrastructure improvements for mental health and wellbeing[126].



[125] https://www.telford.gov.uk/download/downloads/id/7027/telford_and_wrekin_pna_201819_-_202021.pdf
[126] https://www.telford.gov.uk/download/downloads/id/1475/telford_and_wrekin_council_local_green_infrastructure_needs_study_and_appendices.pdf

Children and Maternal Health

12.4.12 Local Authority Health Profiles have explored child and maternal health within Telford and Wrekin. Several indicators are shown to perform better than the national average for the period ranging 2016 -2019 [127]:

- Vaccination coverages.
- Children in care immunisations.
- Family homelessness.
- Children killed in seriously injured road incidents.

- Child alcohol specific condition admissions (under 18s).
- Hospital admissions for drug abuse (15 – 24 years).
- A&E Attendances (0-4 years).

12.4.13 There are several indicators where childrens' health is performing below the national average and within the lower 25% quartile. The indicators include youth crime, children in care and low income families, teenage pregnancies and hospital admissions for self-harm and asthma. Child obesity rates are also higher than national averages.

Crime

1.1.1.1 There are several key facts on crime within the Telford and Wrekin borough derived from the 2011 census, Public Health England Local Authority Profiles and UK Police Crime Stats:

- Crime rates across the borough are higher than national averages. The overall crime rate per 1,000 population is 82.1, which is higher than the national rate of 71.5. The highest occurring crime types are Anti-Social Behaviour and Violence & Sexual Offences.

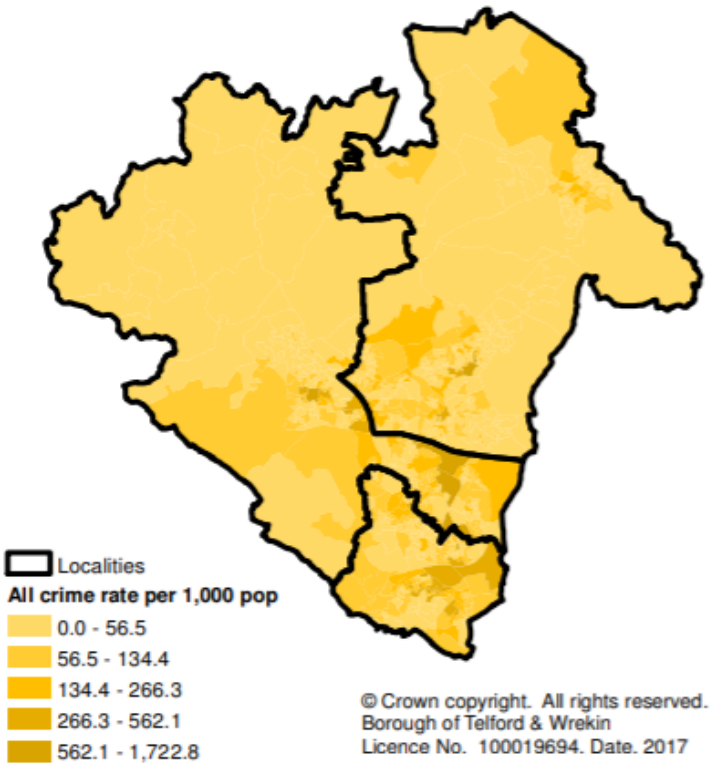
- First time entrants to the youth justice system are higher than national averages[128]. The rate of juvenile first time entrants to the youth justice system has decreased between 2011 and 2016 from 636.7 to 514.9 per 100,000 population.[129]

- Crime rates are lower in areas of least deprivation (Hadley Castle localities) and higher for crimes such as shoplifting within town centres in urban areas.
- Some crimes such as bicycle theft, drug rates, robbery and public order offences are lower than the national averages across England. However criminal damage and arson, other crimes and shoplifting are higher than national averages[130].

1.1.1.2 Overall the highest crime rates within the borough are located within the Lakeside South localities (Figure 12.6).

[127] https://fingertips.phe.org.uk/profile/child-health-profiles/data#page/1/gid/1938133228/pat/6/par/E12000005/ati/102/are/E06000020/cid/4
[128] https://fingertips.phe.org.uk/profile/child-health-profiles/data#page/1/gid/1938133228/pat/6/par/E12000005/ati/102/are/E06000020/cid/4
[129] https://www.telford.gov.uk/download/downloads/id/4217/chapter_1_jsna_executive_summary_jsna_locality_profiles_jsna_topic_profiles_and_jsna_age-group_profiles.pdf
[130] https://www.telford.gov.uk/download/downloads/id/4220/chapter_4_staying_safe.pdf

Figure 12.6 Concentrations in overall crime rates in Telford and Wrekin, 2016[131]



Source: data.police.uk January to December 2016, rates calculated using Office for National Statistics, Mid Year Population Estimates, 2015

Access to Green Space / Recreation

12.4.14 Figure 12.7 measures accessibility to designated / formal open space such as public parks, playing fields, sports facilities, play areas and allotments.

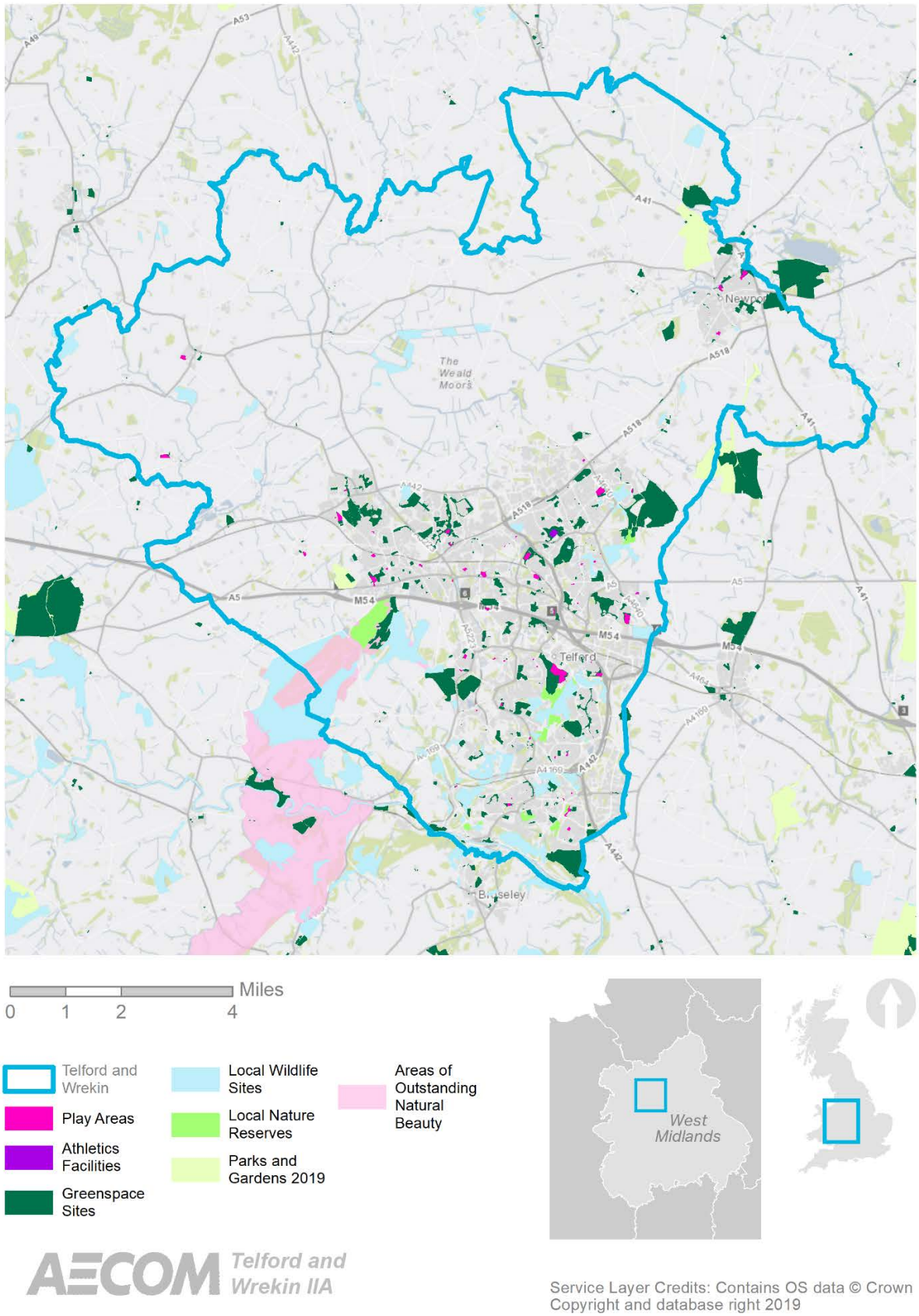
12.4.15 Within Telford and Wrekin there are several outdoor spaces used for recreational purposes such as sporting facilities, open green space, play areas for children and local wildlife and nature reserves (Figure 12.7). There are also private facilities such as golf courses, but these are not accessible to all, particular more deprived communities.

12.4.16 The following list describes various publically available facilities across the borough:

- There are over 50+ play areas across the borough which are a range of playgrounds, skate parks, and open spaces. The largest play park is the Telford Town Park (Visitors Centre) which also contains a Local Wildlife Site, Local Nature Reserve and Cherry Gardens.
- There is an Oakengates Leisure Centre that serves the borough and is surrounded by several greenspace sites such as the Wrockwardine wood.
- There are several local tennis court facilities located at Bowring Park GGS, Dawley Park, Donnington Recreation Centre, Hartshill Park and Tibberton Playing Fields.
- There are several bowling greens at Bowring Park and Dawley Park. There are cricket playing facilities at Bowring Park and Tibberton Playing Fields.

[131] Source: data.police.uk January to December 2016, rates calculated using Office for National Statistics, Mid Year Population Estimates, 2015

Figure 12.7 Access to sporting facilities / parks / recreation / *open green space*



Trends and future baseline

12.4.17 The population within Telford and Wrekin is ageing, and this is likely to bring about increased pressure over time on public services, as well as changing demand for particular types of housing.

12.4.18 Awareness around mental health is growing increasingly. There are currently services which provide help for those who are vulnerable to mental illnesses, however there is likely to be an increased focus on detecting mental illnesses in the earlier stages such as childhood.

12.4.19 The borough is split in that a portion of people are living within the most deprived areas and a portion in the least deprived. The people who are living in deprived areas are experiencing lower levels of good health. Access to greenspace and providing active transport measures would improve health and wellbeing in the longer term. However, tackling inequality is a major issue, and past trends indicate that inequalities in many areas have widened. This trend could continue, particularly with external factors such as Covid 19 and Brexit presenting a challenging context.

12.4.20 There are sufficient GP services within the borough, but those living in more rural areas experience accessibility issues. Access issues are likely to remain in rural areas given development trends.

12.4.21 There are a number of play facilities, open space and recreational resources within the borough. These are likely to be maintained in the future to support existing communities. The need to increase the number of quality of facilities may exist in some areas, but the ability to do this is dependent upon funding and / or development. The recent pandemic has reconfirmed what is already known about the value of green space to health. It may therefore be possible that Public bodies implement schemes to enhance accessibility to such assets. These are uncertain factors though.

12.5 Key issues

12.5.1 The following key issues emerge from the scoping exercise:

- Supporting healthy lifestyles, promoting access to green infrastructure, and tackling health inequality are key policy drivers at a national, regional and local level.
- There should be a greater focus on changing behaviours and encouraging active, healthy lifestyles, particularly in areas of greatest need.
- There is a focus on children's health and maternity as it is highly important children start their lives with healthy, nurturing environments. These habits could potentially link back to elements such as crime rates, increased health support and mental illness later on in life.
- Overall crime rates are higher than the national averages within the borough.
- There are several areas within the borough that are in need of enhanced greenspace and open space to promote healthy living, recreation and wellbeing.

12.6 Scoping decision

12.6.1 Considering the key issues discussed above it is proposed that the topic of health and wellbeing should be **SCOPED IN** to the integrated Appraisal. The following objectives and supporting questions are proposed as part of the IIA Framework.

IIA objectives	Assessment questions (will the option/ proposal help to...)
Support healthy, safe lifestyles and environments for all community groups; whilst seeking to close 'inequality gaps' and improve resilience to health issues.	• Ensure there is adequate access to open/ green space facilities across all areas within the local plan boundary. • Ensure that recreational spaces are kept to a high quality standard, are accessible and able to provide for required demands. • Ensure that places are designed that allow social distancing measures to be employed effectively. • Improve active transport accessibility to suitable housing, employment opportunities. • Reduce inequalities in health between the most and least deprived areas. • Support active travel. • Support mental health trends and continues to plan for and acknowledge mental health issues.

13. Economy and infrastructure

13.1 Introduction

13.1.1 The economy relates to the economic drivers and patterns, including the working patterns of populations, income, economic output, economic dependencies, retail, tourism, connectivity and skills/education.

13.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to these important factors.

13.2 Context review

National

13.2.1 An overarching objective of the **NPPF** is to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.

13.2.2 Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development.

13.2.3 Local plans should positively seek opportunities to meet the development needs of their area taking account of unmet needs from neighbouring areas. Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for employment, retail, leisure and other commercial development.

13.2.4 To support economic growth, planning policies should:

- Set out a clear economic vision and strategy which encourages economic growth;
- Set criteria or identify sites for inward investment to meet anticipated needs;
- Seek to address potential barriers to investment;
- Be flexible enough to accommodate needs not anticipated in the plan;
- Recognise and address the specific locational requirements of different sectors, including clusters or networks of knowledge and data-driven, creative or high technology industries, and for storage and distribution operations of various scales;
- Provide for large-scale transport facilities that need to be located in the area, such as interchanges for rail freight, public transport projects and roadside services, all of which either generate employment or have an impact on economic activity in an area;
- Support the rural economy.

13.2.5 The NPPF says that the role that town centres play at the heart of local communities should be supported, by taking a positive approach to their growth, management and adaptation.

13.2.6 The **UK 2070 Commission's final report on regional inequalities** details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes creating new global centres of excellence outside of the South East, strengthening the foundations of local economics, rethinking the housing crisis and harnessing cultural and environmental assets in areas outside of London. It goes on to suggest the implementation

of a comprehensive framework for inclusive devolution, provisions to equip the country for the skills of the future, provide fairer access to funds and develop a national spatial plan, which corresponds with corresponding plans for Wales, Scotland and Northern Ireland.

Regional

13.2.7 **West Midlands Local Industrial Strategy**[132] sets out to continue the economic success which has been seen in the area in recent years around productivity, economic output and connectivity (including the future prospects of the development of HS2 and implementation of 5G rollout in the area). It sets out a vision for a future economy based on a balanced approach and equity, with linked backing from national and local stakeholders. The combined authority (CA) has unlocked large sums of funding to focus on skills delivery. The region aims to take advantage of its connectivity (technological and transportation) to benefit its construction, infrastructure and service sectors through delivering innovative approaches to modern issues.

13.2.8 **The Marches Strategic Economic Plan**[133] focuses on the economy of Shropshire, Herefordshire and Telford and Wrekin, who together, contribute £14.3bn GVA to the UK economy. It focuses on delivering and capitalising on networks, physical and digital, connectivity and skills. Key sectors which future economic growth will focus on include: manufacturing, health and social care and defence.

13.2.9 **The Midlands Engine for Growth**[134] sets out a collaborative working partnership to achieve closer alignment, economic growth and productivity improvements. It responds to ambitious central government potential growth scenarios, aiming to deliver 300,000 jobs and economic growth of £34bn by 2030. Key targeted areas include: productivity, manufacturing, connectivity and knowledge.

13.2.10 **The Marches Local Industrial Strategy**[135] outlines the importance of the historic past of the industrial revolution, as well as the current engineering, high-tech food production and cyber security sectors in the area. Connectivity and securing a low carbon and inclusive economy are key areas of focus, with specific investments in manufacturing and engineering, food production, packaging and distribution, and cyber security all being specifically mentioned.

Local

13.2.11 **The Driving Growth and Prosperity Economic Development Strategy** (2016)[136] sets out key actions to deliver jobs, growth and an improvement to lives for all people who live in the borough; whilst ensuring investors, innovators and entrepreneurs see Telford as a natural home. Key actions include: creating business friendly conditions, identifying and growing opportunity sectors via support schemes, stimulating innovation and improving skills in the area.

13.2.12 **The Telford and Wrekin Infrastructure Delivery Plan**[137] outlines strategic requirements that will be necessary as a result of planned development. It will ensure that the area has the capacity (transport, utilities, social and environmental infrastructures) to meet the needs of the future; inherently supporting economic growth.

[132] West Midlands CA (2019) *Local Industrial Strategy,* West Midlands: HM Government.
[133] The Marches LEP (2019) *Strategic Economic Plan,* The Marches: The Marches LEP.
[134] HM Government (no date) *The Midlands Engine for Growth,* [online] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/482247/midlands-engine-for-growth.pdf [23/6/2020].
[135] The Marches (2019) *Local Industrial Strategy (draft),* [online] https://www.marcheslep.org.uk/download/marches_local_industrial_strategy/Marches-Local-Industrial-Strategy-Final-draft-20.12.19.pdf [23/6/2020].
[136] Telford and Wrekin (2016) *Driving Growth and Prosperity: Economic Development Strategy,* [online] https://www.telford.gov.uk/downloads/file/4407/c1d_enterprise_telford_economic_development_strategy_2016 [23/6/2020].
[137] Telford and Wrekin (2016) *Infrastructure Delivery Plan 2016-2031,* Telford: Telford and Wrekin Council.

13.2.13 **The Telford and Wrekin Local Plan (2011-2031)**[138] sets out policies relating to the economy in the area and beyond. Its key focuses are on the following areas:

- Policy EC1: Strategic employment areas
- Policy EC2: Employment in the urban area
- Policy EC3: Employment in the rural area
- Policy EC4: Hierarchy of centres
- Policy EC5: Telford Town Centre
- Policy EC6: Market Towns and District Centres
- Policy EC7: Local Centres and rural services
- Policy EC8: Out of centre and edge of centre development
- Policy EC9: Evening and night-time economy
- Policy EC10: Shopfront and advertisement design
- Policy EC11: Improving links to tourist destinations
- Policy EC12: Leisure, cultural and tourism development

13.2.14 **The Telford and Wrekin Local Transport Plan**[139] outlines a vision which aims to support economic growth in the area through connectivity, mitigating negative impacts of development, reducing congestion and boosting tourism.

13.2.15 The Telford and Wrekin programme to protect, care and invest to create a better borough[140] sets out plans which support the local economy and residents through connectivity between neighbourhoods, improving education, skills and training and protecting and creating jobs.

13.3 Focused literature review

13.3.1 Macro-economic factors, wealth creation and the local economy are determinants of health and wellbeing (Barton and Grant, 2006). Research shows that where we spend most of our time throughout our lives has an impact on our physical, mental, social, environmental and economic well – being. (*Carmichael, 2017; Barton, 2009; Barton et al, 2015*)

13.3.2 It is important that people have access to a good income and have a working job to support themselves otherwise this can be detrimental to people's health and wellbeing. The IMD 2019 considers income and employment as two main domains when analysing deprivation across the nation.

13.3.3 A case study showing the impact of the economy on regeneration and wellbeing, as well as the impact of the working environment and natural environment on health is the green space project in West Rhyl Wales. A new vibrant community was constructed, with open spaces and retail opportunities (Fischer et al, 2018). This suggests that people will be attracted to the area from the increase in green spaces with the hope people will then want to explore the new retail on offer. This is an example of a combination of open spaces and new retail influencing the economy. Glasgow's east end had a similar development strategy regenerating the area with the aim to create a vibrant new city district through a process of reinvention and reconnection (Fischer et al, 2018).

13.3.4 Research shows that if developers urbanise an area that urbanisation is associated with increased life expectancy and economic growth. It can be evident that green space is associated with improvements to public health and wellbeing and that urban sustainability such as modern parks may have associated increase in property values (Patrick, 2011).

[138] Telford and Wrekin (2018) *Local Plan 2011-2031,* [online] https://apps.telford.gov.uk/downloads/localplan/Telford_and_Wrekin_Local_Plan_2011_2031_adopted_Jan_2018.pdf [23/6/2020].
[139] Telford and Wrekin (2011) *Local Transport Plan*, Telford: Telford and Wrekin Council.
[140] Telford and Wrekin (2019) *Our programme to protect, care and invest to create a better borough,* Telford: Telford and Wrekin Council.

Examples of urban greening such as the New York City High Line project saw successes in economic development whilst also providing public space and urban greening through regentrification of an underutilised railway line (Rainy, J, 2014; Lang, S & Rothenberg, J 2017.)

13.3.5 However, research also suggest the process of new developments could temporarily disrupt the local economy due to noise, dust nuisance and air quality nuisance (Cave, et. al. 2019).

13.3.6 Gentrification could also lead to displacement of the residents the new development was intended to benefit (Wolch et al, 2014). Grant et. al. details that urbanisation has generally been associated with economic factors suggesting that there is perhaps an increase in jobs leading to a better working environment (Grant et. al, 2017).

13.3.7 On the other hand, the challenges to regeneration and health include 'stalled schemes' due to economically unviable affordable housing requirements result in no development and no regeneration.

13.3.8 McCay, 2017 suggests that mental health and urbanicity along with modern values and expectations have shaped recent developments across many cities around the world. The traditional high – street shops can be replaces by cafes and meeting places and thus changing the functionality of previously well – recognised shopping areas[141]. McCay states that there is a dystopian perspective on modernity which may impact traditional attitudes and values, thereby affecting an individual's self and self-esteem.

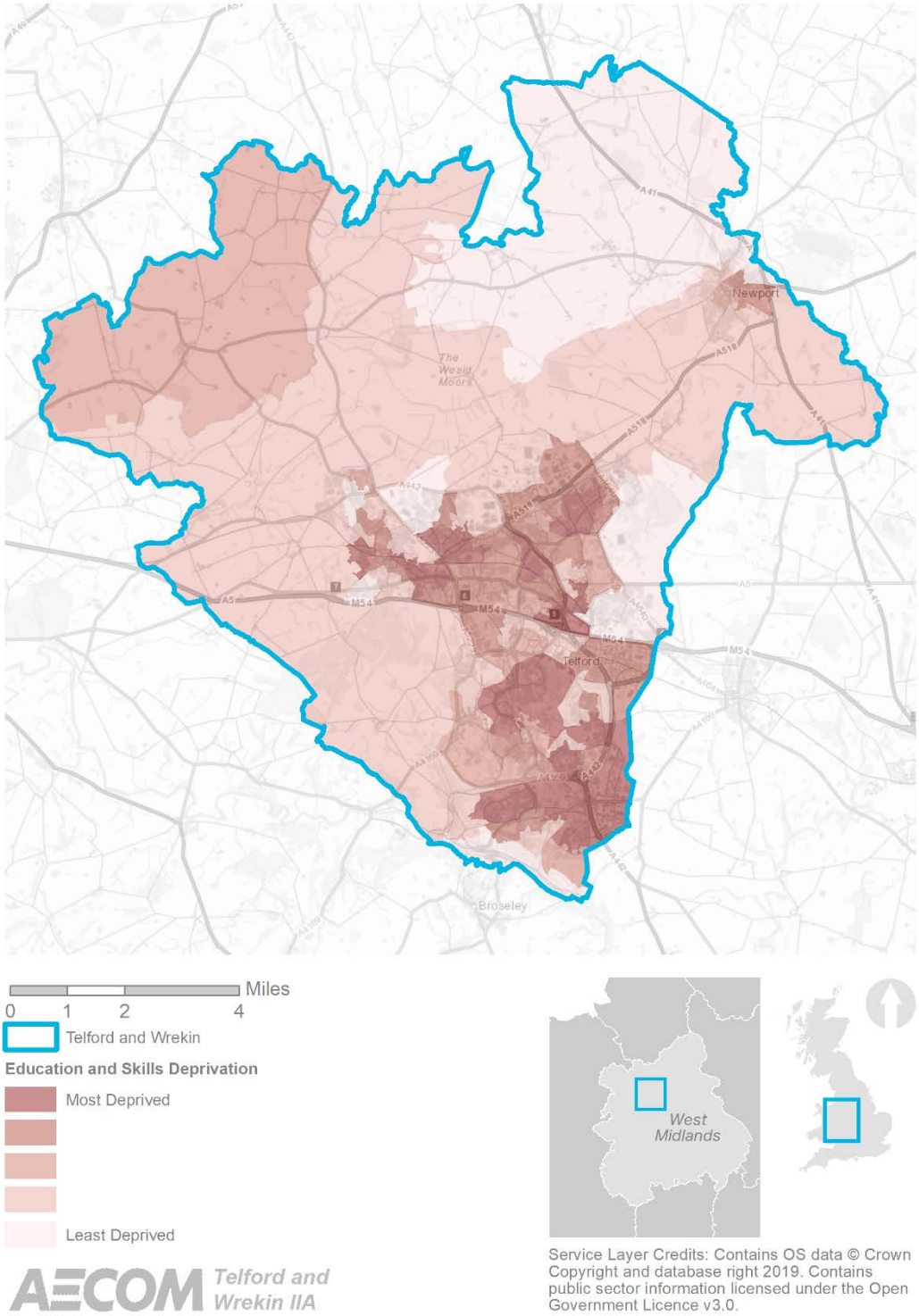
13.3.9 There are also associated issues with workplace productivity health and wellbeing. Bloom et. al. (2011) states that there are significant economic burdens on businesses and the economy due to non – communicable diseases such as mental illness.

