

M54 to M6 Link Road

TR010054

Volume 6

6.1 Environmental Statement
Chapter 6 – Cultural Heritage

Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

January 2020

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009**

**M54 to M6 Link Road
Development Consent Order 202[]**

**6.1 Environmental Statement
Chapter 6 Cultural Heritage**

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6 Cultural Heritage

6.1 Introduction

- 6.1.1 This chapter assesses the potential cultural heritage impacts associated with the construction and operation of the Scheme, following the methodology set out in Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 2 Cultural Heritage (LA 106) (Ref 6.1) and DMRB Volume 11, Section 2, Part 4 Environmental assessment and monitoring (LA 104) (Ref 6.2). This chapter summarises the regulatory and policy framework related to cultural heritage, details the methodology followed for the assessment and describes the existing environment in the area surrounding the Scheme. Following this, the design, mitigation and residual effects of the Scheme are presented.
- 6.1.2 This chapter of the Environmental Statement (ES) has been prepared by competent experts with relevant and appropriate experience. The technical leads for the cultural heritage assessment both have over 18 years of relevant experience and have professional qualifications as summarised in Appendix 1.1 [TR010054/APP/6.3].

6.2 Legislative and policy framework

Legislation

- 6.2.1 The following legislation is of direct relevance to the assessment of cultural heritage and have informed the assessment methodology:
- The Ancient Monuments and Archaeological Areas Act 1979 (Ref 6.3).
 - The Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref 6.4).

Planning Policy

- 6.2.2 The primary basis for deciding whether or not to grant a Development Consent Order (DCO) is the National Policy Statement for National Networks (NPSNN)¹ (Ref 6.5) which sets out policies to guide how DCO applications would be decided and how the impacts of national networks infrastructure should be considered. Table 6.1 identifies the NPSNN policies relevant to the cultural heritage assessment and where in this ES chapter information is provided to address these policy requirements.

Table 6.1: NPSNN policies relevant for the cultural heritage assessment

NPSNN para.	Requirement of the NPSNN	Location where information addresses policy requirements
5.124	Non-designated assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments should be considered subject to the policies for	Refer to Section 6.3 'Assessment Methodology'. DMRB methodology requires undesignated assets of schedulable quality and importance to

¹ Although other policies can have weight as relevant and important matters in decision making. See Case for the Scheme for more information [TR010054/APP/7.2].

NPSNN para.	Requirement of the NPSNN	Location where information addresses policy requirements
	designated heritage assets.	be assigned 'High' as its value.
5.125	The Secretary of State should also consider the impacts on other non-designated heritage assets.	Refer to Section 6.9 'Assessment of likely significant effects'.
5.126 and 5.127	The applicant should undertake an assessment of any likely significant heritage impacts of the proposed project as part of the EIA. The applicant should include an appropriate desk-based assessment and, where necessary, undertake a field evaluation.	Refer to Section 6.6 'Baseline conditions'. This section includes the results of geophysical survey and monitoring of geotechnical work. Refer to Appendix 6.2 [TR010054/APP/6.3] and Appendix 6.3 [TR010054/APP/6.3].
5.131	When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset's conservation. The more important the asset, the greater the weight should be.	Details of the significance of assets (designated and non-designated) is contained with Section 6.9 'Assessment of likely significant effects'.
5.133	Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits which outweigh that loss or harm.	The Scheme would not have substantial harm upon any designated heritage assets.
5.134	Where the proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.	Refer to the Case for the Scheme and NPSNN Accordance Table [TR010054/APP/7.2]
5.135	Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. The Secretary of State should treat the loss of a building (or other element) that makes a positive contribution to the site's significance either as substantial harm or less than substantial harm, as appropriate, taking into account the relative significance of the elements affected and their contribution to the significance of the Conservation Area or World Heritage Site as a whole.	There are no impacts on World Heritage Sites or Conservation Areas.
5.137	Applicants should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance.	There are no impacts on World Heritage Sites or Conservation Areas.

NPSNN para.	Requirement of the NPSNN	Location where information addresses policy requirements
5.140	Requirement to record and advance understanding of a heritage asset's significance prior to it being lost if this loss is justified.	Refer to Section 6.8 'Design, mitigation and enhancement measures' for details of mitigation.
5.142	Consider requirements to ensure that appropriate procedures are in place for the identification and treatment of yet undiscovered heritage assets with archaeological interest discovered during construction.	Refer to Section 6.8 'Design, mitigation and enhancement measures' for details of mitigation.
5.144 to 5.146	The applicant should undertake an assessment of any likely significant landscape and visual impacts in the EIA. The applicant's assessment should include significant effects during construction of the project and/or its operation on landscape components and landscape character (including historic landscape characterisation).	Details of the significance of assets (designated and non-designated) is contained with Section 6.9 'Assessment of likely significant effects'.

6.2.3 An assessment of the Schemes conformity with the relevant paragraphs and provisions for cultural heritage in the NPSNN is presented in the NPSNN Accordance Table, Annex A of the Case for the Scheme [TR010054/APP/7.2].

6.2.4 The National Planning Policy Framework (NPPF) (Ref 6.6) is of relevance to this cultural heritage assessment, with particular reference to Section 16 Conserving and Enhancing the Historic Environment. In accordance with the NPPF, the NPSNN policies relating to the applicant's assessment are the primary source of policy guidance regarding this assessment.

6.2.5 Other relevant national and local policies have been considered as part of the cultural heritage assessment where these have informed the identification of receptors and resources and their sensitivity; the assessment methodology; the potential for significant environmental effects; and required mitigation. These policies include:

- National Planning Practice Guidance (PPG) (Ref 6.7).
- Historic Environment Good Practice Advice in Planning Note 2 (GPA2). Managing Significance in Decision Taking in the Historic Environment (Ref 6.8).
- Historic Environment Good Practice Advice in Planning Note 3 (GPA3). The Setting of Heritage Assets (2nd edition), (Ref 6.9).
- Historic England Advice Note 12 (HEAN12). Statement of Heritage Significance (Ref 6.10).
- The South Staffordshire Core Strategy Document (Ref 6.11) includes the following policies in relation to heritage:

- Core Policy 2: Protecting and Enhancing the Natural and Historic Environment;
- Strategic Objective 5: To protect, conserve and enhance the historic environment and heritage assets and ensure that the character and appearance of the District's conservation areas is sustained and enhanced through management plans and high-quality design;
- Policy EQ3: Conservation, Preservation and Protection of Heritage Assets; and
- Policy EQ4: Protecting and Enhancing the Character and Appearance of the Landscape (which includes specific reference to historic parks).

6.3 Assessment methodology

General approach

6.3.1 The cultural heritage assessment includes the consideration of the potential for the Scheme to impact on the following elements (Ref 6.1):

- Monuments: architectural works, works of monumental sculpture and painting; elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features.
- Groups of buildings: groups of separate or connected buildings (recognised for their architecture, homogeneity or their place in the landscape).
- Sites: material remains resulting from the works of humans or the combined works of nature and humans, and areas including archaeological sites.

6.3.2 Key methodology documents of relevance to the cultural heritage assessment are as follows:

- DMRB, LA 106 Cultural Heritage Assessment (Ref 6.1).
- DMRB, LA 104 Environmental Assessment and Monitoring (Ref 6.2)
- Chartered Institute for Archaeologists Code of Conduct (Ref 6.12) – sets out standards of ethical and responsible behaviour in the conduct of archaeological affairs to which members of the institute are expected to adhere;
- Chartered Institute for Archaeologists, Code of Conduct and Standards and Guidance for Historic Environment Desk-based Assessment (Ref 6.12 and Ref 6.13) – sets out the appropriate standards for undertaking desk-based cultural heritage assessments;
- Planning Practice Guidance (Ref 6.7);
- Historic England Good Practice Advice Note GPA3, The Setting of Heritage Assets (Ref 6.9); and
- Historic England Advice Note 12, Statement of Heritage Significance (Ref 6.10)

Establishing baseline conditions

Desk study

- 6.3.3 The following data sources have been used to inform the assessment of cultural heritage impacts on receptors as a result of the Scheme:
- National Heritage List for England;
 - Staffordshire Historic Environment Record (HER);
 - Staffordshire Records Office;
 - National Library of Scotland;
 - Historic Ordnance Survey mapping;
 - Historic Environment Scotland Aerial Photographic Collection (Ref 6.14) – to obtain aerial photographic coverage; and
 - Historic England Archive Service of aerial photographs.
- 6.3.4 Examination and comparison of historic mapping and aerial photography was undertaken to identify the existence and form of landscape elements such as field boundaries, road patterns, ponds, woods, lanes and paths.
- 6.3.5 Information relating to the existing geological and soils environment (refer to Chapter 9: Geology and Soils, Section 9.6) has also been referenced in the assessment.

Fieldwork

- 6.3.6 An archaeological walkover survey was undertaken by qualified and experienced archaeologists and built heritage consultants on 22 January 2019 where land access was obtained from landowners within the study area. The purpose of the walkover was to record the survival, extent, condition, setting and significance of known assets, and to confirm their location and relationship to other sites. No additional archaeological features were noted over those recorded through the desk studies.
- 6.3.7 Information presented in Chapter 9: Geology and Soils, obtained through ground investigations (GI) undertaken in July 2019 to establish the existing ground conditions, has been referenced in the assessment, in order to establish the existing geological and soils environment and identify any areas of previous disturbance. The Ground Investigation Archaeological Monitoring Report relating to these investigations is presented in Appendix 6.2 [TR010054/APP/6.3].
- 6.3.8 A non-intrusive geophysical survey was undertaken in April 2019 to identify the potential location and extent of buried archaeological remains. A Multi-Sensor Array Cart System was used to cover all areas of land within the Scheme boundary where land access had been granted and where conditions were suitable for survey, the findings of which have been used to establish the archaeological significance and potential of the area, and to inform the development of a future programme of intrusive surveys and investigation. The findings of the geophysical survey are reported in Appendix 6.3 [TR010054/APP/6.3].