13.4 Baseline review

Education and Skills

13.4.1 Figure 13.1 shows clear education and skills deprivation clustered around Telford and to a lesser extent Newport. The rural areas show significantly less deprivation than the more urban areas in terms of skills and education.

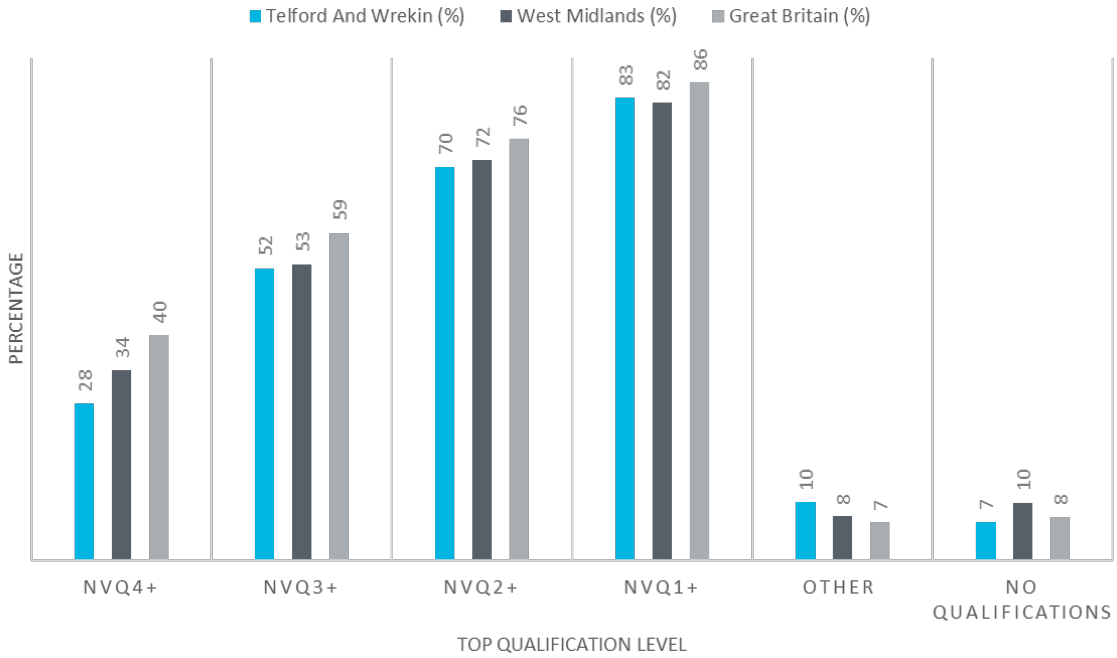
Figure 13.1: Map showing education and skills deprivation. Source: IMD, 2019.



13.4.2 The pattern follows a similar pattern to gross household income, showing a correlation between wealthy areas and lower levels of education and skills deprivation. Areas which show very high levels of deprivation alongside low levels are particularly prevalent around the periphery of Telford's built-up areas, especially around and to the north of Wellington. These areas may show extreme pockets of deprivation and community polarisation.

13.4.3 Figure 13.2 shows how Telford and Wrekin has lower rates of its population with high level qualifications compared to national and regional averages. Those with no qualifications are broadly in line with national averages, but lower than regional figures. The Borough has higher than average rates of 'other' qualifications, suggesting that there could be good access to a variety of alternative vocational courses in the area.

Figure 13.2: Graph showing highest level qualifications. Source of data: Nomis, 2018.

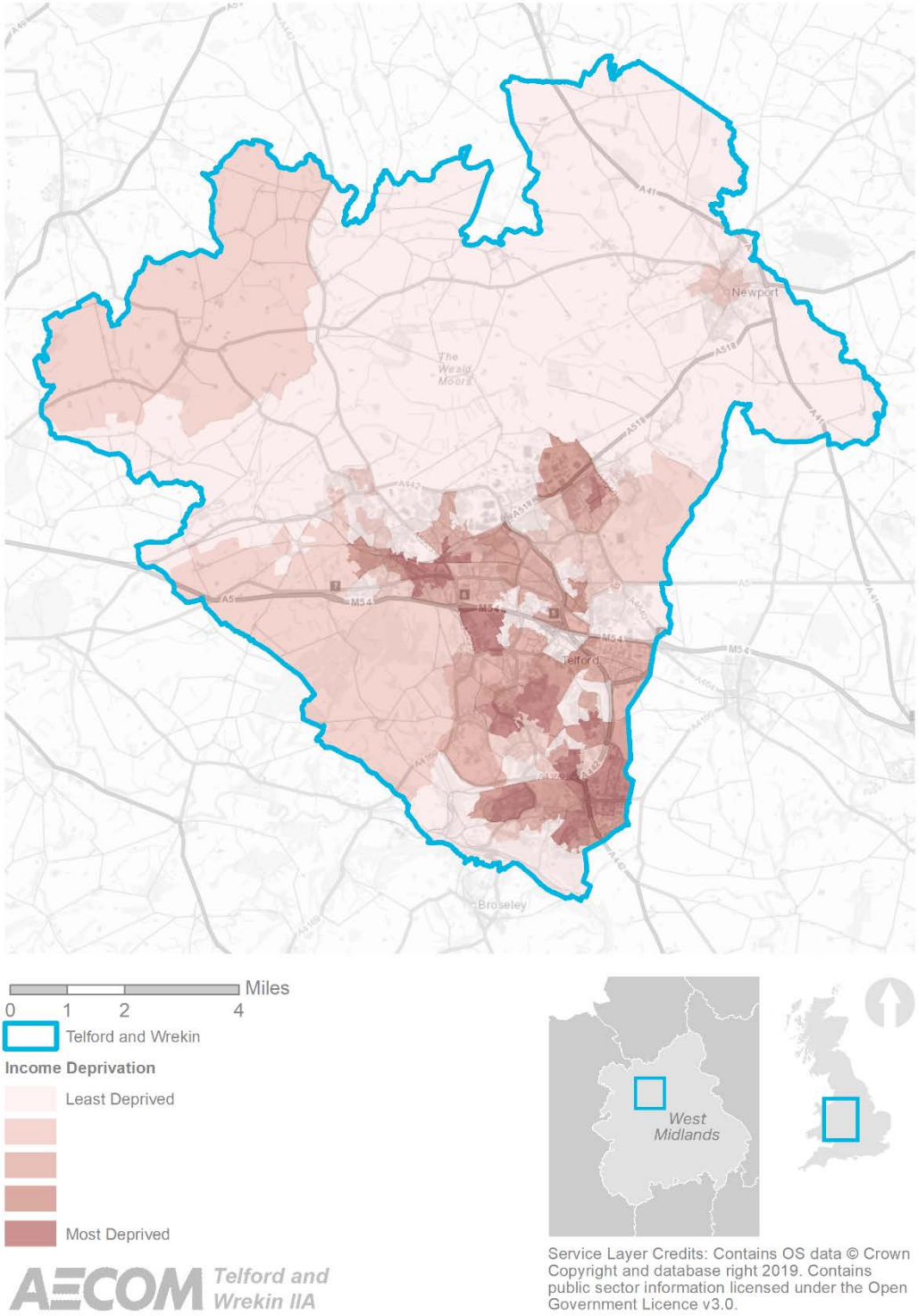


13.4.4 From 2011 to 2019, Telford and Wrekin saw the percentage of people with a Level 4+ qualification increase from 25.3% to 28.1%, and those without any qualifications decrease from 10.7% to 6.8%.

Income and economic activity

13.4.5 Figure 13.3 highlights Telford as experiencing the highest levels of income deprivation, with the more rural areas experiencing the least, with higher rates of income. As the patterns revealed previously, the built-up area of Telford shows signs that there are disparate conditions of income inequality spread across the urban area.

Figure 13.3: Income deprivation. Source: IMD, 2019.



13.4.6 Figure 13.4 shows that when looking at total Gross Value Added (GVA), Telford and Wrekin generates significantly lower economic value than regional and national equivalents. However, these figures are commonly skewed by large urban areas with large populations and concentrations of economic activity.

13.4.7 When looking at the figures as a factor of the local population, it is evident that Telford and Wrekin's economic output is in line with regional figures, even considering the fact that these numbers include the major urban area of Birmingham.

13.4.8 Both regional and local figures are significantly lower than national equivalents, however this is mostly attributed to the London-centric economy and financial service industry operating in the UK.

13.4.9 Central areas of London which host large densities of financial institutions pull the national figures up significantly. When City of London and Westminster are removed from the averages, national average GVA per head stands at £24,044, which is only marginally higher than Telford and Wrekin and the West Midlands.

Figure 13.4: Local authority GVA and GVA per head. Source: ONS, 2017.

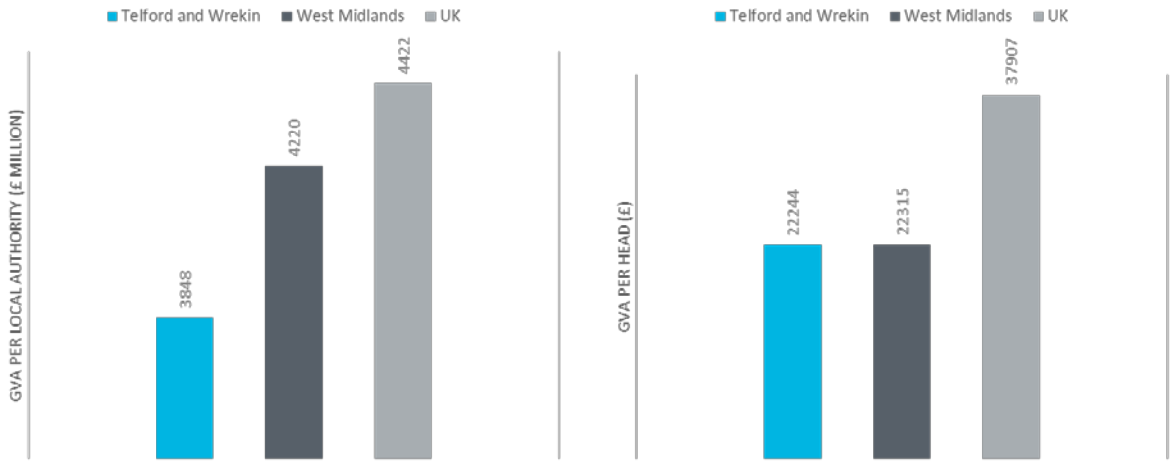


Figure 13.5: Graph showing economic status of working age population. Source of data: Nomis, 2018.

13.4.10 Figure 13.5 shows that Telford and Wrekin has a higher proportion of economically active residents than national or regional equivalents, however the figures are not significantly different across the board. The major differences in economic status of the Borough's population in comparison to regional and national figures is related to self-employment/employee proportions. It is evident that Telford and Wrekin has slightly lower than average rates of self-employment and a slightly higher than average rate of employees.

13.4.11 Figure 13.6 shows how Telford and Wrekin has lower than average rates of students; this perhaps links to the lower rates of education and skills attainment in the Borough. A focus on increasing the number of people in skills training and education in the area would be beneficial.

13.4.12 The Borough has higher than average rates of people classified as long-term sick and as demonstrated in the Equalities and Diversity Section, these issues are more prevalent in urban areas. Hence, health based interventions which promote health and active lifestyles are likely to benefit the economic wellbeing of the area.

13.4.13 Telford and Wrekin also has a higher than average rate of retirees, potentially putting a strain on certain services and heightening the importance of a built-form which is accessible to all. There could also be potential for high economic output around the care sector.

13.4.14 Figure 13.7 reveals that the Borough has lower than average rates of employment in high level and professional occupations, perhaps exacerbated by lower than average levels of educational attainment. In roles categorised as Groups 4-7 (administrative, trades, sales, care, customer services etc) local, regional and national figures are broadly in line with one another. When looking at more manual, process driven and elementary occupations, the Borough has higher than average rates.

Figure 13.6: Status of economically inactive populations. Source of data: Nomis, 2018.

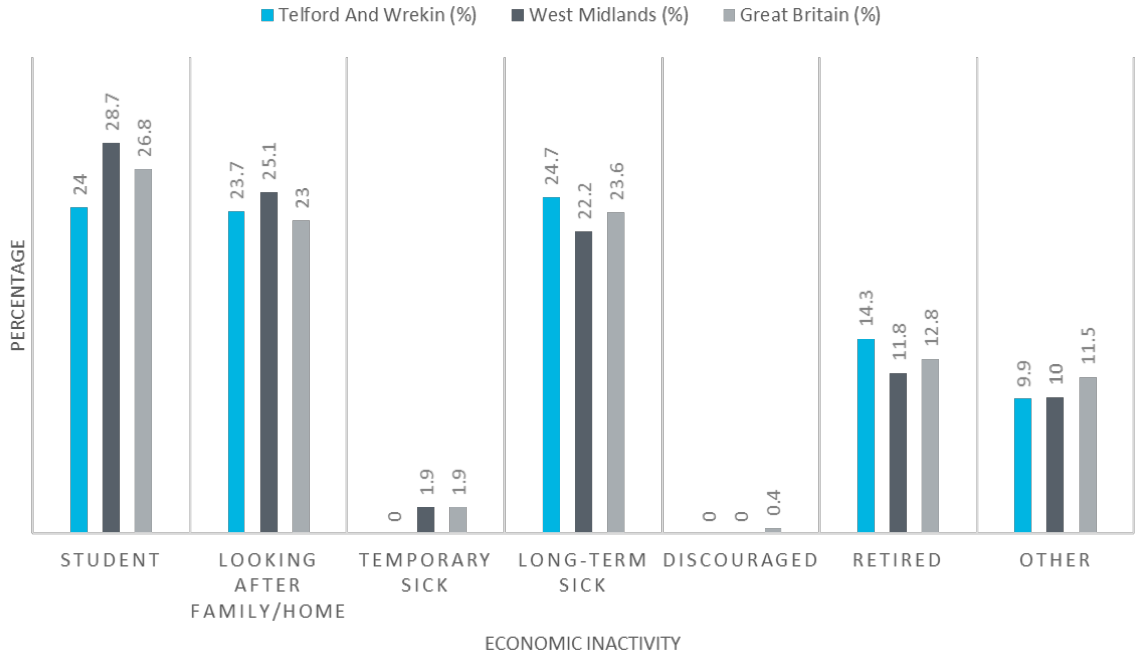
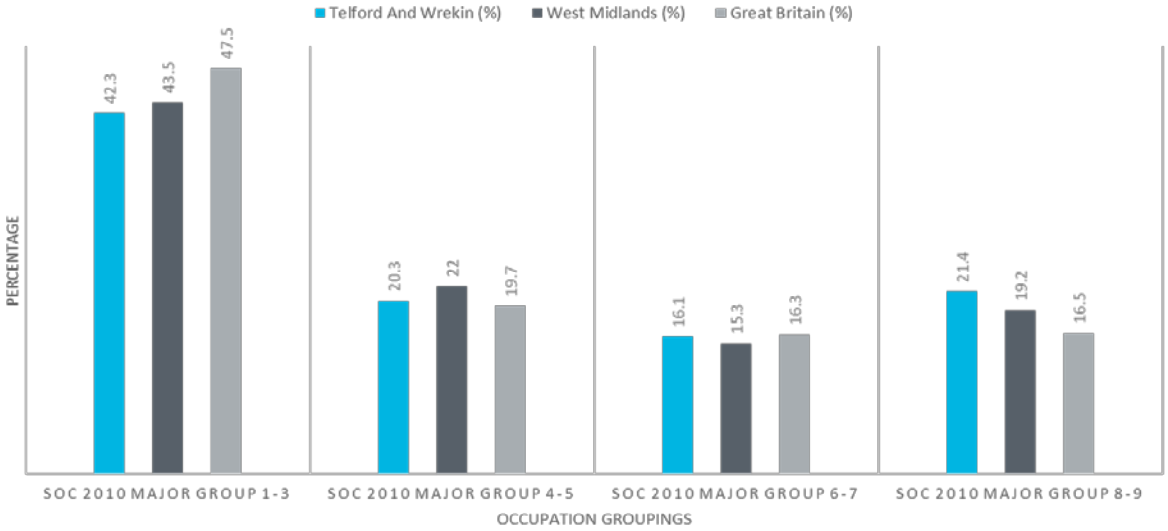


Figure 13.7: Occupation grouping rates Source of data: Nomis, 2018.



13.4.15 Since 2011[142], the rate of economically active residents in the Borough has been an increase of 4% of all working age residents, and in the same period, the rate of those employed in higher tier employment categories (1-3) has seen a rate increase of 4.7%. In the same time, of those who are economically inactive, those who want a job has declined from 34.6% to 25.8%, suggesting that it could get increasingly more difficult to increase employment rates.

Commuter movements

13.4.16 As Figure 13.8 shows, the Borough has an overall positive net inflow commuting rate, with the vast majority of the inflows coming from Shropshire. Wolverhampton, South Staffordshire and Stafford and the next highest origins of the Borough's commuters. In terms of the destinations of the Borough's outflow commuters, the majority of them travel to Shropshire, Wolverhampton and Birmingham.

13.4.17 For the Borough's infrastructure requirements, this means that transport routes between the top commuting origins and destinations are important to focus on to ensure efficiency, especially at peak journey times.

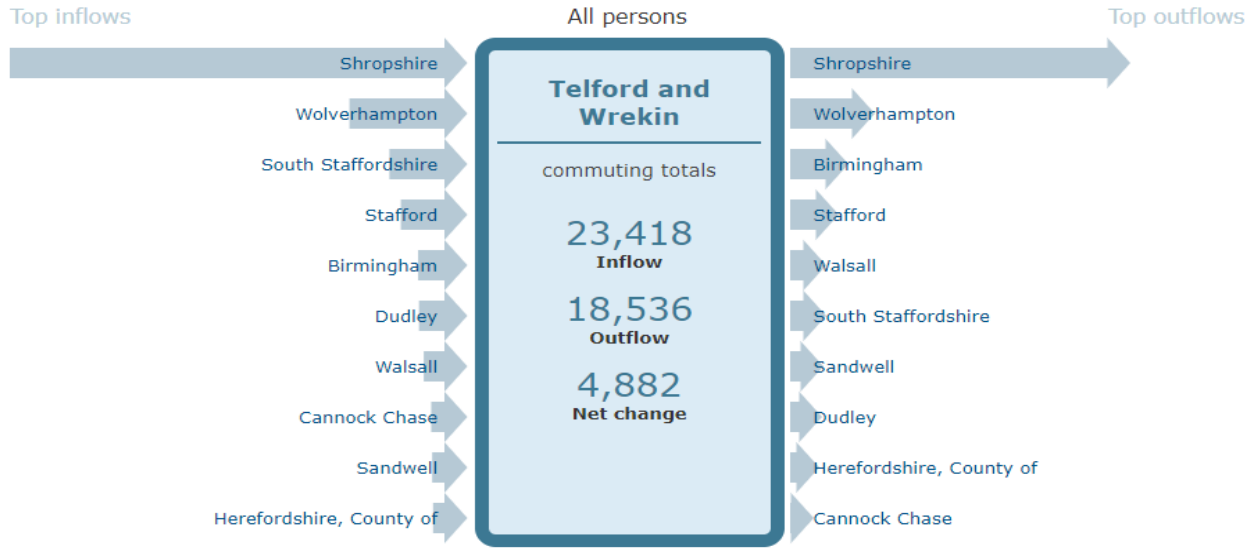


Figure 13.8: Key inflow and outflow commuting patterns. Source: Nomis (2011 Census data).

Town centres and retail

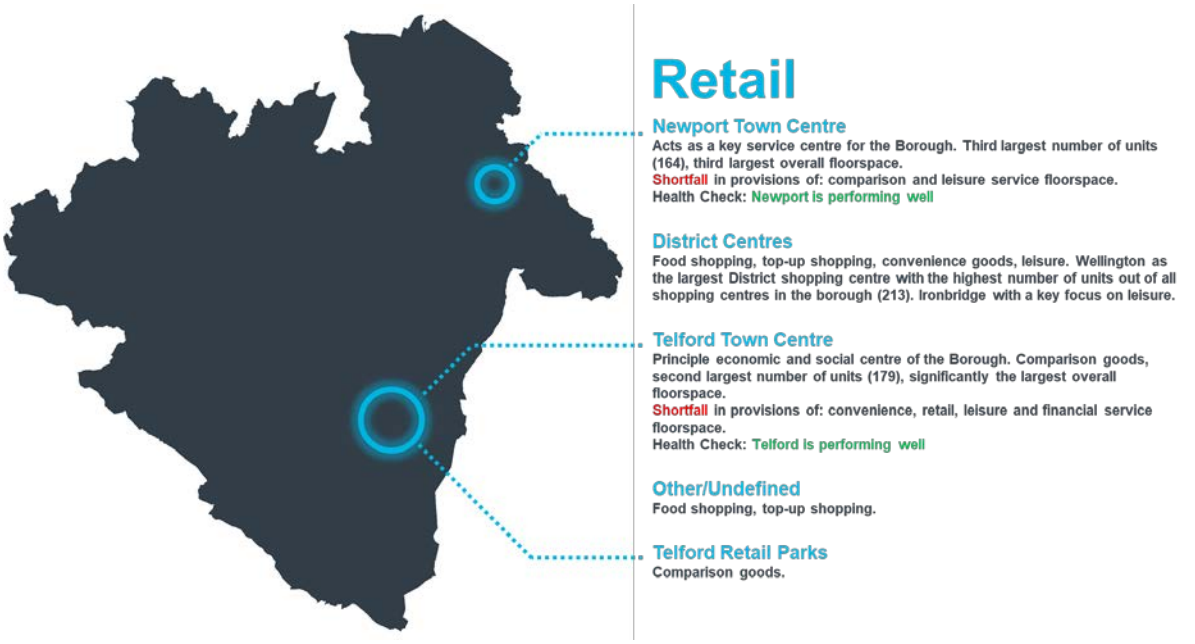
13.4.18 As Figure 13.9, overleaf, shows, Telford is the principle economic centre of the Borough. District centres make up a significant proportion of retail space within the Borough with individual centres such as Ironbridge having services and facilities which meet its needs (such as leisure services to meet the needs of the local tourism hotspot). [143]

13.4.19 Policy EC 4 of the adopted Local Plan sets out a hierarchy of centres in the district:

i. Principal Town Centre: Telford Town Centre;
ii. Market Towns of Newport and Wellington;
iii. District Centres of Dawley, Donnington, Hadley, Ironbridge, Lawley, Madeley and Oakengates;
iv. Local Centres.

[142] https://www.nomisweb.co.uk/reports/lmp/la/1946157172/report.aspx
[143] Telford and Wrekin (2014) *Retail and Leisure Capacity Study and Health Check,* [online] https://www.telford.gov.uk/downloads/file/4408/c1f-i_twc_retail_and_leisure_capacity_study_and_health_check_2014_-_final_report [10/7/2020].

Figure 13.9: Retail patterns in Telford and Wrekin (as at time of writing).

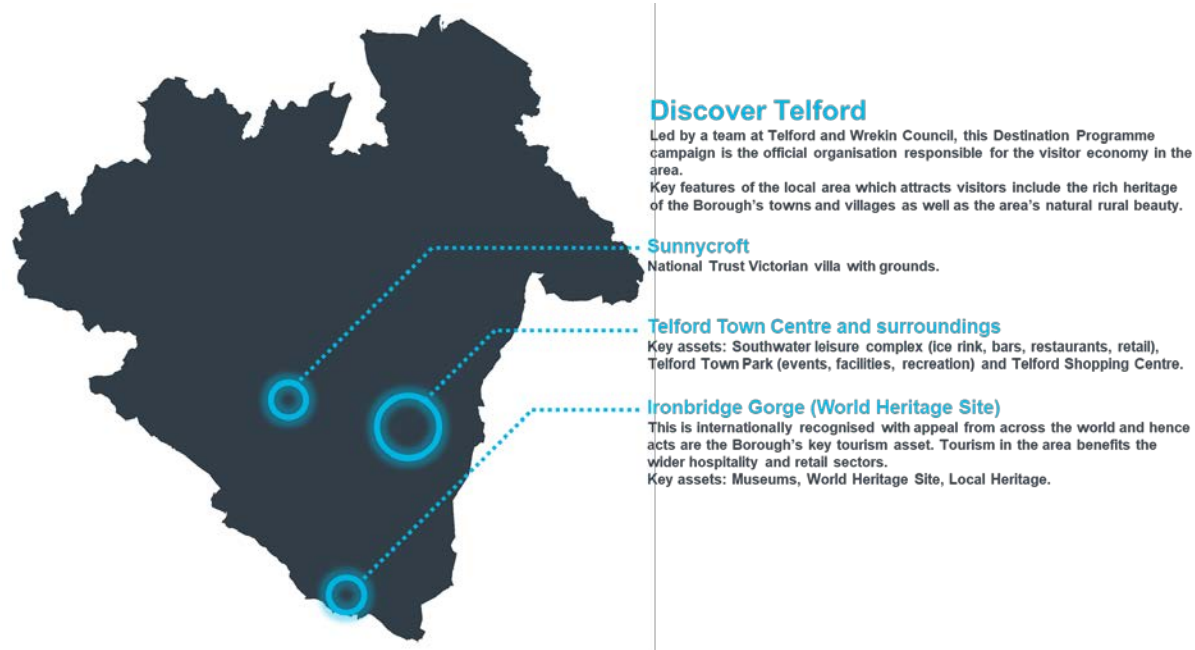


Tourism

13.4.20 Local tourism in Telford and Wrekin has links to the wider The Marches Local Economic Partnership, which helps to ensure approaches are integrated, maximising potential returns of schemes in the area.

13.4.21 Figure 13.11 shows a number of key tourism assets within the Telford and Wrekin Borough. The rural nature of the Borough with its historic towns and villages attracts visitors to the area in general, making the historic natural environments of the area important to protect.

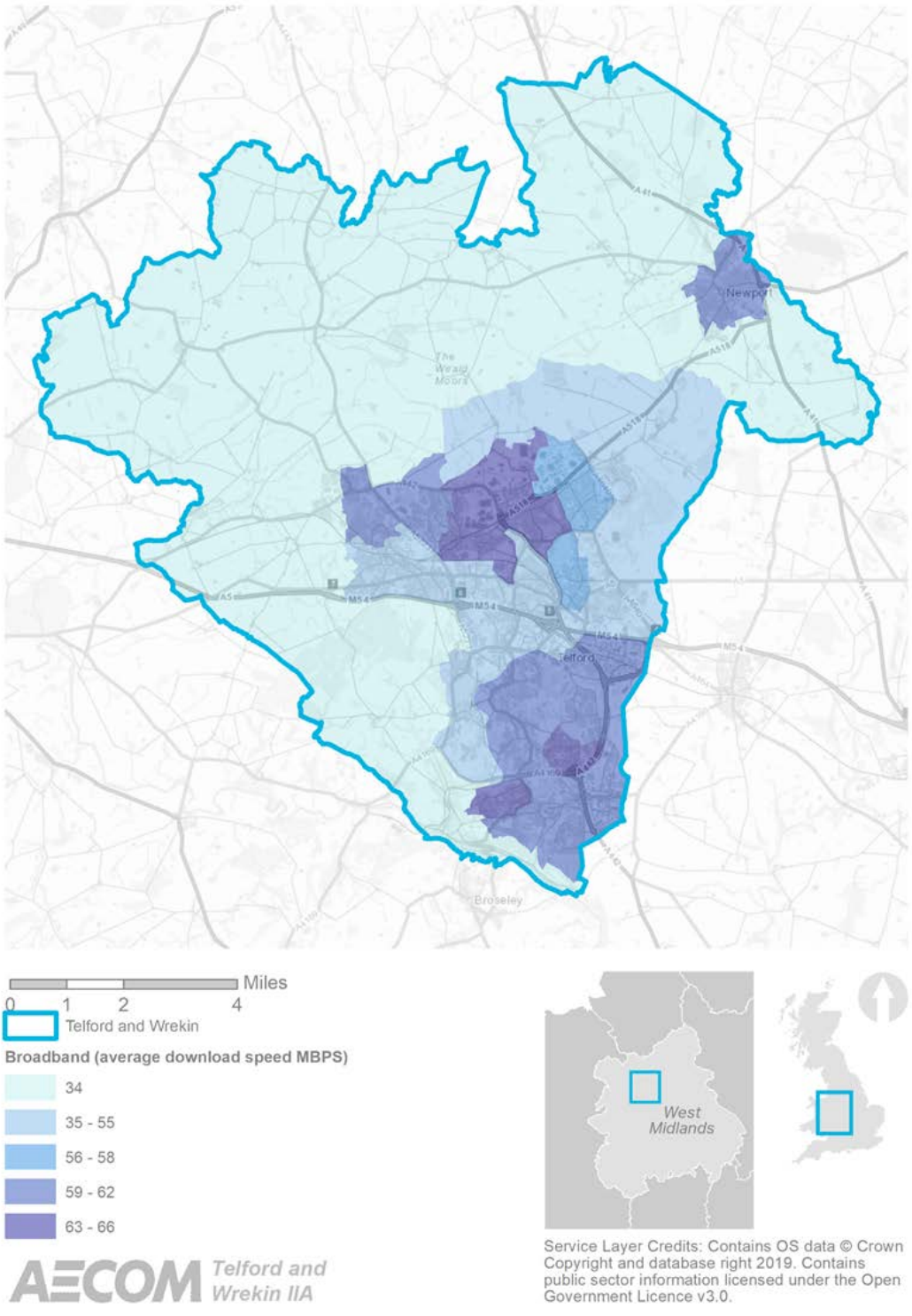
Figure 13.10: Key tourist attractions in Telford and Wrekin.



Broadband

13.4.22 Figure 13.12 reveals a trend whereby broadband download speeds are significantly higher in the more urban, built-up areas of the Borough. This is important as economic output is greatly helped by efficient digital connectivity and where it can be seen as negative that the rural areas have lower internet speeds, these areas are also less likely to have as much economic activity. That said, where home-working has become dramatically more normalised as a result of the Covid-19 pandemic, internet connections in residential areas is becoming significantly more important.

Figure 13.11: Average broadband download speeds. Source: Ofcom, 2017.



Trends and future baseline

13.4.23 The current situation regarding Covid-19 and Brexit will have implications for the structure and output of the economy at a regional, national and international scale. In the short term, as a result of the Covid-19 pandemic, there is likely to be a significant decline in economic output which will directly effect GDP/GVA, employment and investment. This is likely to have secondary implications for wellbeing (mental as well as physical health) as well as for the speed at which the delivery of projects will be realised as a result of delays.

13.4.24 There is also likely to be shifts in terms of the urban landscape, with initial expectations of a reduced use of public transport, increased personal mobility (active travel as well as motor vehicle use); a balance between an increase in traffic alongside higher rates of walking and cycling could result in no significant overall changes to congestion levels. Commuting times are likely to become more staggered, resulting in an expected reduction in air pollution. Whilst these impacts are severe, they are expected to last for a relatively short timeframe.

13.4.25 Where working patterns have significantly shifted during the Covid-19 pandemic, it is expected that rates of home-working could remain high and the decline of the high street as a retail centre could accelerate. This raises the importance of residential digital connectivity, securing the economic viability of highstreets and implementing creative solutions for the built environment in an increasingly digital world.

13.4.26 Whilst Shropshire is evidently the Borough's core and most frequent commuting origin and destination, the aforementioned impacts of Covid-19 on working patterns, including staggered work times and increased working from home rates, are likely to result in peak time transport infrastructural requirements being reduced.

13.4.27 In the longer term, the implications of Brexit are still not fully understood; trading arrangements are likely to shift, and issues with access to migrant labour are likely to prevail, especially for roles including, healthcare professionals, seasonal farm workers and hospitality staff. Tourism and international student visitors are also likely to see declining rates.

13.5 Key Issues

13.5.1 The following key issues emerge from the scoping exercise:

- Policy and literature reinforce the need for a healthy economy to support the wellbeing of a population.
- There is a growing need to decarbonise the economy and ensure that equitable growth it focused on a thriving local economy.
- Telford and Wrekin and the West Midlands have key economic drivers which focus on manufacturing/industry, physical and digital connectivity, healthcare and defence.
- It is evident that it is vital to ensure that new economic development appropriately mitigates its negative impacts, such as increased congestion or loss of open, green space.
- Telford shows signs of deprivation in terms of skills, education and income with a mixture of deprived and non-deprived areas across the built-up area, suggesting more isolated pockets of wealth/deprivation.
- The Borough is broadly less well qualified than nationally.
- GVA per head is in line with regional equivalents and marginally lower than national averages.
- Telford and Wrekin has marginally lower than average rates of self-employment.
- The Borough has higher than average rates of economically active people who are classified as long-term sick and retired.
- Shropshire is the Borough's key origin and destination for commuter patterns.
- Ironbridge World Heritage Site as well as other historic, natural and leisure attractions are the Borough's key tourism assets.

- Telford and Newport as the two main retail centres.
- Digital connectivity is significantly better in the built-up areas of Telford and Newport.

13.6 Scoping decision

13.6.1 Considering the key issues discussed above it is proposed that the topic of economy and employment should be **SCOPED IN** to the integrated Appraisal. The following objectives and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Build upon key industries and support growth, timely investment in infrastructure and economic diversification that has tangible benefits to the lives of local residents whilst addressing social inequalities.	• Ensure that adequate skills, education and training are in place to meet the needs of the local economy? • Reduce the polarised nature of urban inequalities? • Boost self-employment through schemes designed to support entrepreneurial activity? • Reduce the economic and healthcare costs of people classified as long-term sick? • Diversify the job offer for local residents? • Improve digital connectivity? • Ensure the protection of the natural, historic and leisure attractions the Borough has to offer? • Ensure the longevity and successful diversification of the Borough's retail centres where appropiate? • Build economic resilience and adapt to disruptive events such as the Covid19 pandemic.

14. Transportation

14.1 Introduction

14.1.1 The movement of people, goods and services is essential to support economic activity and social interaction.

14.1.2 This section provides a strategic review of the policy context, literature, and baseline position in relation to the following relevant factors.

- Key infrastructure
- Public Transport
- Active transport

14.2 Context review

International

14.2.1 The **Aviation strategy for Europe** aims at strengthening the competitiveness and sustainability of the entire EU air transport value chain. The strategy underlines that 'Europe must be a leading player in international aviation' and that 'growth in air traffic in Europe and worldwide needs to be reconciled with maintaining high standards of aviation safety and security, as well as reducing aviation's environmental footprint and contributing to the fight against climate change'

14.2.2 The UN's Sustainable Development Goals list 3 Goals in relation to sustainable transport and mobility. Goal 3, Goal 9 and Goal 11 are related to the 'Mobilising Sustainable Transport for Development report.

National

14.2.3 Key messages from the **National Planning Policy Framework**[144] (NPPF) include:

- Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:
  a. The potential impacts of development on transport networks can be addressed;
  b. Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised;
  c. Opportunities to promote walking, cycling and public transport use are identified and pursued;
  d. The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account; and
  e. Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.
- Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary

[144] MHCLG (2019) National Planning Policy Framework [online] available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

14.2.4 **National Planning Practice Guidance** (NPPG)[145] identifies that it is important for local planning authorities to undertake an assessment of the transport implications in developing or reviewing their Local Plan so that a robust transport evidence base may be developed to support the preparation and/or review of that Plan.

14.2.5 **The Transport Investment Strategy - Moving Britain Ahead** (2017)[146] sets out the Department for Transport's approach for future investment decisions and priorities. At the local level, the strategy relies on devolved decision-making where local communities have the power and will be backed by funding. Investment aims to achieve a transport network that is reliable, well-managed, safe, and works for everyone. The transport system should also provide smooth, fast and comfortable journeys, and have the right connections in the right places.

14.2.6 The **UK 2070 Commission's final report** on regional inequalities details the UK's need to dismantle the extremities of regional inequalities through large scale, long term and all-encompassing policies. The report recommends widespread commitments which see areas outside of London and the South East benefitting from investment and exploiting cultural capital to realise their potential. The report sets out a 10-point framework for action which includes delivering a connectivity revolution by creating a transformed public transport network between, within and beyond cities. It also recommends implementing a comprehensive framework for inclusive devolution by allowing places to 'step-up' via appropriate levels of devolution according to local ambition, need and capacity. A levelling up of the playing field with fairer access to funds and spatial priorities is also included.

Regional

14.2.7 The Midlands Connect is a non-constituent member of the new West Midlands Integrated Transport Authority (ITA). The authority aims to provide strong, clear leadership to strategic transport planning for the West Midlands Metropolitan Area.

14.2.8 The **Marches Local Enterprise Partnership (LEP)** is a working partnership between three local authorities to deliver jobs and housing. They have delivered several plans that relation to transport infrastructure and improvements to connect the wider region. The Marches LEP aim is to secure funding from the government for infrastructure and transport schemes. Telford was recognised as one of three Urban Powerhouses within the Marches Strategic Economic Plan. Other relevant plans directed at transport include:

- Midlands Engine Rail 2019[147]
- Midlands Connect Strategy: Powering the Midlands Engine 2017[148]
- Investing in Strategic Transport Corridors in The Marches 2016[149]
- The Marches Rail Study 2014[150]
- The Marches & Mid Wales Freight Strategy [151]

Local

14.2.9 Policy C1 (Promoting alternatives to the car) is the key sustainable transport policy of the **adopted 2018 Local Plan**, focussing on reducing emissions from vehicles by delivering new

[145] Department for Communities and Local Government (2012) National Planning Practice Guidance [online] available at: http://planningguidance.communities.gov.uk/
[146] Department for Transport (2017) Transport Investment Strategy - Moving Britain Ahead [online] available at: https://www.gov.uk/government/publications/transport-investment-strategy
[147] https://www.marcheslep.org.uk/download/Reports/Midlands-Engine-Rail.pdf
[148] https://www.marcheslep.org.uk/download/Reports/midlands_connect/midlands-connect-strategy-march-2017.pdf
[149] https://www.marcheslep.org.uk/download/Reports/reports/The-Marches-Strategic-Transport-Corridors-Report-June-2016.pdf
[150] https://www.marcheslep.org.uk/download/Reports/reports/140328-The-Marches-Rail-Study-Final-Report.pdf
[151] https://www.marcheslep.org.uk/download/Reports/reports/Final-Marches-and-Mid-Wales-Freight-Strategy.pdf

and enhanced walking and cycling infrastructure through the development process, and improving public transport services. Policy C2 of the Local Plan focus on safeguarding rail and transport corridors, whilst Policies C3 and C4 focus on the enhancing and delivering existing and new streets and highways.

14.2.10 The **Local Transport Plan (LTP3) 2011 – 2026** for Telford & Wrekin listed several goals which contribute towards improving local transport and the overall vision for the plan period to 2026. The plan realises transport issues within the borough such as unsustainable transport behaviours. There are six LTP goals which include; improving transport networks to result in efficient and reliable systems, highway maintenance, reduce carbon emissions and allow good access to jobs, education, healthcare, shops, leisure and improve road safety.

14.2.11 The **Telford and Wrekin Transport Growth Strategy 2016** sets out a long-term vision and strategy for transport infrastructure investment that is required to accommodate future housing, economic and employment growth.

Telford and Wrekin Walking and Cycling Strategy 2017 focusses on improving walking and cycling transport throughout the borough and looking at behavioural longer-term changes in transport modes. The main aims of the plan is to improve the health and wellbeing of residents and create longer-term active transport behaviours.

14.3 Focused literature review

14.3.1 Transport systems can be a key determinant in improving or deterring people's health and well – being. Evidence shows that commuting daily can cause stress and have an impact on our health and social well – being (Legrain et al. 2015).

14.3.2 Good access to public and active transport can improve people's health and well – being as car usage is often the most dominant mode of transport. Promoting greener modes of transport within regions and cities could significantly improve people's health for the better.

14.3.3 Research shows that driving when compared to other modes of transport such as active modes and public transport is the most stressful (Legrain et. al. 2015).

14.3.4 Cooper et. al. 2020 states that transport access, modes of transport and wider effects of transport infrastructure all effect health and well-being. The research report states that there are several groups who are more 'sensitive' to negative health impacts and this includes older people, younger people, economically disadvantages people and people with disabilities. Interventions such as public transport services improve access to health care services and overall health and well – being outcomes.

14.3.5 City dwellers are often located close to services and can walk to most resources, whereas individuals who live in leafy suburban areas are often leaned towards using cars as transport, leading to decreases in exercise (Oakes, et. al. 2007; Richardson et. al. 2012).

14.3.6 Frank et. al. 2004 discovered that land-use mix has associations with decreased likelihood of obesity across genders and ethnicities. Spending time commuting in a cars also has impacts on the likelihood of obesity, conversely, each km walked per day can slightly decrease the likelihood of obesity (Frank et. al. 2004).

14.3.7 This supports the view of implementing Transit oriented development (TOD) for public health reasons. TOD within cities are a transforming traditional towns for the better and can integrate transport and land use for positive health and well – being outcomes. TOD focusses on placing land use around public transport stations, active transport corridors and accommodating them with services, community infrastructure and urban design.

14.3.8 Clarke, et. al. (2019), found that shorter commute times benefits job satisfaction and increased leisure time satisfaction. It also reduces strain and improved mental health. On top of shorter commute times the study found that walking to work has similar benefits also. Hence shorter and walkable commute times is proven to improve aspects of subjective well – being.

14.3.9 Bringing workplaces and residential communities together would be beneficial to improving health and well – being.

14.3.10 Gatersleben et. al. (2013), researched the social perceptions of different types of travel modes within urban neighbourhoods. The study found that car usage has negative implications on urban communities thus affecting social perceptions. It also found that increased car usage within deprived areas has negative effects on how people view the area. Car use has negative effects on urban communities by affecting social perceptions (Gatersleben, et al. 2013).

14.3.11 A study conducted by Chatterjee et. al. (2019) reviewed the linkages between commuting and wellbeing. The study concluded that daily commutes to work can cause stress due to lack of control associated with congestion, crowding and unpredictability.

14.3.12 Morris & Zhou (2017) found that longer commutes are associated with higher wages of the worker and that longer commutes are associated with suburbia rather than principal city living.

14.3.13 Studies have also found that that people who partake in active transport as their commute to work generally have more satisfaction than those who drive a car or catch public transport (Chatterjee et. al. 2019 & Goryakin et. al. 2014).

14.3.14 Personal satisfaction increases when commutes are travelled with company and decreases with duration of commute regardless of mode of transport (Chatterjee et. al. 2019, Stutzer and Frey, 2008). Evidence suggests that morning commutes effect how people work and perform in the workplace or at home (Chatterjee et al., 2019), however Moriss and Zhou (2017) were of the opinion that longer commutes were no associated with mood during the commute or more meaningful work.

14.4 Baseline review

Key infrastructure

Strategic Road Network

14.4.1 Telford and Wrekin is served by several major roads, including the M54, A41, A518, A5, A442, A4169, A4640. There is a large concentration of local and major roads towards Telford and Newport. There is a council-led planned highways and transport projects initiatives to improve local road infrastructure including footpaths, parking and sustainable transport between 2020 - 2024.

14.4.2 There is also a vision to deliver £22m in investments for improvements to 200 schemes across the borough. Several maintenance road improvement schemes include upgrades to the A41, 4518, A442, Beverly Roundabout and Stafford Park 10 and 6. The AMR 2019 stated that there are further investments secured for highway improvements. This investment is needed as the 2011 census data stated that three quarters of residents drive to work.

Rail & Bus Network

14.4.3 In the 2011 census, approximately 5.3% of the boroughs population travelled to work either by public transport or active transport modes, and 66.8% of the borough travelled via car or van.

14.4.4 The census also revealed that approximately 1/5 of households within the borough do not have access to a car of a van. Connectivity for this majority will need to be supplied through active and/or public transport.

14.4.5 There are several bus services across the borough which support those who do not own a car. The 2011 LTP identified that services in rural areas especially have a lack of scheduled services and this is an issue for those who do not own a car. The ‘Wrekin Ride’ is a bus

service initiative which seeks and provides greater transport accessibility for those who live in rural areas. The service connects rural areas to the wider bus network.

14.4.6 There are four rail stations within the borough and several more directed towards Wolverhampton. In 2016, the Council secured funding for several transport investment projects, this should hopefully improve the rail and public transport systems and also the active transport networks such as the strategic cycle routes and town centre connections.

14.4.7 In 2017, as part of the Telford Town Centre Connectivity Package, replacement works of the footbridge connecting the Telford Central Railway Station to Telford Town Centre was underway and a new Disability Discrimination Act compliant bridge was introduced to connect services with transport. This has improved pedestrian connectivity with the town centre and major railway station.

Active travel

14.4.8 Active travel such as walking and cycling is beneficial from a public health and environmental perspective.

14.4.9 Currently, levels of active travel vary across Telford and Wrekin. The highest levels of walking and cycling occur in the denser urban areas, suggesting a strong correlation between a higher range of services, jobs and leisure opportunities and the likelihood of active travel rates being higher. With improvement between the town centre and railway stations underway already, and secured funding for active transport corridors, the active and passenger forms of connectivity should improve overtime. Many trips made within the borough are of less than 5km.

14.4.10 There are a number of cycle networks which are a located along the urban areas around the southern side of the borough, extending north-east towards Newport. The National Cycle Network is a UK – wide network of signed paths, routes and infrastructure dedicated for cycling walking, wheeling and exploring surrounding environments. There are three National Cycle Networks (NCN) that are located throughout the borough (Included within Figure 14.1). They cover a range of landscapes such as off-road routes, segregated paths, shared pedestrian / cycle passageways, highway cycle lands and advanced stop-line facilities.

14.4.11 The National Cycle Networks routes are as follows:

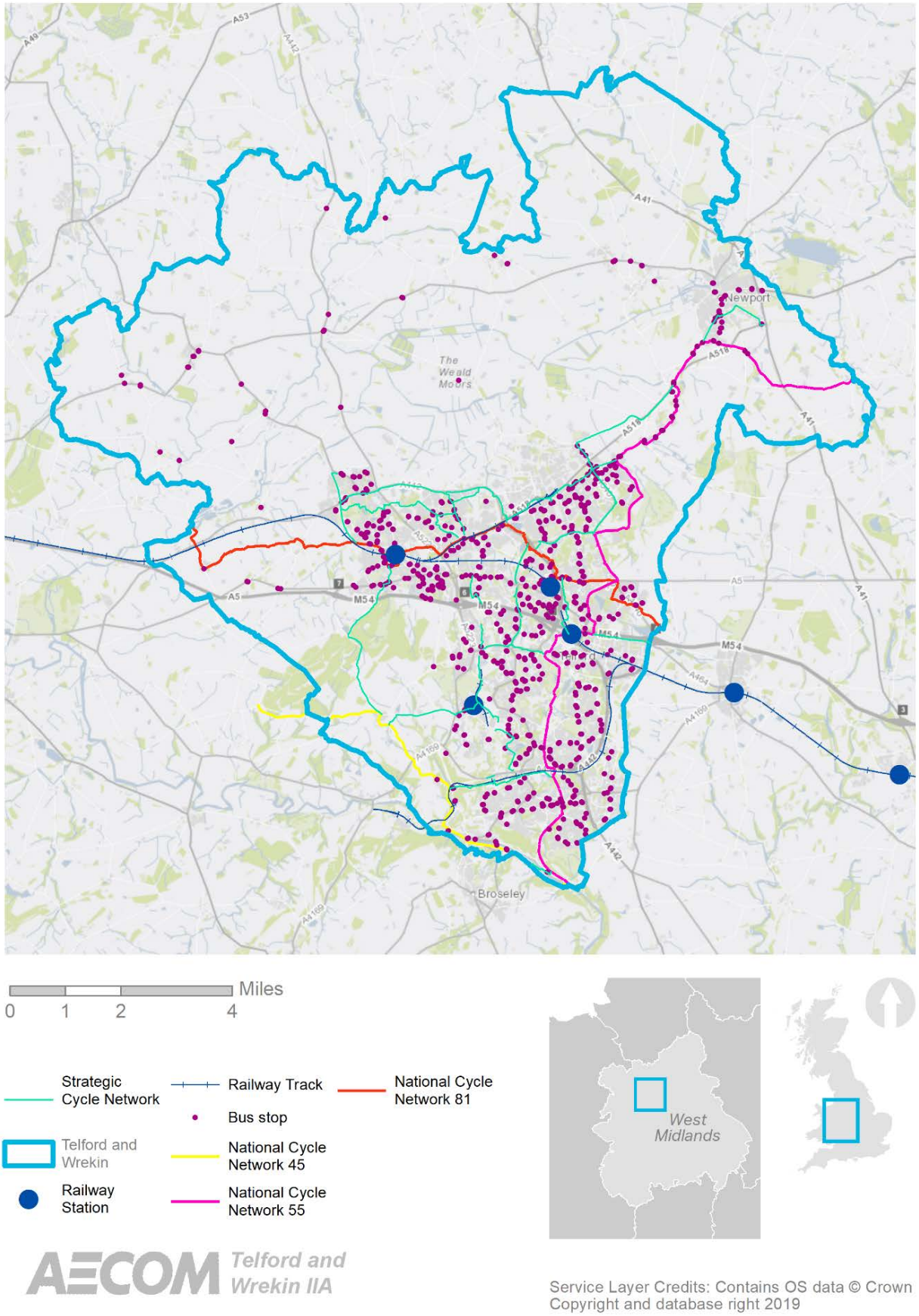
- Route 81 connects together Wolverhampton and Aberystwyth via Shrewsbury and Telford. The trail leads for approximately 145 miles and surpasses historic villages, industrial new towns, rivers and old canals.
- Route 55 connects Ironbridge to Preston and runs directly from the north of the borough to the south and onwards through Newport. This cycle route is the most traffic free path of the NCN networks within the borough.