Value of heritage assets

- 6.3.9 The value of a building, monument, area, site, place or landscape reflects its significance as a historic asset, and therefore its sensitivity to change.
- 6.3.10 Certain types of heritage asset have a level of significance that justify official designation, such as scheduled monuments and listed buildings; however, the absence of designation does not necessarily mean heritage assets are of lower value or significance.
- 6.3.11 The NPPF (Ref 6.6) defines significance of heritage assets as “*The value of a heritage asset to this and future generations because of its heritage interest*” (NPPF, Annex 2 Glossary). In addition, the NPPF sets out criteria which should be considered when assessing the significance of cultural heritage assets, which include archaeological, architectural, artistic and historic values. The significance of each asset is described in these terms and the contribution the setting of the heritage assets makes to its significance is also assessed. The Chartered Institute for Archaeologists guidance (Ref 6.13) also requires the significance of heritage assets to be assessed.
- 6.3.12 Professional judgement based on knowledge and experience of similar schemes, has been used to identify the value and significance of assets, guided by legislation (Ref 6.3, Ref 6.4), national policy (Ref 6.5, Ref 6.6), standards, official designations and the criteria contained within DMRB guidance (Ref 6.2), reproduced in Table 4.1, Chapter 4: Assessment Methodology.

Magnitude of impact criteria

- 6.3.13 Impacts have been identified by reviewing the identified sites, features and areas within the study area against the form and extent of the Scheme, in order to establish which assets would be affected by its construction and operation.
- 6.3.14 Impacts identified in the assessment relate to the predicted changes to key elements of an asset and/or its setting. These can, for example, derive from temporary or permanent actions such as the physical destruction of buried archaeology during construction works, and the introduction of new highway infrastructure into the historic setting of a building or conservation area.
- 6.3.15 The identification of impacts takes account of all embedded and standard mitigation measures described in Section 6.8.
- 6.3.16 In line with the DMRB (Ref 6.2) the magnitude of impact has been assessed in line with the descriptions reproduced in Table 4.1, Chapter 4: Assessment Methodology.

Assigning significance

- 6.3.17 The significance of effects must be reported within Environmental Statements in accordance with the EIA Directive. The approach to assigning significance of effect relies on reasoned argument, the professional judgement of competent experts as well as using effective consultation to ensure the advice and views of relevant stakeholders are taken into account. In line with the DMRB (Ref 6.2) the

descriptions of significance outlined in Table 4.4, Chapter 4: Assessment Methodology have been applied.

- 6.3.18 The identification of the likely significant effects on cultural heritage assets has been undertaken using professional judgement, based on knowledge and experience of similar schemes, and has involved combining the value of an asset with the predicted magnitude of impact. The approach to deriving the effects significance from receptor value and magnitude of impacts is based on the significance matrix set out in the DMRB (Ref 6.2) and reproduced in Table 4.3, Chapter 4: Assessment Methodology.
- 6.3.19 The matrix has been used to guide the identification and assessment of effects on cultural heritage; however, where professional judgement has resulted in a deviation from the thresholds contained in the matrix these are explained within the relevant sections of the chapter and are supported by appropriate evidence and explanation.
- 6.3.20 Moderate, large and very large effects are considered to be significant. Within the NPPF, impacts affecting the value of heritage assets are considered in terms of harm and there is a requirement to determine whether the level of harm amounts to ‘substantial harm’ or ‘less than substantial harm’. There is no direct correlation between the significance of effect as reported in this ES and the level of harm caused to heritage significance. A major (significant) effect on a heritage asset would, however, more often be the basis by which to determine that the level of harm to the significance of the asset would be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine that the level of harm to the significance of the asset would be less than substantial. A minor or negligible (not significant) effect would still amount to a less than substantial harm, which triggers the statutory presumptions against development within s.66 of the Listed Buildings Act 1990; however, a neutral effect is classified as no harm. In all cases determining the level of harm to the significance of the asset arising from development impact is one of professional judgement.

Scoping response

- 6.3.21 The proposed scope of the cultural heritage assessment was detailed in the EIA Scoping Report (Ref 6.15) submitted to the Inspectorate on 11 January 2019. An overview of the Inspectorate’s Scoping Opinion in relation to cultural heritage effects is presented in Table 6.2. Where the assessment has been undertaken in accordance with the Scoping Opinion point, a response and the relevant ES section is provided; where an alternative approach has been agreed with the relevant stakeholders, an explanation is provided.

Table 6.2: Scoping opinion and response

Scoping Opinion	Where addressed in the ES
The Inspectorate	
The Applicant has defined a study area of 1 km from the draft DCO site boundary for the assessment of cultural	Refer to Section 6.5 ‘Study area’

Scoping Opinion	Where addressed in the ES
<p>heritage baseline conditions. It is not clear why the distance of 1km was chosen and whether it includes the areas of effect for archaeology, built heritage, and historic landscape settings (as defined within DMRB HA 208/07). The ES should provide a robust justification as to why the 1km study area is appropriate and sufficient to capture all heritage assets which could experience impacts on their setting, taking into account for example, visual intrusion and/ or increased noise emissions.</p> <p>To support this justification, the ES should cross refer to the Zone of Visual Influence (ZVI) developed for the Landscape and Visual Impact Assessment (LVIA) and the conclusions of the noise impact assessment.</p>	<p>for justification of the study area.</p>
<p>The Inspectorate notes that geoarchaeological and palaeoenvironmental deposits during intrusive site investigation and construction works are not addressed in the Scoping Report. There is also no consideration of historic landscape features, such as hedges and field boundaries.</p> <p>The Inspectorate considers that such features may make an important contribution to the assessment of cultural heritage and should therefore be included within the scope of assessment.</p>	<p>The potential for environmental archaeology deposits is considered in paragraphs 6.6.40 to 6.6.49. Archaeological monitoring of the GI did not identify any significant deposits (Appendix 6.2 [TR010054/APP/6.3]). Other historic landscape features are discussed in the relevant section of Section 6.6.</p>
<p>The Applicant should discuss and seek to agree the scope of such assessments with relevant consultation bodies following completion of the desk study and site walkover assessment.</p>	<p>Refer to Section 6.3 'Assessment methodology' paragraphs 6.3.22 to 6.3.25 for details on consultation with Historic England and the County Archaeologist throughout the assessment period.</p>
Historic England	
<p>This development could, potentially, have an impact upon a number of designated heritage assets and their settings in the area around the site. In line with the advice in the National Planning Policy Framework (NPPF), we would expect the Environmental Statement to contain a thorough assessment of the likely effects which the proposed development might have upon those elements which contribute to the significance of these assets.</p>	<p>Refer to Section 6.9 'Assessment of likely significant effects' for the assessment of effects in line with the NPPF.</p>
<p>We would also expect the Environmental Statement to consider the potential impacts on non-designated features of historic, architectural, archaeological or artistic interest, since these can also be of national importance and make an important contribution to the character and local distinctiveness of an area and its sense of place.</p>	<p>Refer to Section 6.3 'Assessment methodology and Section 6.9 'Assessment of likely significant effects'</p>
<p>We would strongly recommend that you involve the Conservation Officer at South Staffordshire Council and the archaeological staff at Staffordshire County Council in the development of this assessment.</p>	<p>Consultation has been undertaken with historic environment advisors at South Staffordshire Council and</p>

Scoping Opinion	Where addressed in the ES
	Staffordshire County Council. Refer to Section 6.3 'Assessment methodology' paragraphs 6.3.22 to 6.3.23 and the Consultation Report [TR010054/APP/5.1].
It is important that the assessment is designed to ensure that all impacts are fully understood. Section drawings and techniques such as photomontages are a useful part of this.	Please see Figures 6.5 and 6.6 and photos included in Appendix 6.5 [TR010054/APP/6.3].
The assessment should also take account of the potential impact which associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of alterations to drainage patterns that might lead to in situ decomposition or destruction of below ground archaeological remains and deposits, and can also lead to subsidence of buildings and monuments.	Refer to Section 6.9 'Assessment of likely significant effects'.
Staffordshire County Council – Refer to Appendix 6.4 [TR010054/APP/6.3]	

Consultation

- 6.3.22 Ongoing consultation has been undertaken with the County Archaeologist for Staffordshire County Council and Historic England.
- 6.3.23 Consultation undertaken with the County Archaeologist has been used to determine the methodology for archaeological fieldwork, including the archaeological monitoring of geotechnical investigation and the geophysical survey. Subsequently, the requirement for further archaeological evaluation was discussed. It was agreed that evaluation trenching should be undertaken after the submission of the DCO once the detailed design has progressed. This will allow a more focussed and appropriate level of evaluation. However, this should be undertaken early in the programme, to allow the development and implementation of mitigation measures, particularly where any additional archaeological features are identified.
- 6.3.24 Historic England have been consulted throughout the design and assessment stages of the Scheme. Additional research and information that Historic England requested has been incorporated in to the baseline and supports the assessment of likely significant effects presented in Section 6.9.
- 6.3.25 The Preliminary Environmental Information (PEI) Report for this Scheme was published in May 2019 as part of the statutory consultation. The PEI Report presented the environmental information collected, together with the preliminary findings of the assessment of likely significant environmental effects of the Scheme at the time. Comments received during public consultation and the associated responses, are detailed within the Consultation Report [TR010054/APP/5.1].

6.4 Assessment assumptions and limitations

Scheme design and limits of deviation

- 6.4.1 The assessment has been based on the Scheme description detailed within Chapter 2: The Scheme and has taken into account the lateral and vertical limits of deviation defined in paragraphs 2.5.29 to 2.5.39 and illustrated on the Works Plans [TR010054/APP/2.4] in order to establish a realistic worst case assessment scenario.
- 6.4.2 This assessment identifies and reports the effect that any lateral and/or vertical deviation would realistically give rise to. This has, for example, taken into account the potential for components of the Scheme to be positioned at a slightly higher elevation, or brought into closer proximity to heritage receptors, and thereby potentially result in an effect on their setting.
- 6.4.3 Notwithstanding any potential deviation, all archaeological mitigation measures described in Section 6.8 are deliverable within the limits of deviation.