- Route 45 runs for 276 miles from Chester to Salisbury past rolling hills, ancient monuments and different city landscapes. The route is extensive and allows the natural and historic environment to be more accessible in a sustainable mode.

14.4.12 The Telford and Wrekin Cycling and Walking Strategy 2017 suggests that there are targeted areas within the borough for greater opportunities to improve active transport networks. These areas include Telford Town Centre, Wellington, Dawley and Madeley. People residing in these areas are amongst the most deprived in the borough and may not have access to a car, public transport and other means of commuting. There may also be extensive health issues in these areas that could see benefits from promoting active transport corridors to improve overall health and wellbeing.

14.4.13 Other areas benefit from enhanced opportunities to achieve active travel for recreation. For example, rural areas within the borough are generally more affluent, live healthier lifestyles and have access to a countryside environments.

Figure 14.1. Active and bus transport linkages.



Trends and future baseline

14.4.14 There are various modes of travel within Telford and Wrekin, but using a car and driving to work tends to be the most favoured mode of transport. Whilst investments and support for alternative modes of travel exist, car travel is likely to remain the dominant mode throughout the plan period.

14.4.15 Investments in projects will likely see road and rail infrastructure improvements and also connecting these networks to the town centres within the borough and perhaps connecting the wider region as well. However, an overall increase in development and population could place greater pressure on both public transport networks and roads.

14.4.16 There is a focus on supporting and encouraging active transport travel behaviours. This is particularly relevant in the most urbanised areas within the borough as there are often associated health implications and a greater need for a change in behaviour to a more active healthy lifestyle. Some improvements are therefore likely to occur in this respect.

14.4.17 In the short term, the impact of Covid19 on travel behaviours is likely to remain. In one respect, it might reduce travel as more people work from home and make fewer trips. On the other, it could discourage public transport use and increase the proportion of trips made by car. There are still many uncertainties in this respect though.

14.5 Key issues

14.5.1 The following key issues emerge from the context and baseline review:

- There are various modes of travel within Telford and Wrekin, but using a car and driving to work tends to be the most favoured mode of transport.
- There are opportunities to expand and improve active transport corridors throughout the borough in particular in the urban areas towards the south where there may be a greater need for active travel in terms of health and wellbeing.
- There are investments and grants for transport network improvements, some of which have already occurred within the town centre and rail station. This should improve transport connections across the borough to the wider region.
- It is important to ensure the health and wellbeing of residents is met through creating longer-term behavioural changes in exercising and commuting. Many trips throughout the borough are within close proximity to one another and therefore there are opportunities to improve local scale active transport.

14.6 Scoping Decision

14.6.1 Considering the key issues discussed above it is proposed that the topic of transportation should be **SCOPED IN** to the integrated Appraisal. The following objectives and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Ensure that provision of transport infrastructure reflects local population and demographic needs, promotes sustainable modes of travel, connects new housing to employment, education, health and local services and maximises accessibility for all.	• Improve transport infrastructure throughout the borough including active and public transport? • Meet future transport trends and service those of all abilities? • Encourage active transport to improve the communities health in the longer term, whilst benefiting the environment? • Improve transport to ensure sustainable and active modes are most desired as used to connect people to places? • Ensure infrastructure is in place to support flexible working arrangements and positive changes in travel behaviours that emerge in response to crises such as Covid19.

15. Equality and Diversity

15.1 Introduction

15.1.1 Equality is about promoting equality of opportunity for all, regardless of background, circumstance or belief. As a public sector body, LRCA are required to pay due regard to section 149 of the Equality Act 2010, the Public Sector Equality Duty (PSED) in the development and delivery of their policies and plans.

15.1.2 This section provides a strategic review of the policy context, literature, as well as the current baseline position in relation to the protected characteristic groups as set out under the Equality Act 2010. These are:

- Age
- Disability
- Race/Ethnicity
- Religion or belief
- Sex
- Gender reassignment
- Sexual orientation
- Pregnancy and maternity
- Marriage/Civil Partnership

15.1.3 Although not officially a protected characteristic under the Equality Act, some local authorities choose to include socio-economic status and income as part of their equality impact assessment process and therefore this section also examines the socio-economic profile and levels of deprivation across the region including:

- Claimant benefits
- Safety and Security
- Community cohesion

15.2 Contextual Review

International

15.2.1 The **Universal Declaration of Human Rights** (UDHR) was proclaimed by the United Nations General Assembly in 1948. There are 30 Articles, seeking to ensure that all humans are treated as free and equal regardless of social background.

National

15.2.2 **The Equality Act 2010** legally protects people from discrimination both in the workplace and in wider society. The Act ensures that individuals with certain 'protected characteristics' are not indirectly or directly discriminated against. The Public Sector Equality Duty (PSED) is set out under section 149 of the Equality 2010. Under the duty public bodies must try to:

- Eliminate unlawful discrimination, harassment, victimisation and other conduct prohibited by the Act.
- Advance equality of opportunity between people who share a protected characteristic and those who do not.
- Foster good relations between people who share a protected characteristic and those who do not.

15.2.3 The Act explains that 'due regard' for advancing equality involves:

- Removing or minimising disadvantages experienced by people due to their protected characteristics.
- Taking steps to meet the needs of people from protected groups where these are different from the needs of other people.
- Encouraging people from protected groups to participate in public life or in other activities where their participation is disproportionately low.

15.2.4 **Building for Equality: Disability and the Built Environment**[152] is a House of Commons Report from 2017, which states that:

"There is a real need for a proactive, concerted, effort on the part of 'mainstream' systems and structures—be that national and local government or the professionals responsible for creating and changing our built environment—to take seriously the challenge of creating an inclusive environment"

15.2.5 Key messages from the **National Planning Policy Framework** (NPPF) include that planning policies should:

"Provide the social, recreational and cultural facilities and services the community needs, such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship, whilst guarding against the unnecessary loss of community facilities and services".

Regional

15.2.6 **West Midlands Local Industrial Strategy**[153] sets out a future vision which is based on equity and inclusive growth. It commits to continuing support for disadvantaged communities through locally led employment support work.

Local

15.2.7 **The Telford and Wrekin Mental Health Vision**[154] has a vision which focuses on supporting those who need it to live as independently as possible, targeting support across a range of places and formats and focusing on support based on need in order to continue to build independence and develop skills.

15.2.8 **The Telford and Wrekin Health and Wellbeing Strategy**[155] aims to ensure that everybody has equal opportunity to enjoy a fulfilling life and maximise potential. This strategy includes a focus on empowerment, support, health, wellbeing and maximised independence.

15.2.9 The Telford and Wrekin programme to protect, care and invest to create a better borough[156] sets out plans to support and protect the most vulnerable people in the area, as well as supporting those communities who are most in need.

15.2.10 **The Telford and Wrekin Clinical Commissioning Group** (CCG) holds responsibilities to reduce health inequalities and advance equality for people in the area[157]. It aims to deliver people centred, compassionate and flexible services which meet the needs of local residents.

[152] https://publications.parliament.uk/pa/cm201617/cmselect/cmwomeq/631/631.pdf
[153] West Midlands CA (2019) *Local Industrial Strategy,* West Midlands: HM Government.
[154] Telford and Wrekin (2016) *Mental Health Vision,* Telford: Telford and Wrekin Council.
[155] Telford and Wrekin (2016) Telford and Wrekin Health and Wellbeing Strategy (2016-2019).
[156] Telford and Wrekin (2019) *Our programme to protect, care and invest to create a better borough,* Telford: Telford and Wrekin Council.
[157] Telford and Wrekin CCG (2015) *Equality and Inclusion Strategy 2015-2019,* [online] https://www.telfordccg.nhs.uk/who-we-are/publications/strategies-and-plans/strategies/5619-telford-and-wrekin-ccg-equality-and-inclusion-strategy-201519/file [23/6/2020].

15.3 Focused literature review

15.3.1 There is a tendency for people belonging to protected characteristic groups, particularly young people, older people, disabled people, and BAME people, to experience poorer health.[158]

Age

15.3.2 Poor quality urban environments can negatively affect children's health, wellbeing and development will result in greater costs to society over the longer term.

15.3.3 Children are more vulnerable to adverse impacts of air and noise pollution.[159]

15.3.4 Interactions with nature can positivity improve children's behaviour, academic performance and social skills (*Keniger et. al. 2013*).

15.3.5 Neighbourhood greenery can affect children in a positive way (*Roberts et. al. 2013*).

15.3.6 Younger people aged 16-25 are more likely to be users of public transport and rely on this mode of travel to access employment, education and leisure opportunities[160].

Disability

15.3.7 Many disabled people live in accommodation that has not been suitably adapted to meet their needs and enable them to live independently. This is particularly the case for older people with disabilities.[161]

Race/Ethnicity

15.3.8 BAME groups experience a range of barriers in accessing housing suitable for their needs, with overcrowding being a particular issue[162].

15.3.9 Many Gypsies and Travellers are caught between insufficient supply of suitable accommodation and the insecurity of unauthorised encampments and developments. This results in a cycle of evictions, typically linked to threatening behaviour from private bailiff companies. Roadside stopping places, with no facilities and continued instability and trauma, become part of the way of life for this group. This results in deteriorating health, as well severe disruptions in access to, healthcare services, employment opportunities and education for children.[163]

Religion/Belief

15.3.10 Studies have revealed that there is a 'broken social mobility promise' for young Muslims where educational success did not translate into good labour market outcomes *(Shaw, et al, 2016)*

Sexual orientation / Gender Reassignment

15.3.11 The National LGBT Survey (2018) shows that LGBT respondents are less satisfied with their life than the general UK population

[158] EHRC (2010); *How Fair is Britain?* Report. Available at: https://www.equalityhumanrights.com/sites/default/files/how_fair_is_britain_-_complete_report.pdf [accessed January 2018]
[159] World Health Organisation (2018) Air Pollution and Child Health: Prescribing Clean Air https://www.who.int/ceh/publications/air-pollution-child-health/en/
[160] DfT (2018) National Travel Survey https://www.gov.uk/government/statistics/national-travel-survey-2018
[161] Equality and Human Rights Commission (EHRC) (2010), How fair is Britain? Equality, human rights and good relations in 2010. Available online at: http://www.equalityhumanrights.com/en/our-work/how-fair-britain.
[162] Race Equality Foundation (2013), Understanding ethnic inequalities in housing: analysis of the 2011 census. Available online at: http://www.better-housing.org.uk/sites/default/files/briefings/downloads/Housing%20Briefing%2023.pdf.
[163] EHRC (2009), Inequalities experienced by Gypsy and Traveller communities. Accessed June 2020: http://dera.ioe.ac.uk/11129/1/12inequalities_experienced_by_gypsy_and_traveller_communities_a_review.pdf.

15.3.12 The existing evidence suggests that LGBT people are at greater risk than the general population of being victims of crime

15.3.13 The NIESR report found that the existing evidence base points to LGBT people being more dissatisfied with health services in comparison to those who are not LGBT

15.3.14 Gentrification can have a disproportionate impact on different members of the LGBTQIA+ community. Black, Asian and minority ethnic (BAME) within the LGBTQIA+ community have not seen the same level of increase in their purchasing power during the last decade and have therefore been targeted by gentrification more deeply than white members of the community. BAME people continue to be kept out of these safe neighbourhoods because their purchasing power remains below their white counterparts.

15.3.15 Young people who identify as LGBT are over-represented within the young homeless population in the UK[164].

15.3.16 A UK survey of transgender people in 2012 showed that respondents avoided some activities due to a fear of being harassed or identified as transgender. Many said they avoided public toilets and gyms, and around a quarter said they avoided clothing shops, leisure facilities, clubs or social groups, public transport, restaurants or bars. Those with 'clear and constant gender identities' as men avoided many more situations than those with 'clear and constant identities' as women. This was particularly the case with public toilets, with 77% of transgender men avoiding them.[165]

Pregnancy and Maternity

15.3.17 Pregnant women can be more susceptible to experience negative effects associated with development and the built environment. For example, pregnant women can be more susceptible to poor air quality[166], which can have a negative impact on birth weight.

15.3.18 Pregnant women need good access to health care facilities, particularly towards the latter stages of pregnancy. Accessibility is therefore an important issue for this group.

15.3.19 With regards to income, housing and wellbeing, young mothers (and fathers) may be more likely to suffer from deprivation and struggle to find affordable housing.

Social interaction

15.3.20 Research suggests that the presence of trees and grass supports social interaction with one another (*Kuo et. al. 1998*)

15.3.21 Living within close proximity to green spaces delivers reductions in crime rates (*Kuo et. al. 1998, Keniger et. al. 2013*).

15.3.22 Urbanisation can cause negative impacts on individuals including social isolation, lack of social support, interracial conflict and increased incidence of crime and violence. (*Health Council Netherlands, 2004).*

[164] Albert Kennedy Trust (2015) LGBT Youth Homelessness: A UK National Scoping of Cause, Prevalence, Response & Outcome. Accessed June 2020 https://www.homeless.org.uk/sites/default/files/site-attachments/201512%20-%20Young%20and%20Homeless%20-%20Full%20Report.pdf
[165] EHRC (2015) Is Britain Fairer?: Key Facts and Findings on Transgender People [online] available at: <https://www.equalityhumanrights.com/sites/default/files/key_facts_and_findings-_transgender_0.pdf> [accessed 22/02/19]
[166] https://www.nhs.uk/news/pregnancy-and-child/air-pollution-associated-with-low-birthweight/

15.4 Current Baseline

15.4.1 The equalities baseline examines the spatial distribution of groups with protected characteristics across the region. This is necessary for the identification of potential equality impacts in order that an assessment can be made as to the potential level of impact the spatial development strategy may have on specific groups.

Age

15.4.2 Figure 15.1 shows that Telford and Wrekin have a larger than average proportion of younger (aged 0-14) people in the Borough than regional and national levels, though, the differences are not significant. It is also evident that they have lower rates of older people. This is likely to reduce the burden on services such as social care and healthcare facilities.

15.4.3 Figure 15.2 shows that the Borough has a large population aged 45-55. This could indicate that over the medium term, there could be a large increase in retired people within the borough and in the longer term, an increase in the old age dependent population.

Figure 15.1: Dependent age categories. Source: ONS, 2018.

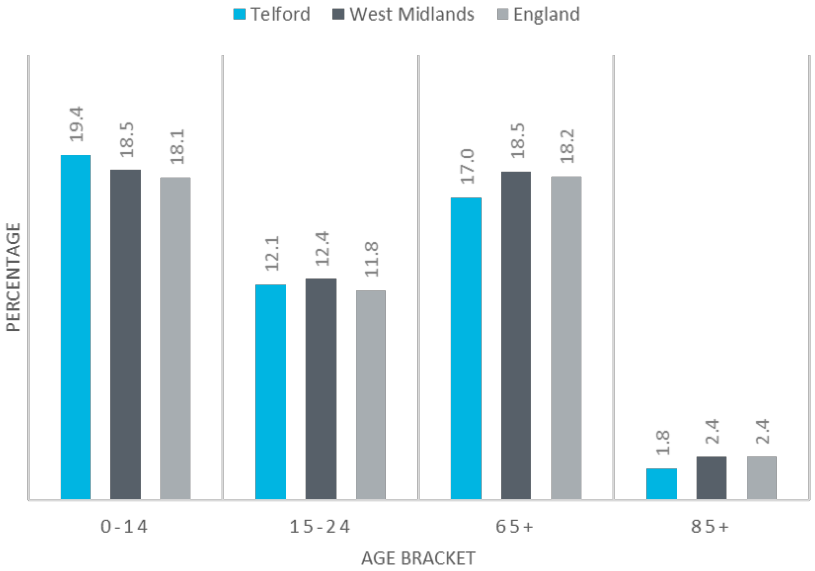
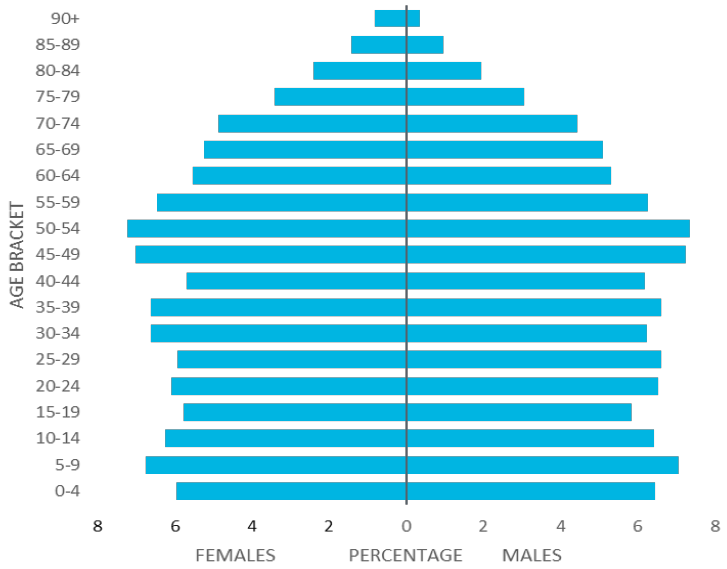
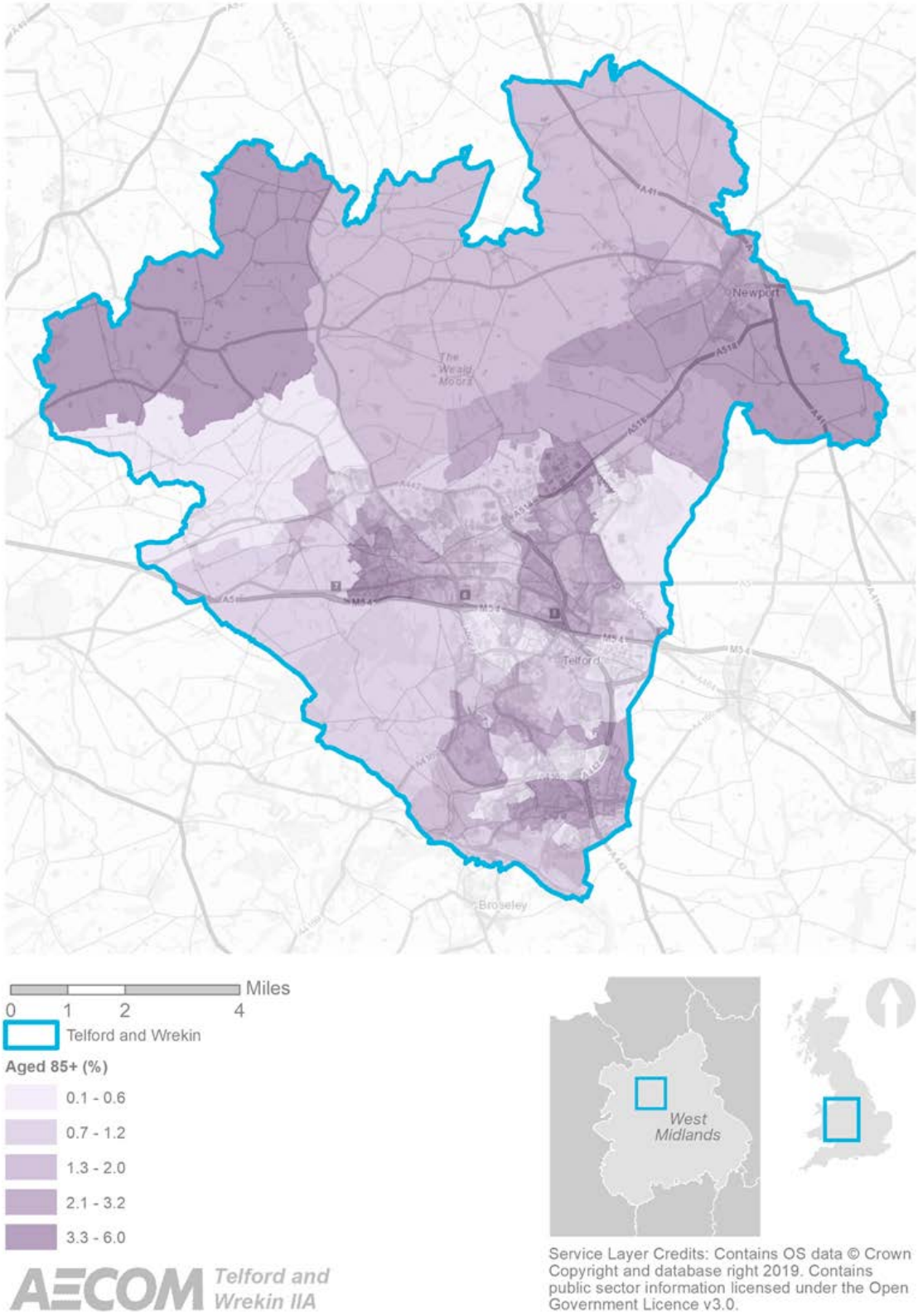


Figure 15.2: Population pyramid for Telford and Wrekin. Source: ONS, 2018.



15.4.4 Figure 15.3 shows a mixed distribution of elderly populations across the Borough, with concentrations found across both urban and rural areas. It is important to note that this data can be skewed by the presence of old age car facilities.

Figure 15.3: Spatial distribution of elderly population (aged 85+). Source: Census, 2011.



Disability

15.4.5 Figure 15.4 shows that local, regional and national levels of disabilities or illness affecting day-to-day activities are all broadly similar.

15.4.6 Figure 15.5, overleaf, adds spatial detail to these figures; showing that although long-term limiting illness of the population generally shows a mixed pattern across the city region, the more rural areas show lower rates of people with a long-term limiting illness and urban areas show a high rate of long-term limiting illness. The exception to this trend is in the north west of the borough where rates are high.

Figure 15.4: Population limited in their daily activities by a disability or illness. Source of data: 2011 Census.

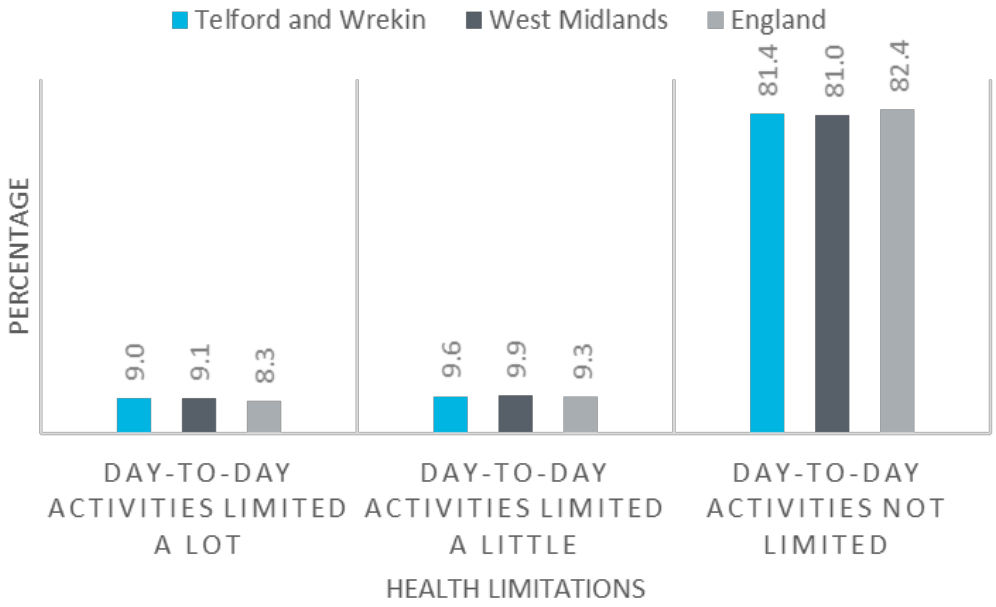
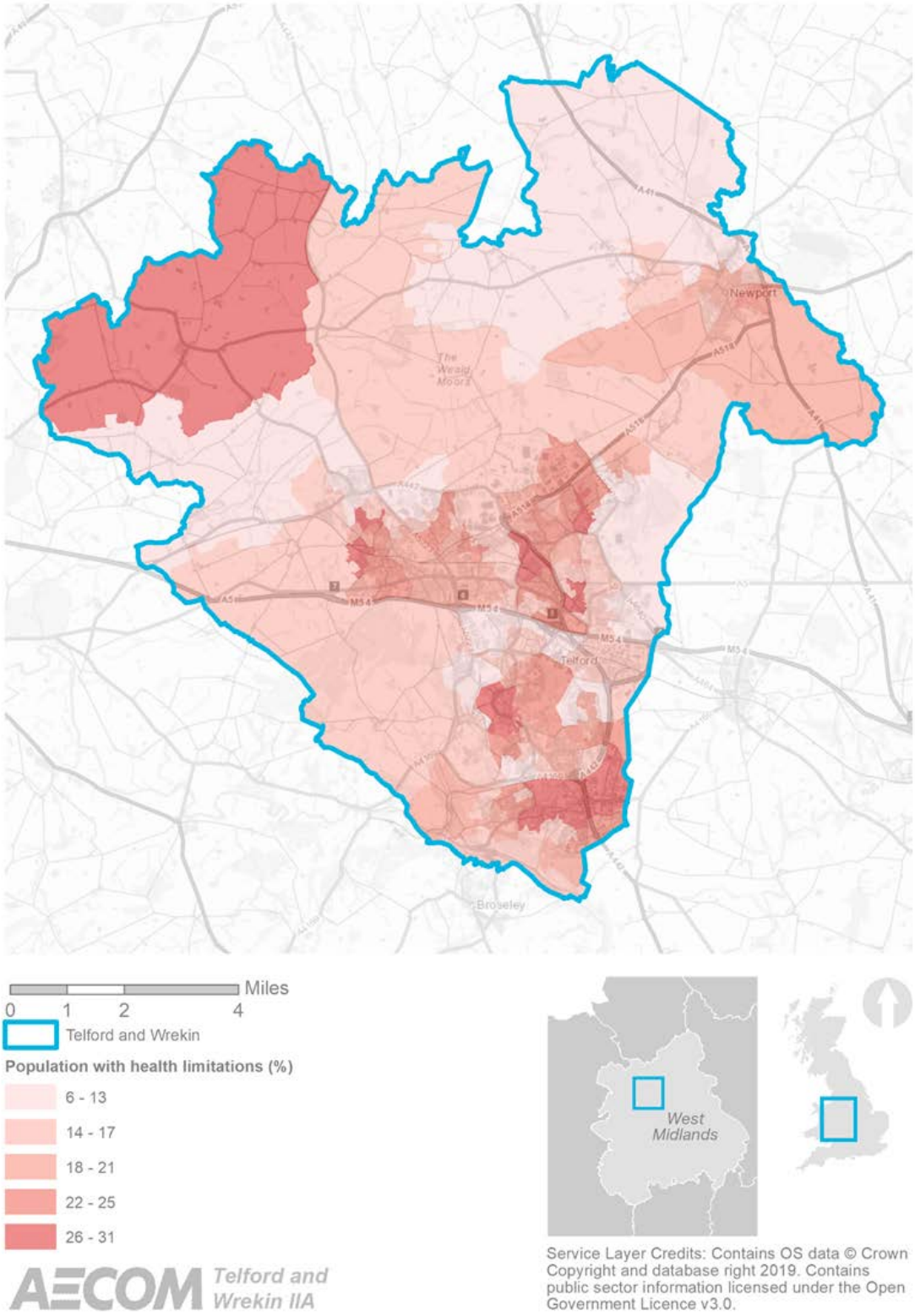


Figure 15.5: Map showing the distribution of area based rates of people identifying as being limited a lot due to disability or illness.[167]



[167] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/833992/File_8_-_IoD2019_Underlying_Indicators.xlsx

Race / Ethnicity

15.4.7 Figure 15.6 shows that Telford and Wrekin has a significantly higher proportion of residents classified as 'white', and lower rates of all other ethnic groupings including: Mixed, Asian, Black, African, Caribbean, Black British or other.

15.4.8 Figure 15.7 adds a spatial element to the data, revealing a pattern whereby the more urban, built-up areas in the Borough generally higher rates of people identifying as ethnic minorities. This shows that in some areas the non-White British population is a high as 50%, whereas other is as low as 2%.

Figure 15.6: Ethnic groupings. Source: Census, 2011.

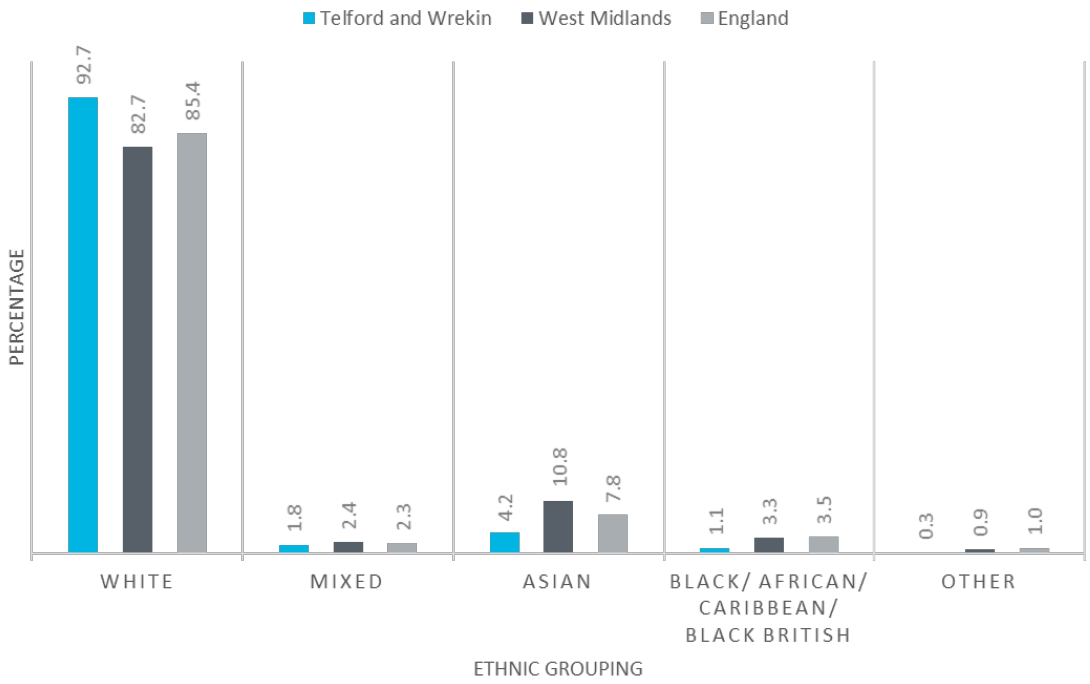
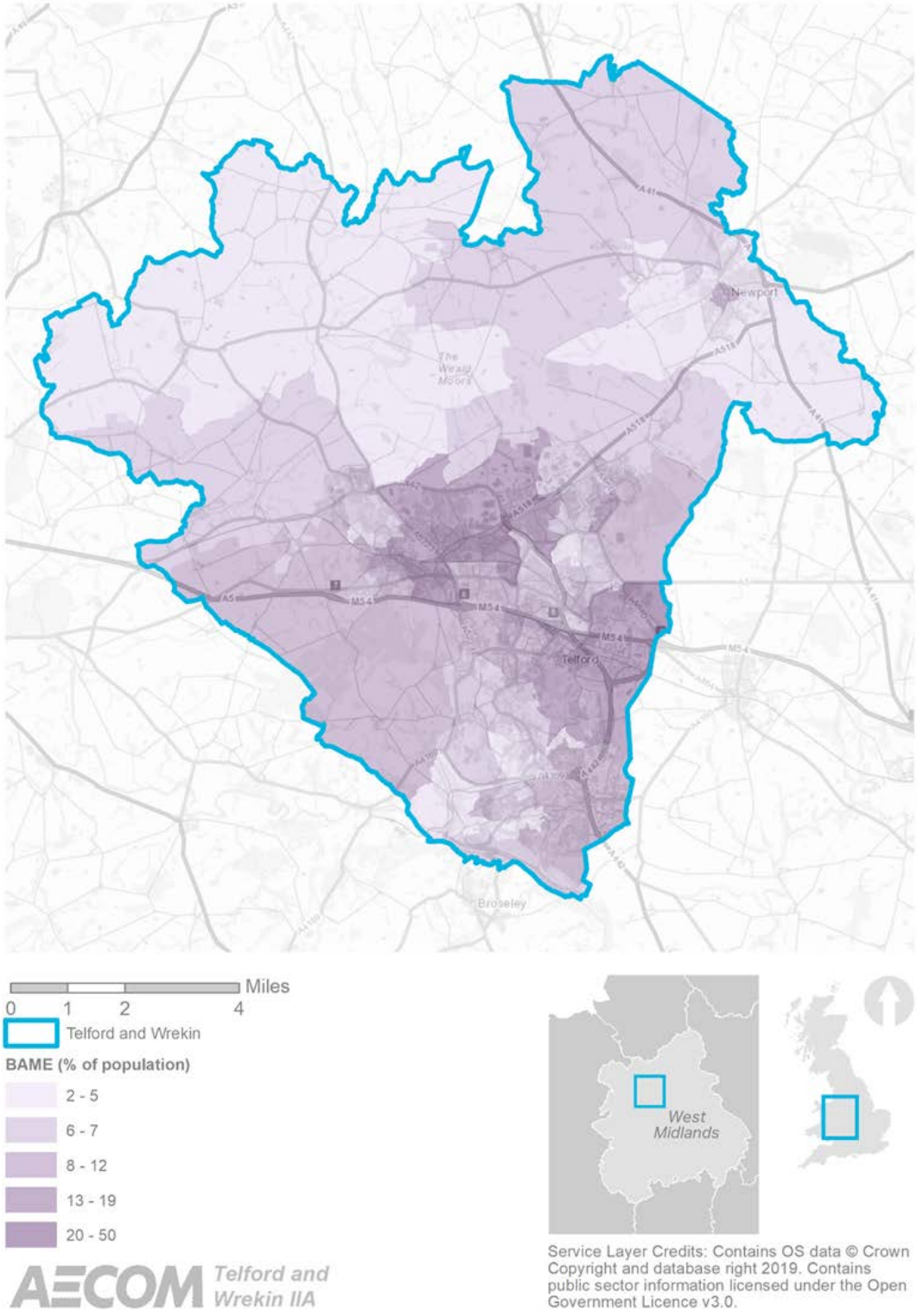


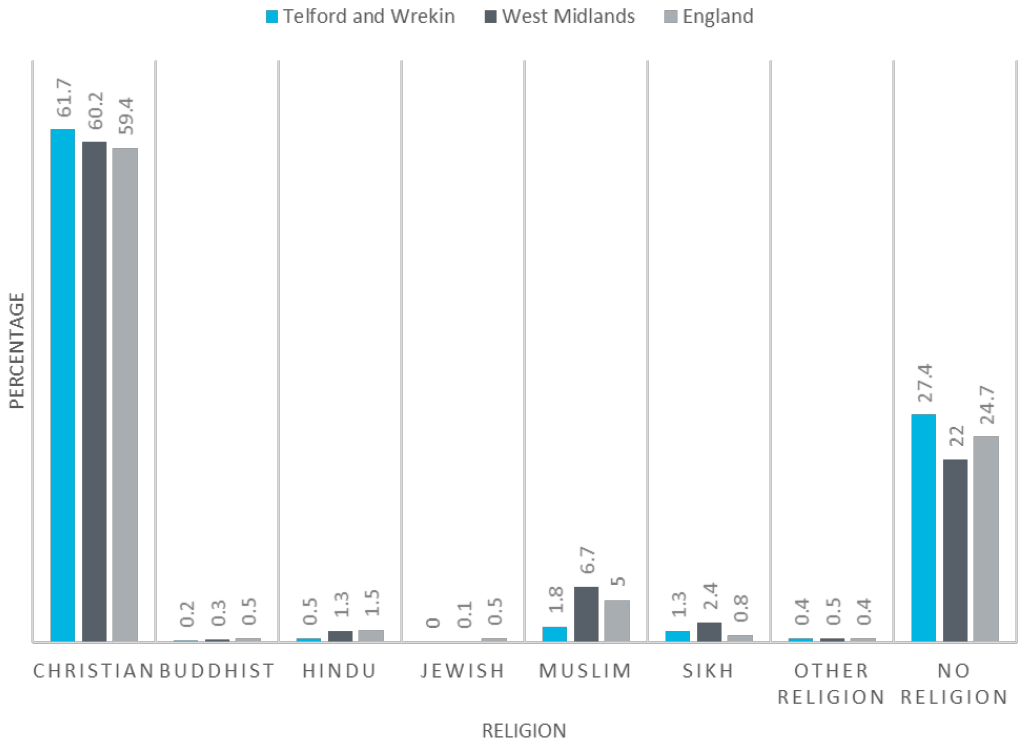
Figure 15.7: Map showing spatial distribution of BAME populations. Source: Census, 2011.



Religion/Belief

15.4.9 Figure 15.8 shows that the majority of Telford and Wrekin's population identifies as Christian, with the second higher proportion stating they have no religion. Muslim populations in the Borough are significantly lower than national and regional averages, whilst Sikh populations are higher than national averages, but lower than regional figures.

Figure 15.8: Breakdown of religion in the Telford and Wrekin Borough. Source: Census, 2011.



15.4.10 Figure 15.9 to Figure 15.14 show the spatial distributions of the Borough's residents' religious/belief groups. Broadly, the pattern shows significantly higher populations of Christian belief in the more rural areas, with those identifying with Buddhist, Hindu, Jewish and Muslim belief systems more clustered in urban areas.

Figure 15.9: Concentrations of Muslim Communities. *Source of data: 2011 Census.*

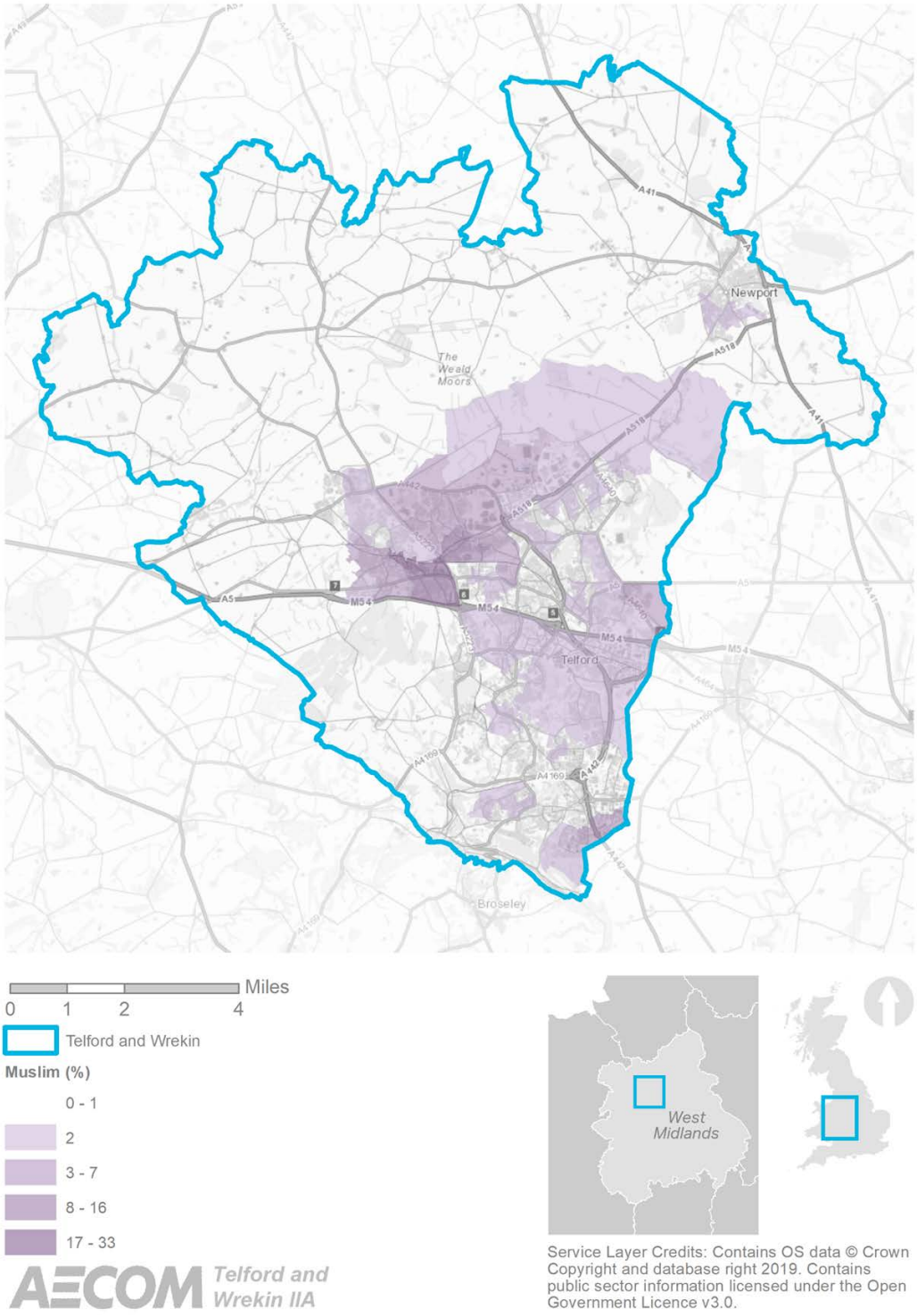


Figure 15.10: Concentrations of Jewish Communities. *Source of data: 2011 Census.*

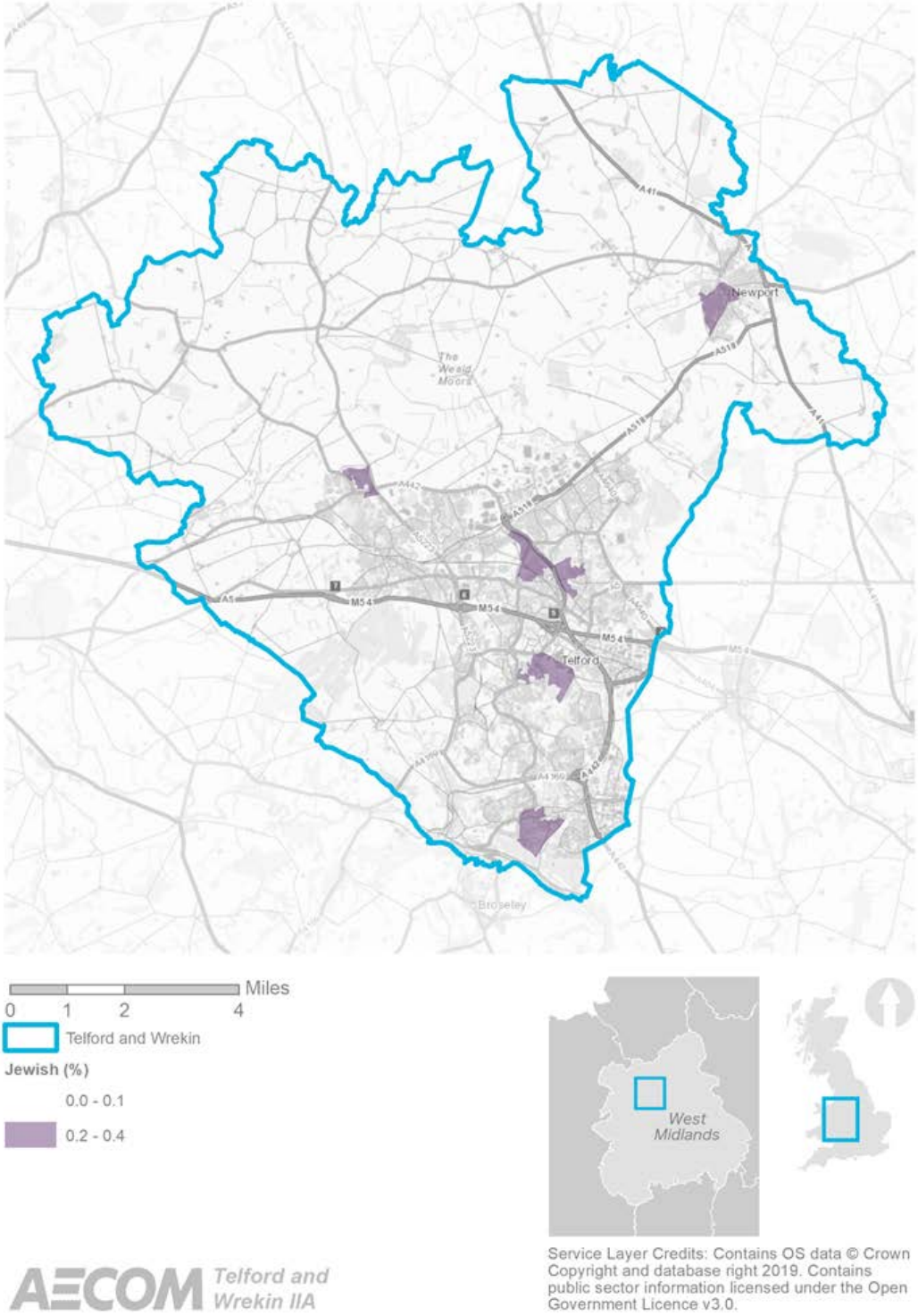


Figure 15.11: Concentrations of Hindu Communities. Source of data: 2011 Census

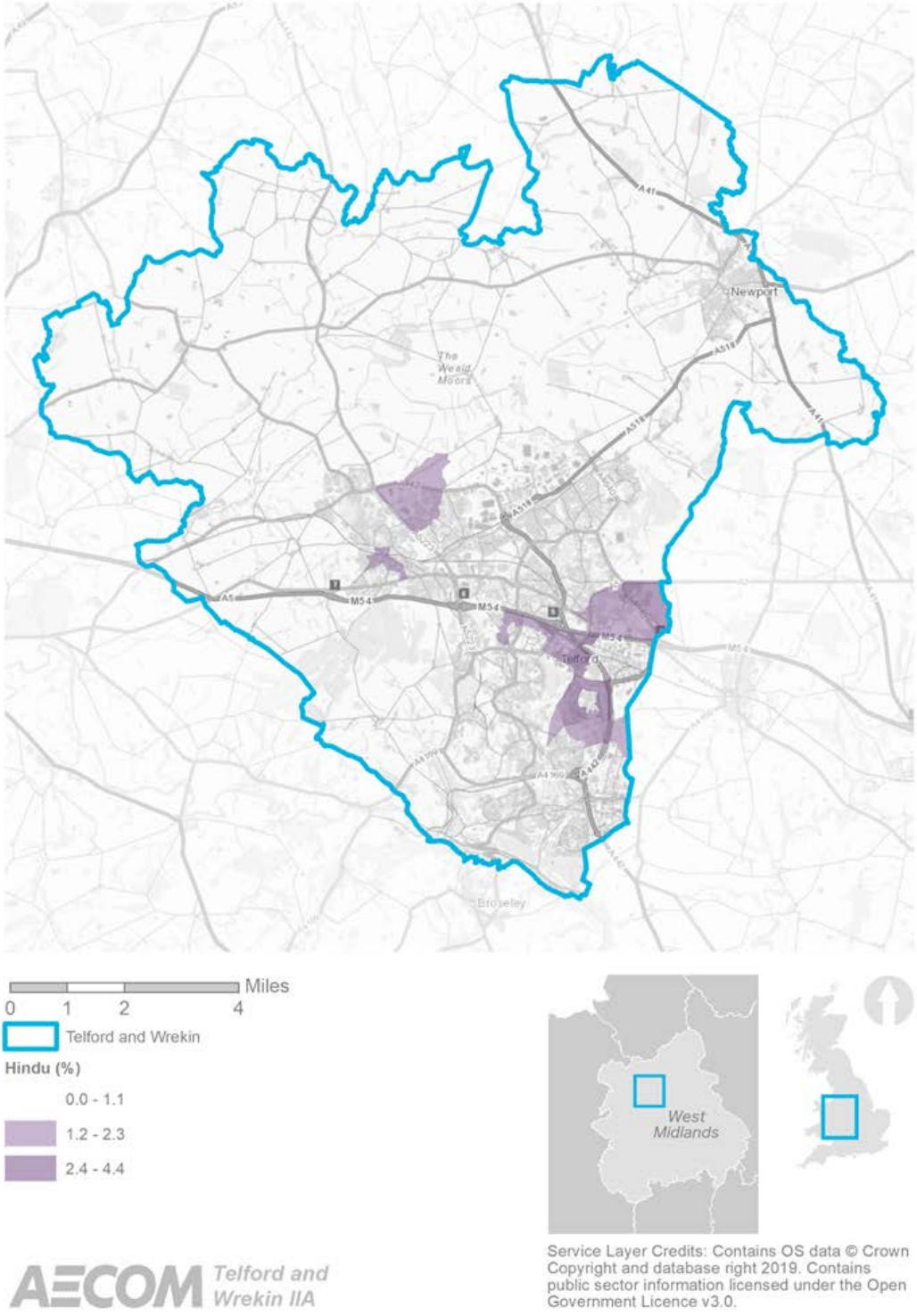


Figure 15.12: Concentrations of Buddhist Communities. Source of data: 2011 Census