Baseline survey data

- 6.4.4 The assessment has been undertaken with reference to the baseline data, information and records pertaining to the historic environment derived from desk-based sources. These were subsequently validated and enhanced through field surveys where land access was obtained from landowners.
- 6.4.5 In locations where access was not granted by landowners to undertake the geophysical survey, baseline information was gathered through site-based observations made from public rights of way as part of the walkover survey. Details of the areas where permission was not obtained to enter land to undertake geophysical surveys are presented within the geophysical survey report (see Appendix 6.3 [TR010054/APP/6.3]).
- 6.4.6 The baseline data and records obtained are considered to be representative of the conditions that would exist at the point of commencing Scheme construction, as described in Section 6.6, as the nature of the historic environment is such that no material changes to its form, character and appearance are predicted to occur during this time.

Impact assessment

- 6.4.7 The value of historic buildings identified within the 1 km study areas was established and assessed through external inspections.
- 6.4.8 The assessment of temporary construction effects has considered the peak activity periods, for example when taller and/or visually prominent plant and equipment such as cranes would be visible and in use, in order to assess the reasonable worst case in relation to potential impacts and effects on the setting of assets.
- 6.4.9 The assessment of impacts and effects has assumed that all individual finds recorded within the assessment study areas were removed when found, and are no longer *in situ*.

6.5 Study area

- 6.5.1 The 1 km study area is illustrated in Figure 6.1 [TR010054/APP/6.2].
- 6.5.2 The process of scoping identified that a 1 km study area around the Scheme boundary would be appropriate to identify any potential effects on designated heritage assets and their settings. This study area was defined following guidance provided in the DMRB LA 106 (Ref 6.1). The Zone of Theoretical Visibility outlined in Chapter 7: Landscape and Visual and the conclusions of the noise impact assessment have been considered when determining the study area for the ES. The 1 km study area is considered appropriate in order to place heritage assets within their wider context and to understand the landscape within which they are located. Assets of the highest significance (Grade I and II* listed buildings and scheduled monuments) beyond the defined 1 km study area have also been identified where required. However, these assets have only been discussed where the wider landscape forms a key contributing factor in their significance and where this has the potential to be affected by the scheme. This has ensured that the assessment is proportionate, in accordance with the requirements of the NPSNN and NPPF.
- 6.5.3 The study area was agreed with the County Archaeologist for Staffordshire through engagement on local historic issues and priorities, and it includes all land to be temporarily and permanently acquired within the Scheme's Order limits, extending outward in all directions to their respective distances. The exception is locations where both new signage faces and signage bases are required. These are all located within existing highway boundaries and would not cause significant effects on heritage assets.

6.6 Baseline conditions

- 6.6.1 A list of designated and non-designated heritage assets has been provided within Appendix 6.1 [TR010054/APP/6.3].
- 6.6.2 The desk-based review of available records confirms the following heritage assets are present within the study area:
- 59 non-designated archaeological assets, dating from the prehistoric to the modern periods;
 - a total of two Grade I, three Grade II* and 21 Grade II listed buildings; and
 - a total of 13 historic buildings and structures, including seven locally listed buildings or structures.
- 6.6.3 No World Heritage Sites, scheduled monuments, registered battlefields, registered parks and gardens or conservation areas are present within the study area.
- 6.6.4 The assets are described in more detail below. Each asset has a unique record number (indicated in brackets) which cross-refers to their location as shown on Figure 6.1 to 6.3 [TR010054/APP/6.2] and summarised in Appendix 6.1 [TR010054/APP/6.3]. Assets with an 'A' prefix are archaeological sites, while a 'B' prefix indicates a historic building.

Geology and soils

- 6.6.5 The 1:50,000 scale Solid and Drift geological map for Wolverhampton (Ref 6.16) and the BGS GeoIndex (Ref 6.17) mapping, provide information on the published geology in the area of the Scheme. The geology along the Scheme is shown in Figure 9.2 [TR010054/APP/6.2] in support of Chapter 9: Geology and Soils. Further details expanding on the summary below can be found in Chapter 9.
- 6.6.6 Several deposits of Made Ground are present within the study area. North and south of the existing M54 Junction 1 ‘made’ or ‘artificial ground’ is noted to be present on the BGS mapping. An area (approx. 600 m²), immediately south of the M54 Junction 1 is considered to consist of Made Ground described as ‘infilled ground’. This is likely to be colliery spoil associated with the former Hilton Colliery. Made Ground described as ‘worked ground’ is also present at Junction 11 of the existing M6. A further area of infilled ground is present east of the M6 approximately 510 m east of the Scheme.
- 6.6.7 The BGS maps indicate that the superficial deposits underlying the majority of the Scheme are the Devensian Till – Diamicton described by the BGS as “variable lithology, usually sand, silty clay with pebbles, but can contain gravel rich, or laminated sand layers; varied colour and consistency”. Variations to this include a strip of alluvium associated with an unnamed watercourse which runs north-east to south-west across the A460 and M6. The alluvium is described as “normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. A stronger, desiccated surface zone may be present”. No superficial deposits are present in areas around the Tower House Farm (North of M54), Rosemary House (on Hilton Lane) and the immediate area south of the alluvium strip.
- 6.6.8 The BGS maps indicate that the solid geology underlying the majority of the Scheme is the Chester Formation (Sandstone and Conglomerate Interbedded) of the Sherwood Sandstone Group. Along the eastern boundary of the Scheme boundary there are areas of the Clant Formation and Enville Formation, classified by the BGS as undifferentiated mudstone and sandstone. To the east of the M54 Junction 1 a relatively thin strip of the Chester Formation (mudstone) crosses the M54 in a north-south orientation, overlying the interbedded sandstone and conglomerate. The Chester Formation in the West Midlands area generally comprises conglomerates and reddish brown, cross-bedded, pebbly sandstones with subordinate beds of red-brown mudstone. The BGS website describes this formation as “pebble conglomerates and reddish brown sandstones. The sandstones are cross-bedded and pebbly. The conglomerates have a reddish brown sandy matrix and consist mainly of pebbles of brown or purple quartzite, with quartz conglomerate and vein quartz”.
- 6.6.9 The small section of the Scheme along the A462 (east of M6) is underlain by the Halesowen Formation (mudstone, siltstone and sandstone).

Archaeology

- 6.6.10 Evidence of early prehistoric period in this region of Britain are rare, but there are examples of Upper Palaeolithic sites at caves within the Staffordshire Peak District (Ref 6.25) as well as small Mesolithic assemblages beneath round barrows in this area (Ref 6.25). Prehistoric monuments from the Neolithic are concentrated within the Avon valley and around the Trent-Tame confluence (Ref 6.25). The evidence of the prehistoric is equally limited within the study area and is represented by only four recorded sites. The earliest of these is the find spot of a Neolithic axe (c. 4000 to 2200 BC) (A50), which was not found with any other evidence of this period.
- 6.6.11 Into the Bronze Age, monuments became more visible in the West Midlands, with c.900 round barrows and ring ditches recorded across the region (Ref 6.25). Concentrations of these have been noted in the Avon, middle Trent and upper Severn valleys, while very few assets are recorded in the central part of the region. During the Iron Age, however, settlement evidence became more prominent, with funerary monuments less evident (Ref 6.25). In addition to this, the landscape was increasingly farmed and divided towards the end of the prehistoric period. A find spot of a Bronze Age (c. 2200 to 700 BC) palstave axe (A49) is also recorded. Prehistoric settlement evidence is very limited, and includes a possible burnt mound (A2), also believed to be Bronze Age in date, and the site of a possible barrow (SJ 94 05, exact location unknown). It is possible that some of the cropmarks in the area (e.g. A22, A23, A25, A27, A34 and A36), of unknown date, may have their origins in the later prehistoric period, or the early part of the Roman period.
- 6.6.12 Staffordshire at the time of the Roman occupation was thought to be thinly populated and dominated by woodland (Ref 6.26). However, there are still various Roman sites recorded across the county. A number of forts were recorded along the western side of the county, thought to reflect the Romans' defences against the Welsh tribes. There is also a major road which ran through the county, in addition to Watling Street. This is known as Rykniel Street which ran from Yorkshire to the West Country (Ref 6.25).
- 6.6.13 There are two recorded assets of Roman (AD 43 to 410) date within the study area. The exact location for the discovery of these assets is unknown and they comprise the find spots of a silver denarius coin of Hadrian (A47) and a copper alloy Colchester brooch (A46). Just outside the study area, to the west, is the Roman road between Featherstone and Pennocrum, near the modern village of Penkridge, where there is a cluster of scheduled Roman settlement and military sites. This cluster of sites includes the site of the Pennocrucium, a small Roman town within a rectangular defended enclosure, covering an area of 5 ha. The town was located along Watling Street, which ran from Colchester to Wroxeter, and was mentioned in the Itinerary of Antoninus in the 3rd century AD (Ref 6.17). Excavations within the interior of the enclosure indicated that there were timber frame buildings fronting Watling Street, along with rubbish pits, cobbled lanes and pottery dating from the 1st to the 4th century AD. Surrounding this town was a possible vexillation fortress, thought to date to the mid-1st century AD, two forts

and a number of camps. These camps were thought to be located at strategic points along the Roman road system from Watling Street towards Chester, Wroxeter and Greensforge.