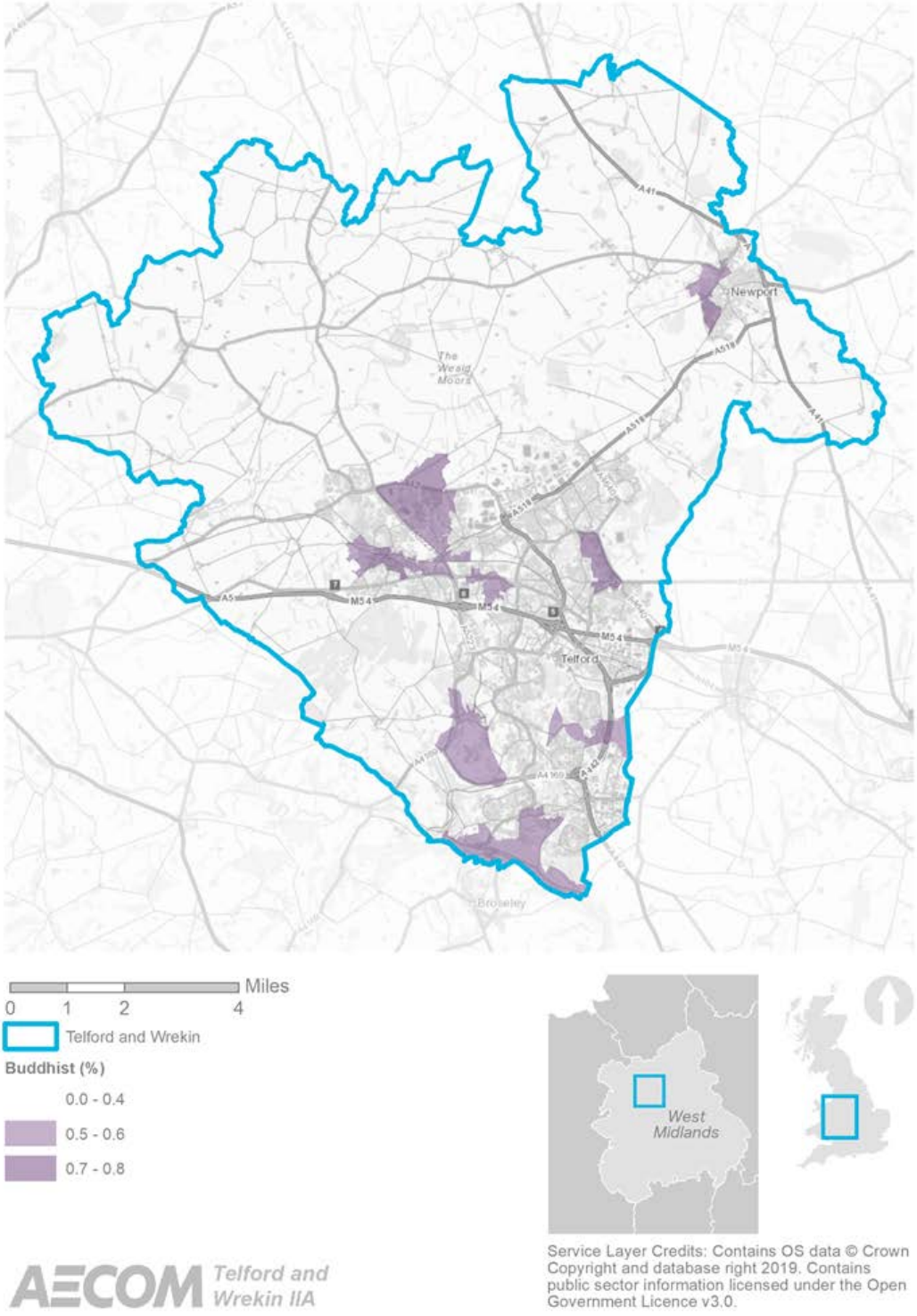


Figure 15.13: Concentrations of Sikh Communities. Source of data: 2011 Census

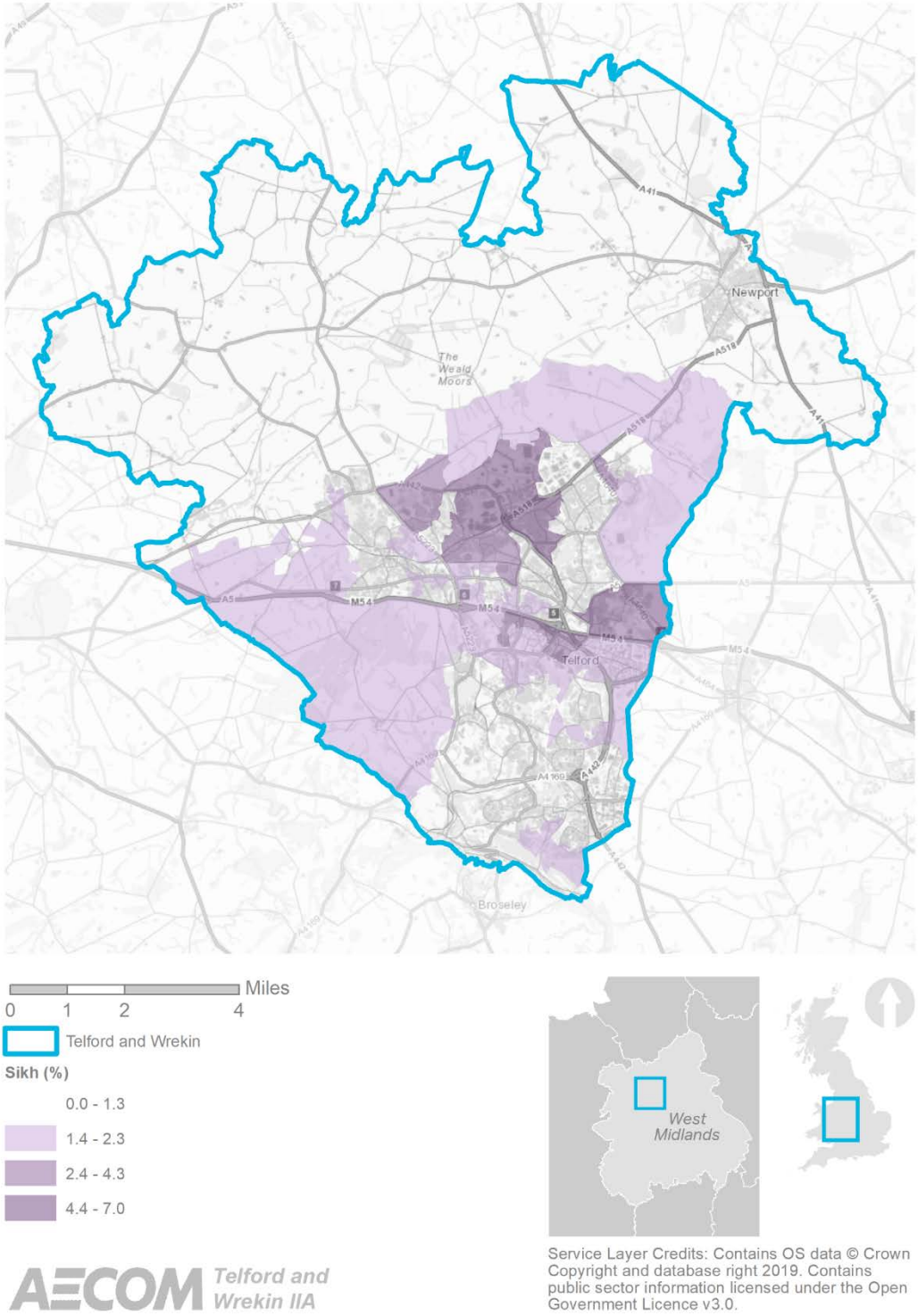
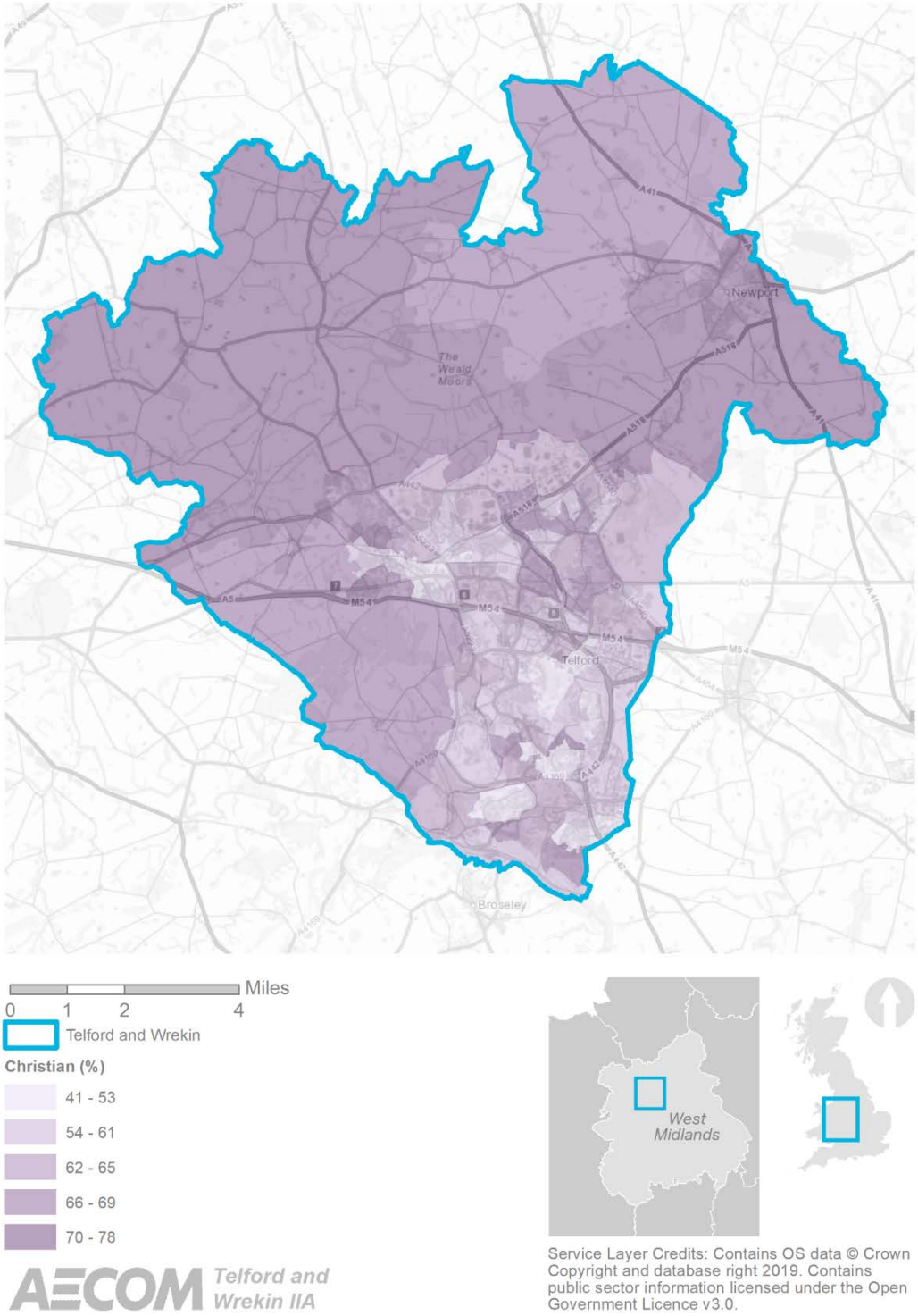


Figure 15.14: Concentrations of Christian Communities. Source of data: 2011 Census



Gender reassignment

15.4.11 There are no official UK statistics relating to gender reassignment. The UK Census currently only collects data relating to sex (gender assigned at birth). The ONS has identified the need for information about gender identity for policy development and service planning. This need is further strengthened by the requirement for information on those with the protected characteristic of gender reassignment as set out in the Equality Act 2010. Work is currently being undertaken by ONS to identify ways of capturing this information.

Sexual Orientation

15.4.12 In 2017, there were an estimated 1.1 million people aged 16 years and over identifying as lesbian, gay or bisexual (LGB) out of a UK population of 52.8 million (ONS, 2017).

15.4.13 Estimates relating to numbers of people identifying with a specific sexual orientation are not available at a local authority level or below, due to the small sample size of this dataset.

Benefit claimants

15.4.14 Out of work benefit claims provide an indication of the proportion of population that experience a limiting condition. This includes **disability**, those that are **carers**, people without a job, and those with incapacity.

Figure 15.15: Out of work benefit claimants. Source: Nomis, 2020.

15.4.15 As Figure 15.15 shows, the Borough has equivalent rates of overall benefit claimants as national figures, however regionally the rates are higher. This pattern is echoed across males and females. The graph also shows that there are significantly more males claiming out of work benefits than females.

Pregnancy and Maternity

15.4.16 Live birth rates from ONS 2019 data shows that there were 2,017 births across the borough in 2019.

15.4.17 Total fertility rates [168] , taken from ONS data for 2016 showed that Telford and Wrekin had a rate of 1.93, marginally higher than the West Midlands average of 1.91 and markedly higher than the UK's average of 1.79.

15.4.18 Census 2011 data showed that the Borough had 5,362 lone parent households with dependent children, this equates to 8% of households, compared to 7.1% nationally and 7.5% regionally. Of these, 88% are female headed households, of which 39% are not in employment.

[168] The Total Fertility Rate (TFR) is the average number of live children that a group of women would bear if they experienced the age-specific fertility rates of the calendar year throughout their childbearing lifespan, calculated using mid-2018 population estimates (ONS 2018)

15.4.19 However, it should be noted that more recent estimates show an increase in male single parent households nationally (ONS 2018).

Marriage/Civil Partnership

15.4.20 The Marriage (Same Sex Couples) Act 2013 legalised same-sex marriage in England, Wales and Scotland in 2014. In 2019 there were 212,000 same-sex families in the UK, an increase of 40% since 2015. (ONS 2019)169

15.4.21 Same-sex cohabiting couples are the most common type of same-sex couple family, accounting for just over half of same-sex families in 2019. However, the proportion of same-sex cohabiting couples has decreased from 59.6% in 2015 to 51.6% in 2019, driven by the growing number of same-sex married couple families.

15.4.22 The sample size for this analysis is based on small numbers and therefore estimates are not available at the local level and are susceptible to annual fluctuation.

Safety and Security

15.4.23 Feelings of safety and security are key to ensuring personal wellbeing. Everyone is vulnerable to feeling unsafe, but this may be particularly acute for people belonging to certain protected characteristic groups, including young people, older people, disabled people, women, and people belonging to a particular ethnic group, or sexual orientation.

Community cohesion and participation

15.4.24 The development of communities which are functional, safe, and enjoyable places to live and work, requires the promotion of community cohesion and good relations between different groups. Encouraging participation in civic engagement and dialogue with all people in the community; particularly those belonging to protected characteristic groups, is an important step in working towards achieving cohesion with communities. For people belonging to protected characteristic groups, their feelings of a lack of cohesion (or exclusion) may be more acute than those of other people. As such, it is important to ensure the needs of different groups are met through ongoing consultation and engagement activities which form part of the Local Plan process, and that equality monitoring is undertaken to show fair representation throughout the consultation process.

Trends and future baseline

15.4.25 There is a high likelihood that in the medium-long term, the Borough will see a spike in retired age and old age dependent people needing assistance. This, exacerbated by the national ageing population, is likely to result in a strain on social care and healthcare services. This will also require the built environment to adapt to suit the needs of people who are less mobile and more susceptible to factors such as disease and air pollution.

15.5 Key Issues

15.5.1 The following key issues emerge from the context and baseline review:

- Policy reinforces the Borough's ambitions to ensure equality of access to a range of services as well as ensuring that local policy considers all groupings when it is developed.
- Literature asserts the importance of considering those who might be impacted disproportionately by decisions, or who may require additional support to access certain services. Core groups which may determine either factors include age, disability, race/ethnicity or religion/belief.

[169] Families and Households in the UK (Office for National Statistics 2019) https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/families/bulletins/familiesandhouseholds/2019#same-sex-married-couples-are-the-fastest-growing-type-of-same-sex-family

- Health limitations are generally higher in the urban areas of the borough, with the exception being in the rural north west of Telford and Wrekin.
- Compared to national levels, Telford and Wrekin has low proportions of ethnic minorities and minority religious groupings compared to national and regional levels.

15.6 Scoping Decision

15.6.1 Considering the key issues discussed above, and the requirements of the EqIA it is proposed that the topic of Equality and Diversity should be **SCOPED IN** to the integrated Appraisal. The following objectives and supporting questions are proposed as part of the IIA Framework.

IIA objective	Assessment questions (will the option/ proposal help to...)
Tackle inequalities, ensure that decisions do not disproportionately affect minority populations and that services can be accessed equally by all.	• Enable people from all background to access services and facilities in a way that ensures equality? • Ensure that decisions and do not disproportionately affect minority populations in an adverse manner? • Ensure that areas and communities which require greater attention and need of services are accommodated? • Reduce the inequalities suffered by minority groups, including those with protected characteristics.

16. Proposed Methodology

16.1 The Integrated Impact Assessment Framework

16.1.1 The IIA Framework is summarised in Table 16.1 below and presented in full in Appendix I. The Framework comprises fourteen thematic objectives which are supported by a range of guiding assessment questions.

16.1.2 As discussed in the previous chapters of this report, the IIA Framework has been developed through a consideration of the policy context, focused literature review and baseline conditions in relation to each aspect of sustainability.

Table 16.1 Summary IIA Framework

IIA Theme	IIA Objectives
Biodiversity	• Avoid impacts on biodiversity, whilst mitigating and compensating any acceptable impacts, achieving net gains through enhancements, and creation of well-connected, functional habitats that are resilient to development, recreational and climate change pressures.
Air Quality	• Protect and improve local air quality through implementing measures to reduce air pollution caused by road traffic and other sources in the borough.
Water Resources	• Promote sustainable forms of development which minimise pressure on water resources, whilst maintaining and enhancing the quality of the Borough's rivers, lakes and aquifers.
Soil and Land	• Promote the effective use of land, minerals and soil resources; supporting the protection of best and most versatile agricultural land, preserving minerals resources, and taking opportunities to enhance the value of land for biodiversity, carbon sequestration, and other beneficial functions.
Landscape	• Protect and enhance the character of valuable landscapes and townscapes; whilst ensuring their multifunctional use and enjoyment by all.
Historic Environment	• Conserve and enhance heritage assets (including their setting), cultural heritage and natural history.
Waste	• Minimise waste generation and support the circular economy by implementing the waste hierarchy.
Climate Change Resilience	• Adapt and become more resilient to the impacts of climate change, including the effective management of flood risk, and preparing for more extreme weather events.
Climate Change Mitigation	• Facilitate and contribute to the move towards a carbon neutral Telford and Wrekin whilst improving social equity of access to energy.
Housing	• Support timely delivery of an appropriate mix of housing types and tenures, including a focus on maximising the potential of brownfield opportunities, to ensure delivery of high quality housing that meets the needs of Telford and Wrekin residents.
Health and Wellbeing	• Support healthy, safe lifestyles and environments for all community groups; whilst seeking to close 'inequality gaps' and improve resilience to health issues.
Economy and Infrastructure	• Build upon key industries and support growth, timely investment in infrastructure and economic diversification that has tangible benefits to the lives of local residents whilst addressing social inequalities.
Transportation	• Ensure that provision of transport infrastructure reflects local population and demographic needs, promotes sustainable modes of travel, connects new housing to employment, education, health and local services and maximises accessibility for all.

Equality and Diversity	• Tackle inequalities, ensure that decisions do not disproportionately affect minority populations and that services can be accessed equally by all.

16.2 Determining significance

16.2.1 The appraisal will use the criteria in Schedule 1 of the SEA Regulations to guide decisions on the significance of effects. This includes:

- the probability, duration, frequency and reversibility of the effects;
- the cumulative nature of the effects;
- the transboundary nature of the effects;
- the risks to human health or the environment (for example, due to accidents);
- the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected);
- the value and vulnerability of the area likely to be affected due too special natural characteristics or cultural heritage; exceeded environmental quality standards or limit values; or intensive land-use; and the effects on areas or landscapes which have a recognised national, community or international protection status.

16.2.2 In many instances it may not be possible to predict significant effects, but it is possible to comment on merits (or otherwise) in more general terms.

16.2.3 In determining whether effects are significant, the focus will be upon the differences / changes that a policy approach will have when compared to the projected baseline position. Therefore, despite a plan measure being positive in its nature, it might not necessarily bring about a **significant change** compared to the measures that are already in place in the absence of the Plan. Likewise, the avoidance of negative effects might simply be a neutral effect if those effects would be unlikely to occur anyway.

16.2.4 For example, there are already policies in place that protect SSSIs and direct growth away from the most sensitive locations in the Borough. Without a Plan review, it is still unlikely that development would occur in areas that would lead to their damage. Therefore, if approaches in the Plan review simply seek to protect and avoid damage to SSSIs, this is the status quo, rather than a significant positive effect. However, if the Plan review provides opportunities to actually improve a SSSI or ecological connectivity, then the effects could be significantly positive.

16.2.5 Every effort is made to predict effects accurately; however, this is inherently challenging given the strategic nature of the Telford and Wrekin Local Plan Review.

16.2.6 The ability to predict effects accurately is also affected by the limitations of the baseline data. Because of the uncertainties involved, there is a need to exercise caution when identifying and evaluating significant effects and ensure assumptions are explained in full. As such, all predictions will be transparent and justified using the available evidence.

16.3 Appraisal methods

Sources of information

16.3.1 The appraisal will draw upon a range of information sources to assist in the determination of the nature of impacts and their significance. This includes:

- The baseline information set out within this scoping report.
- Professional opinion and experience of the project team.
- Sources of GIS data gathered from opensource data and from Telford and Wrekin officers.
- Detailed technical studies for specific topics.

16.3.2 Additionally, the Council are preparing their own site selection methodology which, alongside the findings of the IIA, will inform which site options are proposed for allocation. Details of the Council's draft site selection methodology will be made available as part of the Regulation 18 Issues and Options consultation, though a high-level overview of each assessment stage is outlined below. There will be a need to ensure that the IIA process is integrated with the broader site selection process to avoid duplication and ensure all relevant factors are addressed.

16.3.3 It is important to note that the site methodology will be finalised following consultation feedback, and the approach outlined below is a draft proposal.