- 6.6.14 Following the Roman occupation, Staffordshire lay within the Anglo-Saxon kingdom of Mercia from the 6th century until the Danish invasion in the 9th century. The Vikings settled at Repton in AD874 and Watling Street formed the boundary between the two kingdoms. To the north of Watling Street, the area was under Danelaw and to the south it remained under Saxon control (Ref 6.26). Throughout this period, settlement patterns gradually shifted towards nucleation, although small farms and hamlets still remained at the end of the early medieval period (Ref 6.25). There are nine sites of early medieval date (AD 410 to 1066) recorded in the study area. These include the deserted settlement of Hilton or Haltone (A56), which is centred around Hilton Park. The settlement was first recorded in the very late 10th century and it is recorded in the Domesday Book. The date of desertion is not known, and no above-ground evidence survives within the current park. Three more settlements of early medieval origin are also recorded in the study area, at Essington/ Eseningtone (A54), Little Saredon (A57), and Shareshill / Servedes (A58). Many of these settlements are recorded in the Domesday Book (Ref 6.18) and have surviving earthworks relating to the former settlements. The settlement of Featherstone/ Ferdestan (A55) may also have its origins in the early medieval period, but it is not recorded in the Domesday Book.
- 6.6.15 There are two moated sites recorded as dating from the early medieval period. The first is located east of the church in Shareshill (A20) and the second is recorded at Little Saredon Manor (A18). The site of the Church of St Mary, Shareshill (A5) is documented from 1213 and its use continues into the subsequent periods. The final recorded asset of early medieval date is the find spot of a fragment of a probable cast copper alloy mount with enamel decorations (A48).
- 6.6.16 The transition to the medieval period saw a number of changes to the social and political order. These changes included the expansion of settlement, emergence of the gentry and the increased commercialisation of society (Ref 6.25). Prominent medieval industries in the region of the West Midlands include the iron industry, notably in north Staffordshire and south-east Herefordshire, as well as wool production and the cloth industry in the west and south of the region (Ref 6.25).
- 6.6.17 There are 16 sites with evidence of medieval date (1066 to 1500). The majority of these are moated sites or those associated with farming practices. The first of the moated sites is located at Hilton Park (A11), which has been built over by the 18th century house (B2). Other moats are located across the study area, including a 14th century example to the east, Black Lees (A3), and other examples in the vicinity of Shareshill (A1, A19 and two un-located in grid square SJ 94 06).
- 6.6.18 The remainder of the medieval sites are related to agricultural activity and include evidence for ridge and furrow (A13, A14, A15, A28, A37, and A38), as well as earthworks interpreted as the remains of a former tenement or croft (A21). The cropmarks of a medieval field system (A24) were excavated as part of the construction works of the M6 Toll. This site also contained evidence of post-

medieval field boundaries and trackways. The possible site of a church has also been identified from historic map analysis. The name 'Church Field' is recorded on the 1841 Tithe Map (A26). The place-name suggests a church may have been located in the vicinity, and a rectangular cropmark nearby may represent a former church building (see Figure 6.8 [TR010054/APP/6.2]).

- 6.6.19 A find spot of medieval pottery is also located in the study area (A42), although some sherds were of early post-medieval date. Some of the ridge and furrow sites may also contain elements of post-medieval activity, such as site A13.
- 6.6.20 Thirteen recorded sites of post-medieval date (1500 to 1900) are located in the study area, in addition to those medieval sites that may have extended into this later period. These sites predominantly relate to the agricultural use of the landscape, as well as evidence for increasing industrial activity in the 18th and 19th centuries. During the post-medieval period much of the land surrounding the Scheme remained in agricultural use. The tithe maps for the surrounding townships are dominated by arable and pasture fields interspersed with areas of meadow and woodland.
- 6.6.21 As well as the sites discussed in the medieval section (such as ridge and furrow, A13, and field systems, A24), agricultural evidence includes the site of Brook House Farm (A16), first shown on Yates' map of 1775, which is no longer extant. The remains of a windmill at Mill Farm are also recorded (A6). It is thought that a mill may have occupied this site from at least the 17th century. A second mill (A30) is also recorded at Little Saredon and dates to the later part of the post-medieval period. This mill is recorded as originally being wind powered and was later converted to steam. A well preserved pound (A29) is recorded at Little Saredon Dairy Farm, which may have been used to hold the cows before or after milking. Other extant agricultural buildings are discussed in the built heritage section below. A possible marl pit (A9) is also recorded, used to extract clay and lime which was used to improve agricultural land.
- 6.6.22 The predominant industries within Staffordshire consist of the Potteries in the north of the county, mining across the county, and iron and steel production around Walsall. Cannock Chase, located several kilometres north-east of the Scheme, is one of the main areas of coal mining in the county. Mining in this area was characterised by shallow workings and limited coal markets until the development of greater technology in the mid-19th century allowed for more extensive and intensive mining (Ref 6.26). Industrial sites recorded in the study area are primarily related to brick and tile production, required to fulfil the needs of the nearby growing urban areas, such as Wolverhampton to the south-west. A brick and tile works at Holly Bank Farm (A12), is recorded in the eastern part of the study area. A possible earlier tile kiln is suggested by the find spot of 16th century tile (SJ 95 08, exact location uncertain), which is similar to tiles found on the roofs of nearby churches.
- 6.6.23 Other industrial sites are representative of extractive industries. The location of a former quarry (A33) has been identified from field name evidence but no features

have been noted on the ground. Two smithies (A31 and A32), recorded close to Little Saredon, are also recorded on the HER.

- 6.6.24 The Streetway and Wordsley Green Turnpike Road (A59) was established in the mid-18th century. This largely follows the line of the A460 through the study area, joining the A4601 to the north of the M6 Toll. A possible boundary marker (A10), in the form of a low bank, may have also been followed by a former road or track.
- 6.6.25 The churchyard to the Church of St Mary and St Luke (A4) also dates to the post-medieval period. The churchyard contains a number of grave markers, tombs and headstones all dating to this period. Excavations within the churchyard have also revealed evidence for tombs, vaults and grave cuts.
- 6.6.26 The final two sites of post-medieval date are the find spots of post-medieval material (A42 and A43), including a hand-made brick and pottery. The landscape park around Hilton Hall (A40) is also recorded as dating from the post-medieval period on the HER. This is discussed in further detail in the historic buildings and historic landscapes sections below.
- 6.6.27 The modern period (1900 to present) is represented by 12 assets. The find spot (A42) and brickworks (A12) described in the post-medieval section above both contained evidence of modern date.
- 6.6.28 A colliery (A39), named as Hilton Main Colliery but originally known as Essington Wood Colliery and later as the Holly Bank Colliery is recorded. The colliery included coal shafts, a tramway and mine buildings. It is no longer extant and has since been built over.
- 6.6.29 The formal garden at Moseley Old Hall (A41) was established by the National Trust in the second half of the 20th century and is recorded on the HER. Further information on Moseley Old Hall can be found in the historic buildings section below.
- 6.6.30 Three black and white finger posts (A51, A52 and A53) are also recorded within the study area. These are believed to date to the early 20th century and provide directional information in relation to local footpaths and highways.
- 6.6.31 The other three sites of modern date are related to the defences of the outskirts of the urban area near Wolverhampton and Birmingham. The major site of World War II date is a Royal Ordnance Factory in Featherstone (A7). This was built between 1940 and 1942. The site was chosen due to its relatively flat topography and proximity to a railway line. The site included barracks, air raid shelters, pillboxes, workshops and a railway siding. Three other brick pillboxes are recorded. Two of these date from World War II (A8 and A44) and one from the Cold War (A45). The remains of a World War II anti-aircraft gun site are also recorded at Middle Hill, Saredon (A17). The windmill mound (A6) was used as a Home Guard observation post in World War II.
- 6.6.32 The remaining sites are of unknown date and all are recorded from aerial photographs. Some of these, such as cropmarks of enclosures (A23, A25 and A27) or of possible settlement activity (A34), could be of later prehistoric or Roman

date, while others may represent medieval or post-medieval field systems (such as A22, A23 and A35).

- 6.6.33 There is potential for previously unrecorded archaeological remains to be found along the route of the Scheme. While remains of any period cannot be discounted, remains associated with the later prehistoric periods and the medieval and post-medieval landscapes are most likely to be discovered.

Aerial Photographs

- 6.6.34 Aerial photographs were ordered from the Historic England Archive Service. The images listed in Table 6.3 have been reviewed to identify the presence of heritage features in the landscape. No additional assets were identified.

Table 6.3: Aerial photograph review

Photograph reference	Date	Features noted
RAF_106G_UK_1483_RS_4006	09/05/1946	The ponds between Hilton Hall and the Lower Pool are not present on this photograph.
RAF_106G_UK_1483_RS_4120	09/05/1946	The ponds between Hilton Hall and the Lower Pool are not present on this photograph.
RAF_540_813_VP1_5364	16/07/1952	-
RAF_540_813_VP1_5432	16/07/1952	-
RAF_540_813_VP2_5023	16/07/1952	-
RAF_540_813_VP2_5024	16/07/1952	-
RAF_540_813_VP2_5122	16/07/1952	-
RAF_540_813_VP2_5269	16/07/1952	The ponds between Hilton Hall and the Lower Pool are not present on this photograph.
RAF_540_813_VP2_5270	16/07/1952	-
RAF_540_813_VP2_5271	16/07/1952	-
RAF_540_813_VP2_5313	16/07/1952	-
RAF_540_813_VP2_5316	16/07/1952	-
RAF_540_914_V_5130	23/10/1952	-
RAF_540_914_V_5131	23/10/1952	-
RAF_540_777_V_5258	19/06/1952	-
RAF_543_1311_1F21_20	14/06/1961	-
OS_83123_V_031	03/07/1983	-
OS_83122_V_011	03/07/1983	-
OS_85095_V_005	02/06/1985	-
OS_85095_V_004	02/06/1985	-
OS_86150_V_010	01/07/1986	-
NMR15587/15	05/09/1996	-
NMR15590/13	05/09/1996	The ponds between Hilton Hall and the Lower Pool are present on this photograph.

Ground Investigation archaeological monitoring

- 6.6.35 Monitoring was undertaken by ADAS in July 2019. A total of 19 trial pits and 31 boreholes were monitored. There were no archaeologically significant deposits or artefacts observed from the trial pits. Twenty of the boreholes contained made ground, which indicated the ground has been extensively landscaped and altered during the construction of modern highways. The full GI monitoring report can be found in Appendix 6.2 [TR010054/APP/6.3].

Geophysical Survey

- 6.6.36 A gradiometer survey was undertaken by Phase Site Investigations Ltd in March-April 2019 (Ref 6.19). There were 19 areas proposed for survey, although three areas were not surveyed due to livestock being present in the fields. The full survey report can be found in Appendix 6.3 [TR010054/APP/6.3].
- 6.6.37 There were nine anomalies recorded by the survey (anomalies A-I). Anomalies A and B were recorded in Area 5, just north of Hilton Hall, and are thought to represent drainage. Areas 7 and 8 are both located to the south-east of Shareshill and anomalies were recorded in each. Area 7 recorded anomalies C, D and E. Anomaly C is thought to represent current agricultural practices, while anomalies D and E are both likely drainage features. Area 8 recorded anomalies F and G, which were both recorded as isolated positive responses and while it is thought they are of human origin, their function and date is unknown. Areas 11 and 16 are both located at the north-western end of the Scheme and both recorded anomalies. Anomaly H was recorded in Area 11 and consists of two curvilinear trends either representing sub-surface features or the intersection of different agricultural regimes. Anomaly I was recorded in Area 16 as an alignment of trends and it is also thought to represent a sub-surface feature of unknown function.
- 6.6.38 Other responses from the survey mainly consisted of strong magnetic disturbances of made ground and modern disturbances as well as relatively weaker linear responses of agricultural activity.
- 6.6.39 The survey concluded that the majority of the anomalies identified related to modern material or objects related to agricultural activity or geological variations. No clear patterns were identified indicating relationships between the anomalies.

Archaeological potential

- 6.6.40 Given the number of archaeological assets recorded within the 1 km study area, potential exists for previously unrecorded buried archaeology to be present.
- 6.6.41 The Scheme is divided into two areas of development:
- improvement to and within the current highways boundary; and
 - a stretch of new road between Junction 1 for the M54 and Junction 11 of the M6.
- 6.6.42 Due to the high levels of previous disturbance within and adjacent to the extant motorway system dating to its construction the archaeological potential within these areas is considered to be negligible.
- 6.6.43 There are four assets of prehistoric date recorded in the 1 km study area. The majority of these are find spots with only one possible burnt mound, believed to be Bronze Age in date, suggesting possible occupation evidence activity. It is also possible that some of the archaeological assets represented by cropmarks recorded in the area may have their origins in the later prehistoric period. However, further archaeological investigation would be required to establish datable evidence to support this theory.

- 6.6.44 While only finds of Roman date have been recorded, settlement activity has been located outside to the west close to the modern village of Penkridge. This, coupled with the Scheme being located close to the Roman road between Featherstone and Pennocrium, indicates that further activity could be found in this area.
- 6.6.45 Based on this evidence, the potential for the discovery of previously unrecorded prehistoric and Roman sites is considered to be medium.
- 6.6.46 There are nine recorded sites of early medieval date within the 1 km study area. These include the deserted settlement of Hilton/ Haltone and the historic core of villages recorded in the Domesday Book. Two moated sites, believed to have their origins in the early medieval period, are also recorded. Due to this evidence, it is unlikely that further settlement activity of early medieval date would be found, although associated activity, such as agriculture, cannot be discounted.
- 6.6.47 There are 13 assets of medieval date recorded, including known or potential moated sites as well as settlements, evidence of agriculture, and pits related to industrial activity. The post-medieval period is well documented with recorded archaeological sites. Map coverage documents the changes to the area during this period, with many of the settlements and transport routes still present.
- 6.6.48 Based on this evidence, the potential of discovering early medieval, medieval and post-medieval remains is considered to be low.
- 6.6.49 The potential for environmental archaeological deposits to be located within the study area is considered to be limited. The geology of the Scheme, where not previously disturbed, is largely glacial till formed of sand and silty clay with pebbles. A small band of alluvial deposits is recorded around a small watercourse (Watercourse 5) which runs north-east to south-west across the A460 and M6. This band is narrow and confined to the margins of the river. While there is potential for micro- and macrofossils and other environmental deposits to survive, these are not believed to be significant in nature and could be sufficiently recorded through appropriate mitigation. No significant deposits were observed during the archaeological monitoring of the GI.

Historic Buildings

- 6.6.50 There are 26 listed buildings within the 1 km study area. These mainly date from the post-medieval period and are located within the settlements of Shareshill, Little Saredon and Great Saredon, and to the west of Essington. Additional listed buildings are associated with Hilton Hall and are located within Hilton Hall Park, to the east of the Scheme, or they are associated with Moseley Hall and Moseley Old Hall, to the south-west of the Scheme.

Hilton Park and associated buildings

- 6.6.51 Hilton Park (A40) is a landscape park established in the mid-to late 18th century around Hilton Hall (B2). There are five listed buildings within the park, including the principal house, Hilton Hall.

Hilton Hall (Grade I, B2)

- 6.6.52 Hilton Hall (B2) is the principal building within the park. It was rebuilt on or near the site of its late medieval predecessor in the early 18th century. The earlier structure was associated with the Swynnerton family, passing to the Vernon family in 1547. It was this family who still held the property when Henry Vernon (1663-1732) built the present residence. Hilton Hall is attributed to the architect Richard Trubshaw, based on the similarities between Hilton Park and Trubshaw's now demolished Emral Hall, Flintshire, and also the fact that Trubshaw worked for Henry Vernon at Hilton in 1743. Vernon's great-grandson, Major General Henry Charles Edward Vernon (1779-1861), altered Hilton Hall with an additional third storey in 1829. The Baroque hall is constructed of red brick with painted ashlar and plaster dressings, under a hipped slate roof. Originally, the main elevation was to the south, where a drive led to the park, flanked by a pair of 18th century gatepiers (Grade II, B3). The building was re-orientated when the main south entrance was blocked and a new entrance was made to the east.
- 6.6.53 The Vernons sold the residence in c.1951 and moved to Keevil Manor in Wiltshire. Subsequently the hall was sold for a series of functions, including a convent, a nursing home and the head office of Tarmac PLC (Ref 6.20). Hilton Hall is now used as an office and business centre.

The Conservatory (Grade I, B4)

- 6.6.54 A small structure to the north-west of the hall is visible, on the Tithe Map (see Figure 6.8 [TR010054/APP/6.2]) on the approximate location of the existing Conservatory (B4), although it appears to be of rectangular shape rather than circular. The existing Conservatory is first shown on the First Edition OS Map (1880s) as a circular building (see Figure 6.9A. [TR010054/APP/6.2]).
- 6.6.55 Conservatories were designed at this time as a suitable place to cultivate and protect exotic fruits and delicate plants. Early examples were constructed away from the main house, while increasingly they started being attached to the main house in order to be used as a social space and improve accessibility. However, under the influence of the landscape movement, which favoured naturalistic grounds around the house rather than formally laid out gardens, they became freestanding and in the first decades of the 19th century, they were characterised by elaborate architectural design and details.
- 6.6.56 The Conservatory (B4) is of intricate design and a feat of engineering, representing a transitional development in glasshouse technology. It is constructed of wood and cast-iron, a combination of traditional and modern materials and is of circular plan with a glazed hemispherical dome. A few stone steps lead to a cellar below the conservatory where a furnace is located, used to heat the Conservatory to create an appropriate warm environment for the plants. The building was in a very poor condition but restored in 2015. The structure was designed so as to be clearly visible from the Hall, across the moat. It forms part of the designed landscape, surrounding the Hall and, due to its location outside the walled garden, along with its relatively distant location from it, it is evident that it was designed for ornament rather than mere utility use (Ref 6.21). As a freestanding structure, not attached to

the hall, it is a landscape feature that was constructed for growing plants. Apart from its horticultural purpose, the design of the Conservatory was elaborate and followed the classical design of the hall.

Gatepiers (Grade II, B3)

- 6.6.57 A pair of early 18th century gatepiers (B3) are located to the south of Hilton Hall. These are associated with the original entrance to the park, before it moved to the east. They are constructed of ashlar and comprise a pair of square panelled piers with over-sailing cornices and fluted and gadrooned urn finials.

Coach house and stable block (Grade II, B22)

- 6.6.58 During the 1830s, the Major General Vernon was responsible for a number of changes in the hall and the park. These included the addition of a third storey in the hall. In addition, the coach house and stable block (B22) were also constructed during that period, c. 1830. They comprise four ranges forming a quadrangular courtyard. The materials and style of these buildings match the Hall. A square clock turret with an octagonal cupola surmounts an opening on the western range.

Portobello Tower (Grade II, B23)

- 6.6.59 Portobello Tower is a commemorative tower that dates between 1739 and 1765. It was constructed to celebrate the capture of Porto Bello in the West Indies from the Spanish in 1739. Although Henry Vernon was in the Navy he was only 16 at the time and had not yet passed his examination as a young officer (Ref 6.20; Ref 6.22). The capture of Porto Bello was actually led by Admiral Vernon who was only a distant cousin of the Vernon's at Hilton (Ref 6.27). The tower was possibly designed by Richard Trubshaw, who also designed Hilton Hall. The tower is of hexagonal plan and is constructed of brick. The tower is currently derelict, in a poor state of repair and without a roof.

Moseley Old Hall and associated buildings

- 6.6.60 To the south-west of the Scheme, there is a group of buildings associated with Moseley Old Hall and attached garden walls, gate piers and gate (B14), including Moseley Old Hall Cottage (B1).
- 6.6.61 Moseley Old Hall is Grade II* listed and dates to the late 16th century. It has a timber-framed core that was refaced in brown brick in the 19th century. The Hall has a plain tile roof and retains two groups of tall Elizabethan chimney stacks.
- 6.6.62 Moseley Old Hall Cottage (B1) is a 16th century house that was much rebuilt in the 19th century and subsequently remodelled in the late 20th century. Originally of timber framed construction, the cottage was refaced in brick, similarly to the Moseley Old Hall.