Stage 1 - Call for Sites and Strategic Housing & Economic Land Availability Assessment (SHELAA)

1a) Firstly, from the Call for Sites, sites submitted from landowners & developers go forward for consideration in the SHELAA, then:

1b) From the SHELAA, all sites go forward for consideration at the next stage of the process, where sites not suitable, available or achievable sites will be discounted.

Stage 2 – Initial Assessment of Hard Constraints

Identify sites considered unsuitable due to site being wholly or significantly within hard constraints, i.e. where development on the remaining developable area would not be considered justifiable. Sites do not progress further.

Stage 3 – Local plan Review Growth Strategy

Sites will be screened against key plan principles to ensure fit with strategic objectives. Housing and employment sites would not progress if they clearly do not fit with the objectives of the Plan and the principles driving the development strategy.

Stage 4 – Integrated Assessment

Sites progressing to this stage will be appraised against Sustainability Appraisal objectives. Significant positive or negative effects, as well as cumulative effects will be identified and scored via a RAG rating system. This stage would identify appropriate mitigation measures that would need to be addressed if site is subsequently progressed to the next stage.

Stage 5 – Flood Risk Sequential & Exceptions Test

Sites ranked from low-high on flood risk (sites identified as flood zone 3b will have been ruled out at Stage 2). Ranking based on findings from the Strategic Flood Risk Assessment (SFRA). More vulnerable sites (medium-high risk) requires pass of both parts of the Exception Test and site specific FRA as set out in the NPPF.

Stage 6 – Technical Assessment Stage

Sites will be assessed in detail in regards to soft constraints and the level of mitigation required. Sites will be assessed and informed by evidence from whole plan viability assessment.

Stage 7 – Overall Conclusions & Decisions on Site Allocations & Rejections

Sites at this stage of the process will either be justified as final site allocations, or rejected with clear reasoning for that decision. The Council may revisit sites from previous stages of the methodology if insufficient sites have been identified.

Working with Relevant stakeholders

16.3.4 An important part of the integrated appraisal process is to achieve effective engagement with relevant stakeholders. This allows for expert input, local knowledge and different perspectives to be factored into the process at key stages. Ultimately this leads to a more transparent and robust appraisal.

16.3.5 Given the current situation with regard to Covid-19, methods of engagement are likely to be different to what might occur under normal circumstances. However, every effort will be made to ensure effective and early involvement in the process.

16.3.6 The following key stakeholders have been identified at this stage:

- Telford and Wrekin Council technical specialists, with liaison via the Strategic Planning team;
- Natural England;
- Historic England;
- The Environment Agency;

16.3.7 It is also important to engage with the wider public and other interested parties such as those with an interest in land and development. Comments will be invited from a comprehensive range of stakeholders at subsequent stages of the IIA process (as determined by legislative requirements and best practice).

Assumptions

16.3.8 It is important to set out the assumptions related to an impact assessment. This makes it clear what the focus of the assessment is, and what factors are not being considered (or cannot be considered). This is particularly relevant given the strategic nature of the Plan.

16.3.9 **This is a strategic plan** - The appraisal is focused upon strategic issues, and therefore, information gathered to support the appraisals (i.e. scoping) should not cover issues and information that are not being dealt with at this scale of plan-making.

16.3.10 **The precautionary principle** - Even where there are constraints to development, it is possible (with good layout, design and scheme details) to avoid negative effects or even achieve a positive outcome. However, this level of detail is not available at a strategic level,

so impact assessments need to take account of the 'unmitigated' situation. Therefore, when determining impacts at a strategic level, a precautionary approach is taken.

16.3.11 **Mitigation and enhancement** - Any recommendations that are made will need to be appropriate to the scope of the Plan and the factors that it deals with and influences. In this instance, the Plan will not deal with site specific or development management issues. Therefore, such measures will not be appropriate with regards to mitigation and enhancement.

16.3.12 **Uncertainty** - Given the high level nature of the plans (and appraisal), there are always going to be elements of uncertainty relating to the nature and extent of impacts. Where such uncertainties exist, they will be made clear in the assessments. To ensure that appraisals are robust and uncertainties are limited, predictions will be made in relation to the established baseline position and supported by evidence.

16.3.13 **Project level detail** - There is an assumption that project level assessments which involve Environmental Impact Assessment (EIA) will deal with specific on-site issues.

17. Next steps

17.1 Subsequent stages for the Integrated Appraisal

17.1.1 The five stages of the integrated impact assessment process[170] are identified below. Scoping (the current stage) is the second stage of the IIA process.

i. Screening;

ii. Scoping;

iii. Assess reasonable alternatives, with a view to informing preparation of the Local Plan Review;

iv. Assess the draft plan and prepare the Integrated Impact Assessment Report with a view to informing consultation and plan finalisation; and

v. Publish a 'statement' at the time of plan adoption in order to 'tell the story' of plan-making / Integrated Impact Assessment (and present 'measures concerning monitoring').

17.1.2 The next stage will involve consideration of reasonable alternative approaches to key plan issues such as housing and employment growth. The findings will be presented in an Interim IIA Report, which will accompany consultation on a draft Plan (In line with Regulation 18).

17.2 Consultation on the Scoping Report

17.2.1 At this scoping stage, the SEA Regulations require consultation with statutory consultation bodies. The statutory consultation bodies are the Environment Agency, Historic England and Natural England.

17.2.2 The statutory bodies and a wider range of consultees are invited to comment on the content of this Scoping Report, in particular the evidence base for the IIA, the identified key issues and the proposed IIA Framework.

17.2.3 The consultation period for the Integrated Appraisal runs from 12th October 2020 – 16th November. Comments on the Scoping Report should be sent by email directly to:

jan.mccluskey@aecom.com

17.2.4 All comments received on the Scoping Report will be reviewed and will influence the development of the Integrated Impact Assessment as appropriate.

[170] In accordance with the stages set out in the National Planning Practice Guidance, but taking into account the elements of EqIA and HIA.

Appendix I: IIA Framework

This appendix pulls together the IIA themes and suggested objectives along with the supporting decision-aiding questions. Taken together, this list indicates the parameters of the IIA, providing a methodological 'framework' for assessment.

Table A1: The full IIA Framework

ISA theme	ISA objective	Assessment Questions (will the option / proposal help to…)
Biodiversity	Avoid impacts on biodiversity, whilst mitigating and compensating any acceptable impacts, achieving net gains through enhancements, and creation of well-connected, functional habitats that are resilient to development, recreational and climate change pressures.	• Avoid impacts to key biodiversity assets that would be difficult to mitigate to an acceptable level? • Avoid severing ecological corridors, whilst seeking to enhance and connect existing corridors? • Improve the resilience of ecosystems to development, recreational and climate change pressures? • Demonstrate a net gain for biodiversity? • improve quality and ecological functionality of ecological features on and off site? • Signpost and link communities with nature, ensuring benefits from interaction with wildlife and public green spaces without generating harm to species and habitats?
Air Quality	Protect and improve local air quality through implementing measures to reduce air pollution caused by road traffic and other sources in the borough.	• Improve sustainable transport infrastructure, including walking and cycling routes, and public transport in order to promote healthy, active lifestyles and travel choice? • Protect and promote greenspaces and healthy environments in urban areas to alleviate air Pollution. • Implement road traffic measures to reduce air pollution? • Facilitate a move towards low emission / zero emission vehicles?
Water Resources	Promote sustainable forms of development which minimise pressure on water resources, whilst maintaining and enhancing the quality of the Borough's rivers, lakes and aquifers.	• Maintain areas with good water quality and make improvements where necessary? • Promote the role of water resources for their recreational and economic benefits without compromising environmental quality? • Promote the integration of blue infrastructure into new developments? • Ensure the timely phasing of wastewater and drainage infrastructure improvements to support new development?

ISA theme	ISA objective	Assessment Questions (will the option / proposal help to…)
Soil and Land	Promote the effective use of land, minerals and soil resources; supporting the protection of best and most versatile agricultural land, preserving minerals resources, and taking opportunities to enhance the value of land for biodiversity, carbon sequestration, and other beneficial functions.	• Promote the use of previously developed land where possible as a viable alternative to greenfield development and would not have unacceptable impacts on other important features such as biodiversity and cultural heritage? • Avoid the loss of the highest quality agricultural land where possible? • Promote the effective use of agricultural land for temporary uses where soil quality can be retained? • Support a change of use from agricultural land where opportunities for environmental net gain can be achieved? • Promote community food growing and greater self-sufficiency? • Avoid the unnecessary sterilisation of minerals deposits and associated infrastructure?
Landscape	Protect and enhance the character of valuable landscapes and townscapes; whilst ensuring their multifunctional use and enjoyment by all.	• Protect and enhance access to high quality green and open space in urban areas? • Enhance poor quality landscapes and townscapes? • Protect sensitive landscapes that makes a positive contribution to landscape character and provide recreational opportunities? • Consider effects of climate change on landscape environments?
Historic Environment	Conserve and and enhance heritage assets (including their setting), cultural heritage and natural history.	• Conserve and enhance historic assets and their settings? • Support patterns of growth that are in keeping with settlement character? • Recognise and promote the role of the historic environment in contributing to community identity? • Retain the historic industrial identity whilst meeting the needs of the present?
Waste	Minimise waste generation and support the circular economy by implementing the waste hierarchy.	• Reduce waste generation associated with new development. • Promote the use of secondary materials. • Support the management of waste close to sources of generation. • Ensure that negative health impacts associated with waste management are avoided.

ISA theme	ISA objective	Assessment Questions (will the option / proposal help to…)
Climate Change Resilience	Adapt and become more resilient to the impacts of climate change, including the effective management of flood risk, and preparing for more extreme weather events.	• Direct development away from areas of greatest risk of flooding, unless sufficient mitigation can be implemented. • Ensure that development does not increase flood risk on site or downstream? • Implement multifunctional green infrastructure? • Ensure that critical infrastructure is resilient to the effects of climate change? • Avoid vulnerabilities to flood risk, considering locally specific circumstance? • Locate development in appropriate locations, or on sites where appropriate mitigation can be made?
Climate Change Mitigation	Facilitate and contribute to the move towards a carbon neutral Telford and Wrekin whilst improving social equity of access to energy.	• Avoid the sterilisation of renewable energy opportunities by locating incompatible development in areas with greatest suitability for generation? • Support the continued growth in renewable energy generation across Telford and Wrekin, particularly where opportunities exist? • Continue to drive down greenhouse gas emissions associated with transport, housing and business? • Reduce energy consumption? • Decouple energy consumption and affluence? • Ensure affordable access to energy for all members of the community? • Lead to greater self-sufficiency?
Housing	Support timely delivery of an appropriate mix of housing types and tenures, including a focus on maximising the potential of suitable brownfield opportunities, to ensure delivery of high quality housing that meets the needs of Telford and Wrekin residents.	• Support timely delivery of an appropriate mix of housing types and tenures to meet housing need in the most sustainable locations? • Realise potential from suitable brownfield opportunities in the borough? • Support delivery of a range of good quality, affordable and specialist housing that meets the needs of Telford and Wrekin's residents, including older people, people with disabilities and families with children? • Enable managed growth of rural communities where to do so would help improve the sustainability of these settlements?

ISA theme	ISA objective	Assessment Questions (will the option / proposal help to…)
Health and Wellbeing	Support healthy, safe lifestyles and environments for all community groups; whilst seeking to close 'inequality gaps' and improve resilience to health issues.	• Ensure there is adequate access to open/ green space facilities across all areas within the local plan boundary. • Ensure that recreational spaces are kept to a high quality standard, are accessible and able to provide for required demands. • Ensure that places are designed that allow social distancing measures to be employed effectively. • Improve active transport accessibility to suitable housing, employment opportunities. • Reduce inequalities in health between the most and least deprived areas. • Support active travel. • Support mental health trends and continues to plan for and acknowledge mental health issues.
Economy and Infrastructure	Build upon key industries and support growth, timely investment in infrastructure and economic diversification that has tangible benefits to the lives of local residents whilst addressing social inequalities.	• Ensure that adequate skills, education and training are in place to meet the needs of the local economy? • Reduce the polarised nature of urban inequalities? • Boost self-employment through schemes designed to support entrepreneurial activity? • Reduce the economic and healthcare costs of people classified as long-term sick? • Diversify the job offer for local residents? • Improve digital connectivity? • Ensure the protection of the natural, historic and leisure attractions the Borough has to offer? • Ensure the longevity and successful diversification of the Borough's centres? • Build economic resilience and adapt to disruptive events such as the Covid19 pandemic.
Transportation	Ensure that provision of transport infrastructure reflects local population and demographic needs, promotes sustainable modes of travel, connects new housing to employment, education, health and local services and maximises accessibility for all.	• Improve transport infrastructure throughout the borough including active (walking and cycling) and public transport? • Meet future transport trends and service those of all abilities? • Encourage active transport to improve the communities health in the longer term, whilst benefiting the environment?

ISA theme	ISA objective	Assessment Questions (will the option / proposal help to…)
		• Improve transport to ensure sustainable and active modes are most desired as used to connect people to places? • Ensure infrastructure is in place to support flexible working arrangements and positive changes in travel behaviours that emerge in response to crises such as Covid19.
Equality and Diversity	Tackle inequalities, ensure that decisions do not disproportionately affect minority populations and that services can be accessed equally by all.	• Enable people from all background to access services and facilities? • Ensure that decisions and do not disproportionately affect minority populations? • Ensure that areas which require regeneration and renewal are considered? • Ensure that areas and communities which require greater attention and need of services are accommodated? • Reduce the inequalities suffered by minority groups, including those with protected characteristics.

Appendix II: Scoping for the HRA of the Local Plan

Scoping for the HRA of the Telford and Wrekin Local Plan

Telford & Wrekin Council

July 2020

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
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1. Introduction

Background to the Project

1.1 AECOM was appointed by Telford & Wrekin Council to assist in undertaking a Habitats Regulations Assessment (HRA) of the Telford and Wrekin Local Plan (hereafter referred to as the Local Plan or 'Plan'). The objectives of the assessment are to:

- Identify any aspects of the Local Plan that would cause any adverse effect on the integrity of Natura 2000 sites, otherwise known as European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and, as a matter of Government Policy, Ramsar Sites), either in isolation or in combination with other plans and projects; and,
- To advise on appropriate policy mechanism for delivering mitigation where such effects were identified.

1.2 The purpose of this initial stage of the HRA process, integrated into the IIA Scoping Report, is to set out the scope of the HRA for agreement or comment by Natural England and other relevant consultees. This includes the legislative context, proposed methodology, technical and physical scope and proposed list of other plans and projects to be considered 'in combination'. It does not present any actual assessment.

Legislation

1.3 The need for HRA is set out within the Conservation of Habitats & Species Regulations 2017 (as amended) (**Box 1**), and relates to protection of European sites.

1.4 European sites can be defined as actual or proposed/candidate Special Areas of Conservation (SAC) or Special Protection Areas (SPA). It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to Natura 2000 sites.

Box 1: The legislative basis for Appropriate Assessment

Conservation of Habitats and Species Regulations 2017 (as amended)

The Regulations state that:

"*A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … must make an appropriate assessment of the implications for the plan or project in view of that site's conservation objectives… The competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site.*"

1.5 The Habitats Regulations applies the precautionary principle to Natura 2000 sites (SAC and SPA). As a matter of UK Government policy, Ramsar sites are given equivalent status. For the purposes of this assessment candidate SACs (cSACs), potential SPAs (pSPAs) and proposed Ramsar (pRamsar) sites are all treated as fully designated sites. In this report we use the term "European sites" to refer collectively to the sites listed in this paragraph.

1.6 Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. This contrasts with the SEA Regulations which do not prescribe how plan or programme proponents should respond to the findings of an environmental assessment; merely that the assessment findings (as documented in the 'environmental report') should be 'taken into account' during preparation of the plan or programme. In the case of the Habitats Regulations, plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

1.7 The UK will cease to be part of the European Union in early 2021. However, AECOM takes the view that the UK Courts may continue to see European Court of Justice rulings on HRA as useful jurisprudence even after departure. With that in mind, in producing the HRA of the Local Plan AECOM will be cognisant of a series of rulings from the Court of Justice of the European Union (CJEU) during 2018, which have given added prominence to the task of Habitat Regulations Assessment.

1.8 In 2018, the 'People Over Wind' European Court of Justice (ECJ) ruling[1] determined that 'mitigation' (i.e. measures that are specifically introduced to avoid or reduce the harmful effects of a plan or project on European sites) should not be taken into account when forming a view on likely significant effects. Mitigation should instead only be considered at the appropriate assessment stage. In 2018 the Holohan ruling[2] was also handed down by the ECJ. Among other provisions paragraph 39 of the ruling states that '*As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, … typical habitats or species must be included in the appropriate assessment, if they are necessary to the conservation of the habitat types and species listed for the protected area*' [emphasis added]. Both rulings will be taken into account in the HRA process as necessary.

1.9 Over the years the phrase 'Habitats Regulations Assessment' has come into wide currency to describe the overall process set out in the Conservation of Habitats and Species Regulations from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an 'Appropriate Assessment'. Throughout this report we use the term Habitats Regulations Assessment for the overall process.

Scope of the Project

1.10 There is no pre-defined guidance that dictates the physical scope of an HRA of a Local Plan document. Therefore, in considering the physical scope of the assessment, we were guided primarily by the identified impact pathways (called the source-pathway-receptor model) including work undertaken for the HRA of the adopted Local Plan.

1.11 Briefly defined, impact pathways are routes by which the implementation of a policy within a Local Plan document can lead to an effect upon a European designated site. An example of this would be new residential development resulting in an increased population and thus increased recreational pressure, which could then affect European sites by, for example, disturbance of non-breeding or breeding birds. Guidance from the Ministry of Housing, Communities and Local Government (MHCLG) states that the HRA should be '*proportionate to the geographical scope of the* [plan policy]' and that '*an AA need not be done in any more detail, or using more resources, than is useful for its purpose*' (MHCLG, 2006, p.6).

1.12 This basic principle has also been reflected in court rulings. The Court of Appeal[3] has ruled that providing the Council (competent authority) was duly satisfied that proposed mitigation could be 'achieved in practice' to satisfy that the proposed development would have no adverse effect, then this would suffice. This ruling has since been applied to a planning permission (rather than a Core Strategy document)[4]. In this case the High Court ruled that for '*a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of Reg 61 of the Habitats Regulations'*.

1.13 Given an initial assessment of the relevant European sites and the impact pathways present, and referring to the HRA work that was undertaken for the adopted Local Plan, this HRA intends to consider likely significant effects on the following European sites:

[1] Case C-323/17
[2] Case C-461/17
[3] No Adastral New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015
[4] High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015

- Aqualate Mere, Cop Mere and Hencott Wood and Hencott Pool (Midlands Meres and Mosses Phase 2 Ramsar site) – Aqualate Mere is approximately 0.4 km east of the borough, east of Meretown and Forton. Cop Mere is approximately 7.7km north east of the borough, north east of Walk Mill and Offleyhay. Hencott wood and Hencott Pool is approximately 5.9 km west of the borough, north west of Shrewsbury.

- Bomere Wood, Bomere Pool and Shomere Pool and Berrington Pool (Midland Meres and Mosses Phase 1 Ramsar site) – Bomere Wood and Pool and Shomere Pool is approximately 8.2 km south west of the borough, south east of Shrewsbury. Berrington Pool is approximately 6.8 km south west of the borough, north west of Berrington Village.

- Mottey Meadows SAC – approximately 5.2 km east of the borough, west of the village of Wheaton Aston.

- Cannock Chase SAC – approximately 19 km east of the borough, south east of Stafford.

- West Midland Mosses SAC – Clarepool and Hampton Moss is approximately 20km north west of the borough. Wybunbury Moss is approximately 24km north of the borough. Chartley Moss is approximately 25.5km north east of the borough.

- Severn Estuary SAC/SPA/Ramsar – is approximately 95km south of the borough.

1.14 This scope is identical for that of the HRA of the adopted Local Plan. Note that this does not mean it is considered that potential for likely significant effects on these sites necessarily exists, but simply that these are the sites that will be investigated. No potential pathways of impact have been identified linking to other European sites.

2. Methodology

Introduction

2.1 The HRA will be carried out in the continuing absence of formal central Government guidance on HRA of plans, although general EC guidance on HRA does exist[5] and the UK government published general guidance on HRA in July 2019[6]. The former Department for Communities and Local Government (now the Ministry of Housing Communities and Local Government) released a consultation paper on the Appropriate Assessment of Plans in 2006[7]. Natural England has also produced its own internal guidance[8] as has the RSPB[9]. All of these will be referred to in undertaking this HRA.

2.2 Figure 1 below outlines the stages of HRA of plans according to current draft MHCLG guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the plan until no significant adverse effects remain.

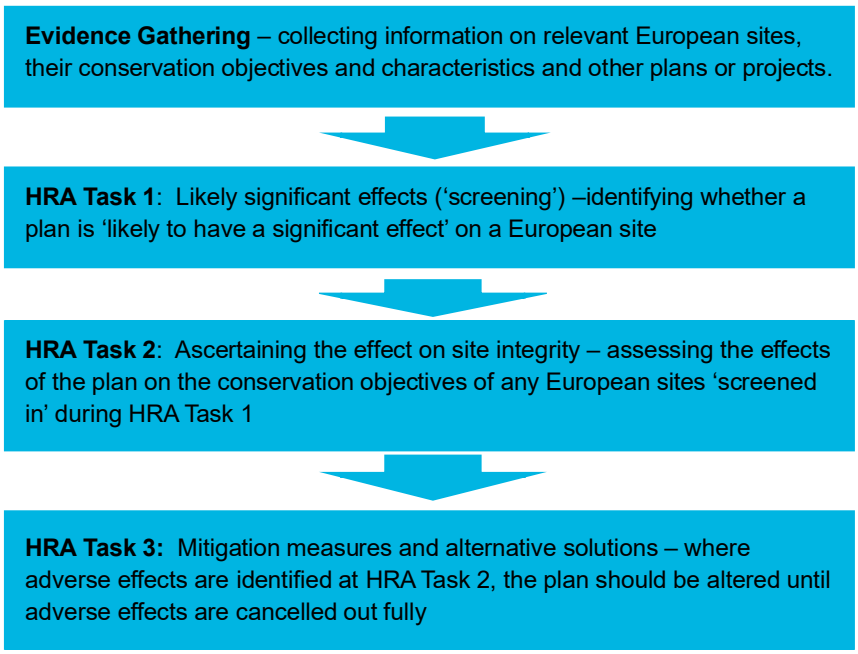

Figure 1: Four Stage Approach to Habitats Regulations Assessment. Source MHCLG, 2006.

HRA Task 1 – Likely Significant Effects (LSE)

2.3 Following evidence gathering, the first stage of any Habitats Regulations Assessment is a Likely Significant Effect (LSE) test - essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

2.4 "*Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"*

[5] European Commission (2001): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.
[6] https://www.gov.uk/guidance/appropriate-assessment
[7] CLG (2006) Planning for the Protection of European Sites, Consultation Paper
[8] http://www.ukmpas.org/pdf/practical_guidance/HRGN1.pdf
[9] Dodd A.M., Cleary B.E., Dawkins J.S., Byron H.J., Palframan L.J. and Williams G.M. (2007) *The Appropriate Assessment of Spatial Plans in England: a guide to why, when and how to do it.* The RSPB, Sandy.

2.5 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction with European sites.

2.6 In evaluating significance, AECOM will rely on our professional judgement as well as the results of previous stakeholder consultation regarding development impacts on the European sites.

2.7 The level of detail in land use plans concerning developments that will be permitted under the plans may not always be sufficient to make a detailed quantification of adverse effects for all impact pathways. In these instances, a precautionary approach (in the absence of more precise data) assuming as the default position that if a likely significant effect (LSE) cannot be confidently ruled out, then the assessment must be taken to the next level of assessment Task Two: Appropriate Assessment. This is in line with the April 2018 court ruling relating to 'People Over Wind' where mitigation and avoidance measure are to be included at the next stage of assessment.

HRA Task 2 – Appropriate Assessment

2.1 European Site(s) which have been 'screened in' during the previous Task will have a detailed assessment undertaken on the effect of the policies on the European site(s) site integrity. Avoidance and mitigation measures to avoid adverse significant effects are taken into account or recommended where necessary.

2.2 As established by case law, 'appropriate assessment' is not a technical term; it simply means whatever further assessment is necessary to confirm whether there would be adverse effects on the integrity of any European sites that have not been dismissed at screening. Since it is not a technical term it has no firmly established methodology except that it essentially involves repeating the analysis for the likely significant effects stage, but to a greater level of detail on a smaller number of policies and sites, this time with a view to determining if there would be adverse effects on integrity.