Moseley Hall and associated buildings

- 6.6.63 In the early 18th century, the Whitgreave family who had owned Moseley Old Hall since the early 17th century, built and subsequently moved to Moseley Hall (B18) to the south of Moseley Old Hall. The 18th century hall is Grade II* listed, of two storeys with attics, constructed of brick with ashlar dressings, built in

Regency/early Georgian style. There are five Grade II listed buildings and structures associated with the 18th century hall. These comprise the Coach House (B16), Moseley Hall Cottage (B15), gates, gatepiers and railings of the Hall (B17) and the Cottage (B19). Mosely Hall (B18) is now in private ownership and not part of the Moseley Old Hall site that is managed by the National Trust.

Listed building in Featherstone

- 6.6.64 There is a single listed building in the village of Featherstone to the west of the Scheme. This comprises a number of attached agricultural buildings to the south-east of Featherstone Farmhouse (B21). They are listed at Grade II as a single building. They date to c. 1700, and are of timber frame construction with red brick infill. The asset is located on the north-western edge of the village and remains associated with farmland at the north of the settlement.

Listed buildings in Shareshill

- 6.6.65 There are four listed buildings in the village of Shareshill, north-west of the Scheme. These include the Grade II listed Manor Farmhouse and attached Malthouse (B12), constructed in the early 17th century and 18th century respectively. They are of timber framed construction with red brick infill. The Grade II listed Barn to the south-west of Home Farmhouse (B26) dates to the 15th century, with extensive later alterations, of timber framed construction and red brick. Woodberry House (B11), also Grade II listed, is an 18th century house, of red brick and render, of symmetrical proportions. The Grade II* listed Church of St Mary and St Luke (B25) dates to c. 1742 and incorporates a 15th or 16th century tower to the west. It consists of a conglomeration of materials with Classical details, mainly of brick, while the tower is of ashlar and the south Tuscan porch is painted white. To the rear (north) there is a glass link to a modern brick addition.

Little Saredon

- 6.6.66 There are two listed buildings in the hamlet of Little Saredon. These are Little Saredon Manor (B10) and Little Saredon Dairy (B24), both Grade II listed. Little Saredon Manor stands within a moated site, and has an early 16th century timber-framed core that was almost entirely rebuilt in brick in the 18th and 19th centuries. The Dairy Farmhouse dates to the early 18th century and is constructed of red brick.

Great Saredon

- 6.6.67 There are five Grade II listed buildings in the hamlet of Great Saredon. They include Great Saredon Farmhouse (B6), dating to the 18th and 19th centuries, of brick construction; High View Cottage and Farm Cottage (B7), dating to the late 16th century, of timber-frame and brick construction; Hilltop Farmhouse (B8), an early 19th century farmhouse of red brick; Hilltop Cottages (B9), dating to the late 17th century, of timber framed construction and later refaced in brown brick; and Saredon Hall Farmhouse and attached Cowhouse (B5). Saredon Hall Farmhouse, constructed of brick with tiled roof and brick stacks, dates from the early 18th century with a mid to late 19th century additions, while the cowhouse dates mainly from the mid to late 19th century.

Essington

- 6.6.68 Two Grade II listed buildings are located in the village of Essington, just within the 1 km study area. These comprise Essington Hall Farmhouse (B20) and Pool Farmhouse (B13), dating from the early 19th and late 17th century respectively, both constructed of red brick. Essington Hall Farmhouse is located within a loose courtyard farmstead while Pool Farmhouse is detached with a regular courtyard to its south-west.

Non-designated buildings

- 6.6.69 A number of non-designated built heritage assets have been identified within the study area. These include seven locally listed buildings as identified on the South Staffordshire Local List. According to their interest, the buildings in the South Staffordshire Local List are divided into three grades (Grade LLA, Grade LLB and Grade LLC). There are two Grade LLA, two Grade LLB and two Grade LLC locally listed buildings. The remaining historic buildings and structures are included on the Staffordshire HER.
- 6.6.70 Both Elms Public House (B28), dating from the mid-19th century, and Old Barn (B29), built around 1800, are listed at Grade LLA category and lie in Shareshill village. A windmill tower (B31) incorporated into a house in Little Saredon is also listed at Grade LLA category. There are two Grade LLB locally listed buildings, Blacklees Farm (B30), built in the early 19th century, and the remains of Essington Mill on the approach road to the village (B33). A small, modern, ex-Wolverhampton Corporation timber bus shelter (B27) at the south-eastern end of Shareshill and the remains of an anti-aircraft gun site (B32) to the north-east of the study area, are locally listed at Grade LLC category.
- 6.6.71 The rest of the non-designated built heritage assets include farm buildings that illustrate the agricultural history of the area (B36, B37 and B38); a Vicarage (B35) and its outbuilding (B37) and garden wall (B39); and Havergal Primary School (B34) in Shareshill.

Historic landscapes

- 6.6.72 The desk-based review and the site visit have established that the land within the Scheme boundary has remained rural in character and is predominantly used for agricultural activity. There has been a degree of urbanisation attributed to the development of transportation infrastructure associated with the M54 and M6, as well as the growth of Featherstone.
- 6.6.73 Historic Environment Character Zones (HECZ) (see Figure 6.3 [TR010054/APP6.2]) and Historic Landscape Character (HLC) data (see Figure 6.4 [TR010054/APP/6.2]) has been acquired from Staffordshire County Council. There are no designated historic landscapes within the study area, however non-designated historic landscapes have been identified. Of the non-designated landscapes, two form historic parks, and three are HECZ (see Figure 6.3 [TR010054/APP/6.2]). There are also seven historic landscape character (HLC) areas within the study area (see Figure 6.4 [TR010054/APP/6.2]).

- 6.6.74 Much of the northern portion of the Scheme boundary falls within the Fieldscapes, Large Irregular Fields HLC type (Ref 6.28) with small sections of Woodland, Settlement and Communications around the current motorway junctions at both the north and south of the Scheme. Other HLCs correspond or overlap with the HECZs and are discussed below. The northern section of the study area also lies within Area 4: West Staffordshire Plain as identified as part of the Staffordshire Farmsteads Character project (Ref 6.29). The study recognised that the area has been subject to reorganisation of the farmland during the 18th and 19th century although some remanence of the earlier small-scale fields remain (Ref 6.30).
- 6.6.75 The southern section of the Scheme is dominated by ornamental, parkland and recreational land within the grounds of Hilton Hall. At the southern edge of the Scheme boundary are small sections of an industrial and extractive landscape, as well as water and valley floor fields. The character zones of Hilton Park and Featherstone within the Scheme boundary form part of the Parkland and Communications landscapes, respectively.
- 6.6.76 A small section of the Essington HECZ over lays the south eastern extent of the study area. Due to the distance from the Scheme no further details of the Essington HECZ have been included.

Hilton Park

- 6.6.77 The study area is dominated by Hilton Park (FSHECZ 1) (A40), a non-designated historic park that has been defined as Historic Parkland within the South Staffordshire Local Plan and is recorded as an Ornamental, Parkland and Recreational HLC area. Additional information on Hilton Park is provided in Appendix 6.5 [TR010054/APP/6.3]. The park is associated with Hilton Hall (B2), which was built between 1720 and 1730 for the Vernon family, on the site of a medieval estate, of which only the re-landscaped moat survives. The design of the park is associated with the late 18th century landscape gardener, Humphry Repton. Repton (1752 - 1818) was an English landscape designer and the self-proclaimed successor of Capability Brown as an improver of grounds to the landed gentry of England. Repton was influenced by the Picturesque movement, which was based on the appreciation of wild and dramatic landscapes (Ref 6.23). While the landscape design of Hilton Park is attributed to Repton, there are few details of the specific design principles for Hilton Park available. Assumptions can be made regarding the design of Hilton Park using other examples of his work, but information of the details of rational behind his influence on the park is limited.
- 6.6.78 Some of these design principles can be recognised in the historic landscape surrounding Hilton Hall which is characterised by pockets and bands of trees and lakes. One of the lakes is formed of the remains of the medieval moated site that is believed to have been utilised for the extant house. A distinctive feature of the naturalistic design principal was a shrubbery, an informal development of the archaic wilderness (Ref 6.23). The area marked as 'The Shrubby' on the 1902 Ordnance Survey (OS) map (see Figure 6.10A and 6.10B [TR010054/APP/6.2]), and which contains the Lower Pool, is first depicted on the 1842 tithe map (see

Figure 6.8 [TR010054/APP/6.2]). Later additions to the park in the 19th century include the Conservatory and the stable house.

- 6.6.79 The park can be separated into four distinctive areas: The hall and area around the hall that is surrounded by the remains of the moat, including the former kitchen gardens; the open parkland; the woodland; and agricultural land.
- 6.6.80 The woodland area is concentrated around the northern, eastern and western edges of the park and contains a number of footpaths, recorded on historic mapping.
- 6.6.81 The tithe map (see Figure 6.8 [TR010054/APP/6.2]) shows that the band of trees once extended from Hilton Lane in the north to Hilton Farm and beyond in the south. The Lower Pool, the remains of the moat and a smaller pond located to the north of the moat are also depicted on the tithe map and the 1902 OS map (see Figure 6.10A and 6.10B [TR010054/APP/6.2]). The layout of the landscape park was well defined by the early 19th century with several of the extant shelter belts and other blocks of woodland visible on the tithe map and First Edition OS (see Figure 6.9A and 6.9B [TR010054/APP/6.2]). This continued to mature throughout the 20th century. A comparison of aerial photographs from 2000 and the First Edition OS map shows that a considerable number of parkland trees survive. Some of these features predate the Tithe Map, as they are visible on the earlier Estate Map (see Figure 6.7 [TR010054/APP/6.2]). These include the walled garden to the north of the Hall. However, the walled garden has altered considerably, with only the extent of the garden being visible today due to the surviving walls. It is not until an aerial image of the area from 2003 that the two lakes located between Lower Pool and the hall are recorded suggesting that these did not form part of the original design. The western line of the park is demarked by a surviving section of stone wall, known locally as Mile Wall. The exact date of construction is not clear, but it first seems to appear on the second edition OS map (see Figure 6.10A and 6.10B [TR010054/APP/6.2]). This would tie in with the date of improvements made by Augustus Leveson Vernon in the late 19th and early 20th centuries, which included the addition of the new entrance to the Hall.
- 6.6.82 Approximately one third of the former area of the park (to the south-west) is now covered by gravel pits and an electricity substation, and the M6 runs down the eastern side of the park, while the M54 crosses the southern part of the park. Despite extensive open cast mining in the area, and the intrusion of two motorways across the park, available information shows the park to be of good quality with recognisable contributions by Repton.
- 6.6.83 The shelter belts and surviving trees within the park are important features of the park that reflect the surviving elements of the 19th century landscape and contribute to the understanding and appreciation of Hilton Park. The impact of the medieval estate upon the wider landscape is currently unknown.
- 6.6.84 Further details on the development of Hilton Park are contained within Appendix 6.5 [TR010054/APP/6.3].

Formal garden, Moseley Old Hall

- 6.6.85 To the south-west of the study area there is a small formal garden that surrounds Moseley Old Hall. The existing garden was reconstructed in order to recreate the gardens c. 1640. The gardens are formed of a walled garden, a knot garden, an arbour, topiary and herb garden and are planted with fruit trees. The house and gardens are under the management of the National Trust.

Featherstone HECZ

- 6.6.86 This area is subdivided into three areas, Featherstone - Hilton Park (FSHECZ 1), Featherstone - North of Featherstone (FSHECZ 2) and Featherstone - Featherstone (FSHECZ 3).
- 6.6.87 Featherstone - Hilton Park (FSHECZ 1) includes the surviving components of the historic landscape park associated with Hilton Park, including the shelter belts, woodland, ornamental lake and parkland trees (FSHECZ 1). The Hilton Park HECZ overlaps with elements of Hilton Park, detailed above.
- 6.6.88 Featherstone - North of Featherstone (FSHECZ 2) is dominated by preserved historic field pattern surviving as irregular fields to the north of Featherstone. The fields are enclosed by mature hedgerows. The origin of the field pattern is believed to be associated with medieval assarting (conversion to agricultural use) (FSHECZ 2).
- 6.6.89 Featherstone – Featherstone (FSHECZ 3) is characterised by the modern village which was constructed in the mid-20th century onwards. Historic farmsteads surviving within FSHECZ 3 are testament to the historic dispersed settlement pattern which probably had at least medieval origins across Featherstone parish. The remains of a probable World War II military site, associated with the Shell Filling Factory to the west of the study area, has the potential to further our understanding of this site and its role in the 20th century social and economic history of Featherstone (FSHECZ 3). This area is recorded as the Settlement HLC area.

Great Wyrley and Cheslyn Hay HECZ

- 6.6.90 The Great Wyrley HECZ is subdivided into four areas, one of which - Great Wyrley - West of Cheslyn Hay (GWHECZ 2) - is located to the east of M6 Toll Junction 11 and lies within the study area. Industrial archaeology is a particular feature of the HECZ with above and below ground archaeological remains being present in the sub area. These heritage assets include the sites of former collieries, brickworks, tramways and mineral railways as well as the remains of two branch canals. An edge tool works, which had its origins in the early 19th century, has been the subject of an archaeological evaluation in advance of development at Churchbridge (GWHECZ 2).
- 6.6.91 Historic farmsteads still form a feature of the historic landscape, some of which are associated with historic field patterns. Lodge Farm may lie on the site of a warrener's lodge which probably existed by the late 16th century (GWHECZ 2). Historic field patterns also survive within the landscape of the HECZ. The late

18th/19th century planned enclosure is still legible within GWHECZ 2 despite the construction of the M6 Toll.

Future baseline

6.6.92 As detailed in Chapter 4: Environmental Impact Assessment Methodology, in order to identify the effects of the Scheme on environmental features, it is important to understand the baseline at the year of construction commencement and at the year the Scheme becomes operational. The baseline conditions for these years may be different to the current conditions and such changes could alter the sensitivity of existing environmental receptors, as well as introduce new sensitive receptors.

Construction year baseline (2021)

6.6.93 The nature of the historic environment is such that no material changes to its form, character and appearance are predicted to occur by the construction year.

Opening year baseline (2024)

6.6.94 The nature of the historic environment is such that no material changes to its form, character and appearance are predicted to occur by the opening year.

6.7 Potential impacts

6.7.1 The process of scoping identified that the introduction and/or modification of road infrastructure associated with the Scheme would potentially result in different types and durations of impact on cultural heritage, during both the construction and operational phases.

Construction

6.7.2 Temporary construction impacts lasting for all or part of the construction phase of the Scheme potentially include the following:

- The presence and movement of construction plant and equipment, which may impact on the significance of heritage assets caused by changes to their setting.
- The siting of construction compounds and activities within working areas, including associated construction noise and lighting, which may impact on the significance of heritage assets caused by changes to their setting.
- The use of traffic management and increased volumes of traffic on the local road network, which may impact on the significance of heritage assets caused by changes to their setting.

6.7.3 Permanent construction impacts lasting beyond the construction phase potentially include the following:

- Physical impacts on known archaeological assets arising from construction activities such as earthworks excavation, the formation of construction compounds and the installation of drainage infrastructure.

- Physical impacts on historic landscapes associated with the loss of key landscape components as a consequence of construction, such as those resulting from site clearance activities.
- The disturbance, compaction or removal of previously unrecorded sub-surface archaeological deposits through construction activities.
- Impacts on archaeological remains, historic buildings and the historic landscape associated with the introduction of the physical form and appearance of the Scheme in their setting.

Operation

6.7.4 Operational impacts of the Scheme potentially include the following:

- Changes to traffic movements (and associated vehicle lighting), which could affect the significance of heritage assets caused by changes to their setting.
- Changes in road noise from vehicle movements, which may affect the setting of heritage assets.
- The operation of road lighting at junctions and on junction approaches, which may affect the setting of heritage assets.

6.8 Design, mitigation and enhancement measures

Embedded Mitigation

6.8.1 The Scheme has been designed, as far as possible, to avoid and minimise impacts and effects on heritage assets through the process of design-development (Refer to Chapter 3: Assessment of Alternatives) considering good design principles. Embedded mitigation defined within the DMRB as 'Design measures which are integrated into a project for the purpose of minimising environmental effects.' is reported as part of the scheme description in Chapter 2: The Scheme. The following section reports the essential mitigation required in addition to embedded mitigation to reduce and offset likely significant adverse environmental effects.

Essential mitigation

Construction

- 6.8.2 The Outline Environmental Management Plan (OEMP) [TR010054/APP/6.11] details the measures that would be undertaken prior to, and during construction of, the Scheme to mitigate effects on cultural heritage.
- 6.8.3 In relation to mitigation of impacts on buried archaeological remains, a proposed programme of archaeological mitigation will be developed and presented in the archaeological mitigation strategy (AMS). The detail of this work will then form the archaeological management plan (AMP) which will be developed once the detailed design has progressed.
- 6.8.4 It was agreed with the County Archaeologist that evaluation trenching should be undertaken after the submission of the DCO once the detailed design is in progress. This should be undertaken before the details of the design are finalised and prior to the commencement of any phase of construction, to allow the

development and implementation of mitigation measures, particularly where any additional archaeological features are identified. This should include, where possible, preservation in situ.

- 6.8.5 Following the programme of archaeological evaluation trenching an appropriate methodology shall be identified for mitigation, as required. Mitigation may take the form of, but not be limited to: the recording of landscape features; strip, map and record; open area excavation; watching briefs (involving the monitoring of construction works); and palaeoenvironmental sampling. This shall be recorded in the AMP, with any requirement for archaeological fieldwork and recording being proportionate to the level of impact and the value of archaeological assets affected. The scope and methodology for undertaking each stage of evaluation or mitigation will be detailed with a Written Scheme of Investigation (WSI) which will be prepared in consultation with the County Archaeologist.
- 6.8.6 Delivery of the AMS within the archaeological management plan would be within the Scheme boundary and would be secured through the requirements incorporated into the DCO.
- 6.8.7 Other measures that would be implemented during construction would relate to:
- raising the awareness of construction workers and operatives to any control and reporting procedures to be followed, should archaeological deposits be encountered during the works, for example through toolbox talks and regular briefings;
 - the protection of built heritage assets and archaeological sites during construction, for example through the demarcation of buffer zones around such interests with fencing and signage; and
 - the control of light spillage, noise and dust within construction compounds and working areas, for example by adhering to working hours and through good site layout and working practices, to minimise impacts on the setting of built heritage and conservation areas.

Operation

- 6.8.8 No essential mitigation is required for the operation of the Scheme. The embedded mitigation described in Chapter 2: The Scheme would serve to reduce types of operational impact on cultural heritage, particularly those associated with the introduction of the Scheme (and associated traffic) into the setting of assets.

6.9 Assessment of likely significant effects

Construction

Archaeology

- 6.9.1 There would be no impacts on designated archaeological sites as a result of Scheme construction; however, the following non-designated archaeological assets would potentially be impacted.