2.3 One of the key considerations during Appropriate Assessment is whether there is available mitigation that would entirely address the potential effect. In practice, the Appropriate Assessment takes any policies or allocations that could not be dismissed following the high-level Screening analysis and analyse the potential for an effect in more detail, with a view to concluding whether there would actually be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the European site(s)).

'In Combination' Assessment

2.4 It is a requirement of the Regulations that the impacts of any land use plan being assessed are not considered in isolation but in combination with other plans and project that may also be affecting the European site(s) in question.

2.5 For the purposes of this assessment we have determined that, due to the nature of the identified impacts, the other plans and project with potential for in-combination likely significant effects are those that can result in recreational pressure, loss of supporting habitats, reduced air quality, reduced water quality, or increased demand for water resources.

2.6 For the purpose of this assessment the following documents will be considered in-combination with the Local Plan:

- Shropshire Local Plan Partial Review 2016 - 2038 (Pre-Submission)
- Stafford Borough Emerging Local Plan 2020 – 2040 (Issues and Options)
- South Staffordshire District Emerging Local Plan Review (Issues and Options)
- Newcastle-under-Lyme and Stoke-on-Trent Emerging Joint Local Plan (Preferred Options)
- Oswestry Town Plan 2020

- Shrewsbury Big Town Plan 2018
- Shropshire Local Development Framework Adopted Core Strategy (2011)
- Severn Trent Water Resources Management Plan (2019)
- Telford and Wrekin Local Transport Plan 2011 - 2026

2.7 This list of plans has been devised through an understanding of local authority connections around Telford & Wrekin.

2.8 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation i.e. to ensure that those projects or plan which in themselves have minor impacts are not simply dismissed on that basis but are evaluated for any significant cumulative contribution they may make to an overall significant effect.

3. Pathways of Impact

Introduction

3.1 In carrying out an HRA it is important to determine the various ways in which land use plan can impact on European sites by following the pathways along which development can be connected with European sites, in some cases many kilometres distant. Briefly defined, pathways are routes by which a change in activity associated with a development can lead to an effect upon a European site.

Other Relevant Supporting Studies

3.2 In determining pathway-receptor potential for impacts of the Local Plan on European sites, the following data sources will be interrogated:

- The UK Air Pollution Information System (www.apis.ac.uk);
- Visitor studies for relevant European designated sites, where available;
- Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.defra.gov.uk) and its links to SSSI citations (www.naturalengland.org.uk) and the JNCC website (www.jncc.gov.uk);
- Habitats Regulations Assessments of surrounding Local Plans, where available and appropriate to use.

European Sites for Consideration

3.3 AECOM uses a minimum precautionary buffer of 10km outside of the borough boundary when first considering which European sites need assessing within the HRA. However, European sites further afield are also considered where there may be linking impact pathways to development within the borough; for example, a European site with a recreational catchment larger than 10km or abstraction and transfer licences.

3.4 A previous HRA for the Adopted Local Plan considered several European sites outside of this precautionary 10km buffer:

- Severn Estuary SAC/SPA/Ramsar site;
- West Midland Mosses SAC; and,
- Cannock Chase SAC.

3.5 Cannock Chase is a large site which is popular with recreational users. Extensive visitor survey work has been undertaken for this SAC[10] which has identified that only net new housing within 15km of the European site will result in a significant increase in recreational pressure. Telford & Wrekin lies considerably further than this distance (approximately 19km at its closest). There are no hydrological connections between the European site and the borough and the average vehicle journey in the UK is approximately 10.6km[11]. Therefore, traffic generated within the borough will have dispersed across the network at the distance between the borough boundary and the European site. The fact that Cannock Chase SAC lies beyond the zone of influence of Telford & Wrekin will be taken into consideration when undertaking the likely significant effect test. It seems probable that a conclusion of no likely significant effect could be reached.

3.6 The Severn Estuary SAC/SPA/Ramsar site covers an area of approximately 74,000 ha and is one of the best areas in the UK to support significant numbers notable species and habitats. It is

[10] https://www.lichfielddc.gov.uk/downloads/file/634/cannock-chase-special-area-of-conservation-visitor-survey [Accessed 02 July 2020]
[11] GOV.UK (2019). *Average number of trips made and distance travelled*. https://www.gov.uk/government/statistical-data-sets/nts01-average-number-of-trips-made-and-distance-travelled, accessed 13/03/2020

an extremely popular area for recreation including walking, dog walking, horse riding, biking, beach activities, angling and other water sports. Visitor surveys have been conducted for this European site[12], which has identified that only net new housing within 7.7km of the European sites will result in an increase in recreational pressure. Telford & Wrekin lies approximately 90km north of the European sites at its closest. Therefore, an increase in development in Telford & Wrekin will not directly impact the European site. The River Severn skims the southern boundary of Telford & Wrekin borough through Ironbridge and Coalport and wastewater treatment works that serve Telford & Wrekin discharge to the River Severn; typically, the Environment Agency would not consider even large wastewater treatment works located at 90km distance from an SAC as likely to have an adverse effect on water quality in that SAC. This will therefore be investigated for the likely significant effects test. However, it seems that a conclusion of no likely significant effect could be reached.

3.7 West Midlands Mosses SAC is vulnerable to water pollution, hydrological changes, air pollution and habitat fragmentation. However, West Midlands Mosses SAC components have no hydrological connections to the borough. As the components are outside of the borough development does not pose a threat of fragmenting the habitats and the closest component of the SAC is approximately 20km north west of the borough; therefore any increase in vehicles on the roads within the borough will be highly dispersed at the distance between the borough boundary and the European site. The SAC is also considered to be well outside the core recreational catchment of even the most visitor-popular European site in the broad area (Cannock Chase SAC). As such, it seems probable that a conclusion of no likely significant effect could be reached.

3.8 The HRA of the Local Plan will consider all the European sites above but will thus focus on the following European sites:

- Midlands Meres and Mosses Phase 1 Ramsar site;
- Midlands Meres and Mosses Phase 2 Ramsar site; and,
- Mottey Meadows SAC.

3.9 The assessment will focus on the following impact pathways.

Recreational Pressure including from Urbanisation

3.10 Recreational use of a European site has the potential to:

- Prevent appropriate management or exacerbate existing management difficulties;
- Cause damage through erosion and fragmentation; and
- Cause eutrophication as a result of dog fouling.

3.11 Different types of internationally designated sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.

3.12 Most types of land based internationally designated site can be affected by trampling, which in turn causes soil compaction and erosion. Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and also have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species.

3.13 There have been several papers published that empirically demonstrate that damage to vegetation in woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:

[12] http://www.epr.uk.com/assets/severnestuaryreport.pdf [Access 03 July 2020]

- Wilson & Seney (1994)[13] examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
- Cole et al (1995a, b)[14] conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each tramped between 0 – 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.
- Cole (1995c)[15] conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier tramplers caused a greater reduction in vegetation height than lighter tramplers, but there was no difference in effect on cover.
- Cole & Spildie (1998)[16] experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance but recovered rapidly. Higher trampling intensities caused more disturbance.

3.14 The total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard[17] estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively.

3.15 Urbanisation is closely related to recreational pressure, in that they both result from increased populations within close proximity to sensitive sites. However, urbanisation is only considered an issue when large amounts of development is in very close proximity to sensitive sites. There are no European sites within the boundaries of Telford & Wrekin borough, the closest European site to the boundaries of the borough is the Aqualate Mere SSSI component of Midland Meres and Mosses Ramsar Phase 2. This European site is approximately 400m from the boundary of the borough and therefore likely to be even further from development sites within the borough. Therefore, the urbanisation pathway can be scoped out from investigation within the HRA. The risk of recreational pressure will, however, be discussed in the HRA process.

3.16 In making such an assessment account will be taken of the specific circumstances of each European sites. For example, although open to the public as a National Nature Reserve Aqualate

[13] Wilson, J.P. & J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles and off road bicycles on mountain trails in Montana. *Mountain Research and Development* 14:77-88
[14] Cole, D.N. 1995a. Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology* 32: 203-214
Cole, D.N. 1995b. Experimental trampling of vegetation. II. Predictors of resistance and resilience. *Journal of Applied Ecology* 32: 215-224
[15] Cole, D.N. (1995c) Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah
[16] Cole, D.N., Spildie, D.R. (1998) Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* 53: 61-71
[17] Barnard, A. (2003) Getting the Facts - Dog Walking and Visitor Number Surveys at Burnham Beeches and their Implications for the Management Process. *Countryside Recreation*, 11, 16 - 19

Mere's recreation is restricted to a few public rights of way and a bird hide at the eastern end of the mere; outside of the PRoW and hide the reserve is permit access only and dogs are required to be kept on leads throughout the site, therefore recreation is manage to an appropriate level. The Cop Mere component of the Ramsar site is used by an angling club for fishing of tench and pike; however, it is not open to the public as a reserve but does have PRoW around part of the mere behind a strip of woodland. Hencott Wood and Hencott pool do not appear to have any public rights of way through the site. Bomere/Shomere Pool is a privately-owned site, closed to the public, which operates a towed water sports facility on the larger lake, although a PRoW does run close to the northern shore for much if its length. Berrington pool is owned and managed for recreation and conservation by the National Trust. Rangers shut off pathways along the lake close to the heronry during the breeding season but do also have a boating event on the lake during the summer months.

3.17 Sites with meres and bog pools as their primary interest features are generally much less susceptible to conventional recreational pressure as the soft, wet and difficult to traverse nature of the protected habitats deter off-track activity on foot.

3.18 While the habitats for which Mottey Meadows SAC is designated are potentially vulnerable to impacts of the Local Plan, the site improvement plan (SIP) does not highlight recreational pressure as an issue. In addition, the site is remote from the population centres of Telford (the closest large settlement being Newport, located more than 9km to the north west).

Increased Water Demand and Impact on Water Quality

3.19 Telford & Wrekin is supplied drinking water and sewerage services by Severn Trent. Severn Trent is one of the largest of the 17 regulated water companies in England and Wales and provides services to more than 4.3 million households and businesses in the Midlands and Chester and treats around 1.4 billion litres of waste water per day.

3.20 The Severn Trent Water Resource Management Plan Summary states that: "*a significant deficit will develop between supply and demand for water over the medium term unless we act… the need to prevent the risk of future environmental deterioration, is a fundamental requirement of the Water Framework Directive. This means that in order to protect our environment for future customers, some of our current sources of water cannot be relied upon in the future and we need to find alternative ways of meeting demand*"

3.21 A third of drinking water supplied by Severn Trent comes from ground water, from a range of sandstone aquifers in the Midlands, Derbyshire and the Cotswolds. The remaining two thirds of water supply comes from rivers and reservoirs in lowland and upland areas like the Peak District. Telford's main water supply comes from groundwater treated at works within Shropshire.

3.22 A total of 22 solutions are contained within the WRMP 2019 to address the forecast shortfall in the supply-demand balance over the planning period. These include water transfers, expansions and enhancements of WwTWs, new WwTWs, and increasing reservoir capacity.

3.23 All three European sites have potential vulnerabilities to water pollution and hydrological changes and therefore will be discussed in more detail within the HRA to assess if the growth within the borough will present any likely significant effects upon these European sites.

3.24 However, the HRA of the WRMP 2019 determined that the demand solutions involve relatively small-scale and temporary activity and are largely concentrated within urban and suburban areas and unlikely to be within close proximity to European sites. The HRA ruled out all by one supply solution as having No Likely Significant Effect on European sites. One transfer solution was taken to Appropriate Assessment however, it was concluded that the implementation of the solution would not have any adverse effect on the integrity of any European sites in the supply area.

3.25 All European sites are outside of the borough, the closest being approximately 400m east of the borough up to over 24km and therefore likely to be even further from any development sites. It is unlikely that there would be hydrological connections between the European sites and development sites within the borough which are likely to focus around the urban areas.

Atmospheric Pollution

3.26 The main pollutants of concern for European sites are oxides of nitrogen (NOx), ammonia (NH3) and sulphur dioxide (SO_2). NOx and ammonia can have a directly toxic effect upon vegetation. In addition, greater NOx or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

3.27 According to the Department of Transport's Transport Analysis Guidance, "*Beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant*"[18]. This is therefore the distance that would be used throughout the HRA in order to determine whether European sites are likely to be significantly affected by development under the Local Plan.

3.28 Around 16,345 people commute from Telford and Wrekin borough either as drivers or passengers in a car or van to their place of work outside of the borough and around 20,981 people commute from the surrounding boroughs and counties into Telford and Wrekin borough for work[19].

3.29 Although the habitats within the various Meres Ramsar sites and Mottey Meadows SAC are potentially vulnerable to air pollution, none of the component SSSIs within 10km of the borough (the average travel distance beyond which traffic tends to disperse across the network) are within 200m of a major road or journey to work route likely to be associated with the borough.

[18] http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php#013; [Accessed 03/01/2020]
[19] https://www.nomisweb.co.uk/census/2011/WU03UK/chart/1132462387 [Accessed 07/07/2020]

4. Next Steps

4.1 The purpose of this section has been to set out the intended scope of the HRA, regarding methodology, other plans and projects for in combination assessment, European sites to be considered and impact pathways to be investigated. An indication has also been given of available evidence sources and those European sites that would appear at this stage to lie outside the zone of influence of development in Telford & Wrekin (Cannock Chase SAC, West Midlands Mosses SAC and Severn Estuary SAC/SPA/Ramsar site). Recreational pressure, water resources and pollution and air pollution will be the primary focus of the Test of Likely Significant Effects.

4.2 The views of Natural England are sought on the proposed scope of the HRA as outlined above, and also on other plans and projects that are considered to need inclusion in the HRA. The next step following receipt of consultee feedback will be to commence the formal Test of Likely Significant Effects.

Appendix A European Sites Background Information

Midlands Meres and Mosses Phase 1 Ramsar

Introduction

4.3 The Meres & Mosses form a geographically discrete series of lowland open water and peatland sites in the north-west Midlands of England. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 16 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats; reed swamps, fen, carr & damp pasture. Peat accumulation has resulted in nutrient poor peat bogs (mosses) forming in some sites in the fringes of meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora & fauna

Qualifying Features[20]

Ramsar Criterion 1

4.4 The site comprises a diverse range of habitats from open water to raised bog.

Ramsar Criterion 2

4.5 Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).

Midlands Meres and Mosses Phase 2 Ramsar

Introduction

4.6 The Meres and Mosses form a geographically diverse series of lowland open water and peatland sites in the north-west Midlands of England and north-east Wales. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 18 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats, reed swamp, fen, carr and damp pasture. Peat accumulation has resulted in the nutrient-poor peat bogs (mosses) forming in some sites on the fringes of the meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora and fauna.

Qualifying Features[21]

Ramsar Criterion 1

4.7 The site comprises a diverse range of habitats from open water to raised bog.

Ramsar Criterion 2

[20] https://jncc.gov.uk/jncc-assets/RIS/UK11043.pdf [Accessed 09/07/20]
[21] https://jncc.gov.uk/jncc-assets/RIS/UK11080.pdf [Accessed 09/07/20]

4.8 Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane *Cicuta virosa* and, elongated sedge *Carex elongata*. Also present are the nationally scarce bryophytes *Dicranum affine* and *Sphagnum pulchrum*.

4.9 Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth *Glyphipteryx lathamella*, the caddisfly *Hagenella clathrata* and the sawfly *Trichiosoma vitellinae*.

Mottey Meadows SAC

Introduction

4.10 This site is an outstanding floristically-diverse mesotrophic grassland where traditional late hay cutting and aftermath grazing has been perpetuated, largely unaffected by modern agricultural practices.

4.11 The site is important because of its large size, variety of grassland community types and presence of rare species. Furthermore, it contains an extensive example of an alluvial flood meadow.

Conservation Objectives[22]

4.12 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

4.13 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and,
- The supporting processes on which qualifying natural habitats rely.

Qualifying Features[23]

4.14 Annex I habitats that are a primary reason for selection of this site:

- Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)

Environmental Vulnerabilities[24]

- Water pollution
- Hydrological changes
- Water abstraction
- Change in land management

[22] http://publications.naturalengland.org.uk/publication/5720449535180800 [Accessed 09/07/2020]
[23] https://sac.jncc.gov.uk/site/UK0030051 [Accessed 09/07/2020]
[24] http://publications.naturalengland.org.uk/publication/6519033218203648 [Accessed 09/07/2020]

Cannock Chase SAC

Introduction

4.15 Cannock Chase is a large, diverse area of semi-natural vegetation comprising the most extensive area of lowland heathland in the Midlands with alder woodland, oak wood pasture and valley mires. It is home to breeding Nightjar, Woodlark, occasionally Dartford warbler and a diverse invertebrate fauna. The character of the vegetation is intermediate between the upland or northern heaths of England and Wales and those of southern counties.

4.16 Cannock Chase Special Area of Conservation is also a Country Park and lies in the heart of Cannock Chase Area of Outstanding Natural Beauty. Given its location it is a popular outdoor recreation destination and is subject to high visitor pressure. The Cannock Chase SAC Partnership has been set up to deliver robust access management measures to mitigate the negative effects of predicted future increases in recreational usage of the SAC. Current management of SAC land is targeted at restoring and strengthening the heathland vegetation mosaics.

Conservation Objectives[25]

4.17 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

4.18 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and,
- The supporting processes on which the qualifying natural habitats rely.

Qualifying Features[26]

4.19 Annex I habitats that are a primate reason for selection of this site:

- European dry heaths

4.20 Annex I habitats present as a qualifying feature, but not primary reason for selection of this site:

- Northern Atlantic wet heaths with Erica tetralix

Environmental Vulnerabilities[27]

- Undergrazing
- Drainage
- Hydrological changes
- Disease
- Air pollution: impact of atmospheric nitrogen deposition
- Wildfire/arson
- Invasive species

[25] http://publications.naturalengland.org.uk/publication/6687924741472256 [Accessed 09/07/2020]
[26] https://sac.jncc.gov.uk/site/UK0030107 [Accessed 09/07/2020]
[27] http://publications.naturalengland.org.uk/publication/4957799888977920 [Accessed 09/07/2020]

West Midland Mosses SAC

Introduction

4.21 The West Midlands Mosses comprises four sites: Clarepool Moss, Abbots Moss, Chartley Moss and Wybunbury Moss.

4.22 These support large basin mires which have developed as quaking bogs, known as Schwingmoors, together with a variety of associated hollows and pools showing various types and stages of mire development. This complexity of habitats gives rise to a diverse assemblage of associated plants and invertebrates of national significance.

Conservation Objectives[28]

4.23 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

4.24 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats;
- The structure and function (including typical species) of qualifying natural habitats; and
- The supporting processes on which qualifying natural habitats rely.

Qualifying Features[29]

4.25 Annex I habitats that are a primary reason for selection of this site:

- Natural dystrophic lakes and ponds
- Transition mires and quaking bogs

Environmental Vulnerabilities[30]

- Water pollution
- Hydrological changes
- Air pollution: impact of atmospheric nitrogen deposition
- Inappropriate scrub control
- Game management: pheasant rearing
- Forestry and woodland management
- Habitat fragmentation

[28] http://publications.naturalengland.org.uk/publication/6449667604742144 [Accessed 09/07/2020]
[29] https://sac.jncc.gov.uk/site/UK0013595 [Accessed 09/07/2020]
[30] http://publications.naturalengland.org.uk/publication/5422476326600704 [Accessed 09/07/2020]

Severn Estuary SAC/SPA/Ramsar

Introduction

4.26 The Severn Estuary is located between Wales and England in south-west Britain. It is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The subtidal seabed is rock and gravel with subtidal sandbanks. The site also supports reefs of the tube forming worm *Sabellaria alveolata*.

4.27 The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have one of the highest tidal ranges in the world. A consequence of the large tidal range is an extensive intertidal zone, one of the largest in the UK. The tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide-swept sand and rock. The species-poor intertidal invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders and fish.

4.28 The site is of importance during the spring and autumn migration periods for waders, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders. The fish fauna is very diverse with more than 110 species identified. The site is of particular importance for migratory fish.

Conservation Objectives[31]

4.29 With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

4.30 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and,
- The distribution of the qualifying features within the site.

4.31 With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

4.32 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and,

[31] http://publications.naturalengland.org.uk/publication/6081105098702848 [Accessed 09/07/2020]

- The distribution of qualifying species within the site.

Qualifying Features

4.33 With regards to the Ramsar site[32]:

Ramsar Criterion 1

4.34 Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities

Ramsar Criterion 3

4.35 Due to unusual estuarine communities, reduced diversity and high productivity

Ramsar Criterion 4

4.36 This site is important for the run of migratory fish between sea and river via estuary. Species include salmon *salmo salar*, sea trout *salmo trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *Alosa fallax*, and eel *Anguilla Anguilla*. It is also of particular importance for migratory birds during spring and autumn.

Ramsar Criterion 8

4.37 The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon, sea trout, sea lamprey, river lamprey, allis shad, twaite shad, and eel use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad and twaite shad which feed on mysid shrimps in the salt wedge.

Ramsar Criterion 5

4.38 Assemblages of international importance: Species with peak counts in winter: 70919 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar Criterion 6

4.39 Qualifying Species/populations (as identified at designation): Species with peak counts in winter:

- Tundra swan, *Cygnus columbianus bewickii*, NW Europe 229 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9- 2002/3)
- Greater white-fronted goose, *Anser albifrons albifrons*, NW Europe 2076 individuals, representing an average of 35.8% of the GB population (5 year peak mean for 1996/7-2000/01)
- Common shelduck, *Tadorna tadorna*, NW Europe 3223 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)
- Gadwall, *Anas strepera strepera*, NW Europe 241 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9- 2002/3)
- Dunlin, *Calidris alpina alpina*, W Siberia/W Europe 25082 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3)
- Common redshank, *Tringa totanus totanus*, 2616 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)

4.40 Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species regularly supported during the breeding season:

[32] https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf [Accessed 09/07/2020]

- Lesser black-backed gull, *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa 4167 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census)

4.41 Species with peak counts in spring/autumn:

- Ringed plover, *Charadrius hiaticula*, Europe/Northwest Africa 740 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)

4.42 Species with peak counts in winter:

- Eurasian teal, *Anas crecca*, NW Europe 4456 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
- Northern pintail, *Anas acuta*, NW Europe 756 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9- 2002/3)

4.43 With regards to the SPA[33]:

4.44 Article 4.1 Qualification - over winter the area regularly supports:

- Bewick's swan (Western Siberian/North-western Europe) – 3.9% of the GB population 5 year peak mean 1991/92 – 1995/96

4.45 Article 4.2 Qualification – over winter the area regularly supports:

- Gadwall (North-western Europe) – 0.9% of the population 5 year peak mean 1991/92 – 1995/96
- Greater white-fronted goose (North-western Siberia/North-eastern and North-western Europe) – 0.4% of the population 5 year peak mean 1991/92 – 1995/96)
- Dunlin (Northern/Siberia/Europe/Western Africa) – 3.3% of the population 5 year peak mean 1991/92 – 1995/96
- Shelduck (North-western Europe) – 1.1% of the population 5 year peak mean 1991/92 – 1995/96
- Redshank (Eastern Atlantic – wintering) – 1.3% of the population 5 year peak mean 1991/92 – 1995/96

4.46 Article 4.2 Qualification – an internationally important assemblage of birds – over winter the area regularly supports:

- 84,317 waterfowl (5 year peak mean 1991/92 – 1995/96). Including: bewick's swan, shelduck, gadwall, dunlin and redshank.

4.47 With regards to the SAC[34]:

4.48 Annex I habitats that are a primary reason for selection of this site:

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

4.49 Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- Sandbanks which are slightly covered by sea water all the time
- Reefs

[33] https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9015022.pdf [Accessed 09/07/2020]
[34] https://sac.jncc.gov.uk/site/UK0013030 [Accessed 09/07/2020]

4.50 Annex II species that are a primary reason for selection of this site:

- Sea lamprey
- River lamprey
- Twaite shad

Environmental Vulnerabilities[35]

- Public access/disturbance
- Physical modification
- Impacts of development
- Coastal squeeze
- Change in land management
- Change in species distribution
- Water pollution
- Air pollution: impact of atmospheric nitrogen deposition
- Marine consents and permits: minerals and waste
- Fisheries: recreational marine and estuarine
- Fisheries: commercial marine and estuarine
- Invasive species
- Marine litter
- Marine pollution incidents

[35] http://publications.naturalengland.org.uk/publication/4590676519944192 [Accessed 09/07/2020]

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