- 6.9.2 The line of the Streetway and Wordsley Green Turnpike Road (A59) is a post-medieval highway first recorded in 1761. The road is now known as the A460 Cannock Road. Its archaeological and historic significance lies in its ability to provide information on the connections between places in this landscape. It is considered to be of no more than negligible value as any buried remains relating to this asset will likely have been lost during later modernisation. Given that the Scheme would only impact small sections of this road, the Scheme would not affect the ability to understand the asset within the landscape, thus the magnitude of impact would be minor adverse. Based on the significance of effect matrix set out in Table 4.3 of the ES Chapter 4 the resulting significance of effect could be neutral or slight. As the Scheme would result in some limited physical impact, the significance of effect on the asset would be slight adverse at most.
- 6.9.3 A number of cropmarks have been recorded from aerial photographs and interpreted as field boundaries (A22). The boundaries have archaeological and historical significance as they can provide information regarding the medieval agricultural process and land management of the area. The asset's value is considered to be no more than negligible. The asset is located in agricultural fields within the Scheme boundary. Therefore, any works would have a major adverse magnitude of impact upon the site, resulting in a slight adverse significance of effect.
- 6.9.4 Cropmark evidence identified from an aerial photograph shows a group of faint, well-defined ditched enclosures of unknown date (A23). The asset has archaeological and historical significance as it can provide information regarding potential early settlement, historic agricultural processes and land management of the area. Its value is considered to be no more than negligible. The existing M6 runs through the area of cropmarks but any surviving remains within the field to the east, which has not yet been developed, would be destroyed during construction of the Scheme. The magnitude of impact is thus considered to be major adverse, resulting in a significance of effect of slight adverse.
- 6.9.5 A cropmark complex containing pits and other negative features of unknown date (A36) hold archaeological and historical value as it can provide information regarding the historic land use and potential early settlement and industrial processes as it is thought to represent an open settlement of unknown date. Its value is considered to be no more than negligible. The asset is located within an agricultural field just west of the M6, and may be destroyed in the construction of the Scheme, as the southern half of the site falls within the Scheme boundary. The magnitude of impact is therefore considered to be moderate adverse. Based on the significance of effect matrix set out in Table 4.3 of the ES the resulting significance of effect could be neutral or slight. Due to the Scheme resulting in some limited physical effect the significance of effect on the asset would be slight adverse at most.

Previously unrecorded archaeology

- 6.9.6 The assessment has identified that there is a potential for archaeological deposits to be present within the Scheme boundary, particularly dating from the prehistoric and Roman periods. At this stage, the location and nature of any such archaeological deposits is unknown and their archaeological significance and value cannot be determined accurately. However, should archaeological deposits be identified, it is likely they would be of low or medium value as they would contribute to the understanding of the settlement and landscape development of the area, and would contribute to regional research objectives (Ref 6.25). Remains of high or very high value are not anticipated.
- 6.9.7 Depending on the location and nature of construction activity, it is considered that any archaeological deposits within the Scheme boundary could potentially be physically affected by construction, which accordingly could result in a magnitude of impact of major adverse. The significance of effect cannot be determined until remains are located. However, should remains of medium value be located, the worst-case significance of effect would be moderate adverse.

Historic buildings

Hilton Hall

- 6.9.8 Hilton Hall has historic interest as an early 18th century country house for a prominent family. It illustrates aspects of social and economic life in the 18th and 19th centuries and has associative value with the Vernon family and the architect Richard Trubshaw. Architectural and artistic interest derives from the appreciation of the Baroque style of the Hall, its materials, design and architectural features. The additional storey is in matching style and materials with the early 18th century building, while the various later extensions have respected the main building and contributes to its architectural interest. The setting of the Hall is defined by its location within a landscape park, Hilton Park, which evolved from open parkland and a deer park. The park includes water features, woodland, belts of trees, individual trees and grassland as well as number of subsidiary buildings that were built to complement Hilton Hall. These are also located within the parkland and include the coach house and stable block (Grade II, B22); the Conservatory (Grade I, B4); the gatepiers (Grade II, B3); and the Portobello Tower (Grade II, B23). These buildings and the surrounding parkland contribute to the setting of Hilton Hall and illustrate the historic development of the estate. Hilton Park has undergone some changes including the encroachment of the park by two motorways (M54 and M6), to the east and south; however, it is still important due to its associations with Repton and it continues to contribute to the significance of Hilton Hall and associated buildings and structures. Hilton Park forms the setting of Hilton Hall. It includes parkland and landscape areas that surround the Hall contributing to a rural feel and providing separation from surrounding settlements. Hilton Hall is Grade I listed and is therefore of high value.

- 6.9.9 The original Hall entrance was to the south of the building while the current Hall entrance is to the east of the building, on the opposite side of the Hall to the Scheme. The Scheme would not be visible from these elevations. It is also unlikely that there would be any views from the Hall to the Scheme at ground floor level due to established vegetation both around the Hall and to the east of the Scheme, refer to Figure 6.5 and 6.6 [TR010054/APP/6.2].
- 6.9.10 Hilton Park forms the setting of Hilton Hall. It includes parkland and landscape areas that surround the Hall, contributing to a rural feel and providing separation from the surrounding settlements.
- 6.9.11 The Scheme would introduce an additional modern infrastructure element in the setting of Hilton Hall. The Scheme would be mostly screened from the Hall with only a few glimpses during the winter months. This is based on the viewpoints presented in Figures 6.5 and 6.6 [TR010054/APP/6.2]. The retained, extant woodland around the Lower Pool, as well as proposed trees and hedges, would continue to provide screening to the Scheme in views from the Hall. Although there would be no lighting columns directly west of the Hall, some of the lighting columns that would be installed as part of the works to the M54 Junction 1 would potentially be visible from the second floor of Hilton Hall. The Scheme, including the lighting columns and signage would not be visible in any views from the ground and first floors of the Hall.
- 6.9.12 The Scheme would have a minor adverse magnitude of impact on the Hall, an asset of high value, due to the noticeable changes to its setting. Based on the significance of effect matrix set out in Table 4.3 of the ES Chapter 4 the resulting significance of effect could be slight or moderate. While the setting of Hilton Hall would noticeably change the significance of the asset, resulting from its architectural and historic interest would still be appreciated. Therefore, the significance of effect would be slight adverse. In NPPF terms, the Scheme would have an impact on the significance of Hilton Hall that would result in less than substantial harm.
- 6.9.13 Some temporary adverse effects are anticipated during the construction of the Scheme, mainly due to the presence and movement of construction plant and equipment at the western part of Hilton Park. In addition, an area for soil storage (Figure 2.9 [TR010054/APP/6.2]) is proposed within Hilton Park (to the south of the parkland, east of the new M54 Junction 1) that could temporarily detract from its setting. The construction noise that would be experienced from this asset during construction is anticipated to reach levels which are slightly higher than the existing ambient noise levels, Noise levels are anticipated to be at this level during two months of the construction period. The magnitude of impact on this asset of high value is considered to be minor adverse. Therefore, the significance of effect is considered to be slight adverse. There would be some temporary impact on the ability to understand and appreciate the asset during the temporary construction activities of the Scheme however that would result in this is less than substantial harm to the significance of this asset. These temporary impacts would cease to exist once the Scheme is completed.

The Conservatory

- 6.9.14 The Conservatory is Grade I listed and of high value, it has historic significance as an early 19th century conservatory with a domed roof. One of the most significant developments in the design of conservatories was the invention of the glazed roof (Ref 6.21). The Conservatory at Hilton illustrates the early use of the glass roof in conservatories; therefore, it is of high historic interest. Architectural interest is derived from the appreciation of its Regency style and its unusual ornamental design.
- 6.9.15 The Conservatory was built as an ornamental feature within Hilton Park which defines its setting. It also contributes to the setting of Hilton Hall. The Scheme would not affect the relationship of the Conservatory with Hilton Hall. Due to existing trees and planting around the Conservatory, the asset would remain screened from the Scheme. However, the Scheme would introduce a modern infrastructure element within its parkland setting, approximately 400 m from the Conservatory, resulting in a change to its setting. The Conservatory would continue to be understood and appreciated as a key ornamental feature within the park and its relationship with Hilton Hall and the rest of the buildings on the park would be retained.
- 6.9.16 The construction noise that would be experienced from this asset would be slightly higher than the existing ambient noise levels, approximately 2 dB. This is the maximum monthly construction noise anticipated during the construction phase. Noise levels are anticipated to be at this level for a total of two months of the construction program. Movement of construction equipment and other construction works, including an area for soil storage (refer to Figure 2.9 [TR010054/APP/6.2]) that are proposed within Hilton Park could temporarily detract from the setting of this asset to some extent.
- 6.9.17 The construction of the Scheme would have a negligible adverse magnitude of impact on this asset of high value. This would result in a significance of effect of slight adverse. In NPPF terms, the setting would change in a way that would hardly affect the ability to appreciate the asset and would result in less than substantial harm to the significance of this asset.

Gatepiers

- 6.9.18 The gatepiers have historic interest as they illustrate the early phase of development of the Hall and the park. Architectural and artistic interest is derived from their design and materials. The setting of the gatepiers is defined by their location within Hilton Park, marking the historic entrance to the park and a road leading to the Hall. They have group value with Hilton Hall and the rest of the buildings in the park.
- 6.9.19 The gatepiers are Grade II listed and are therefore of medium value in line with the methodology in the DMRB (Ref 6.2). The significance of the gatepiers lies in their relationship with Hilton Hall. This relationship would not be affected as a result of the construction of the Scheme, therefore there would be no change on the significance of this asset. This would result in a neutral significance of effect.

Portobello Tower

- 6.9.20 The tower has historic interest as a commemorative tower of an important historic event. Historic interest is also derived from the association of the tower with the Vernon family and the architect, Richard Trubshaw. Architectural interest derives from the design of the tower and its positioning within the park to act as a folly and contribute to views from the both the Hall and within the park. The setting of the tower is defined by its location within the park and its relationship with Hilton Hall. It has group value with Hilton Hall and associated buildings and structures within Hilton Park. The tower is visible in views from the Hall and the park as well as in views of the park from surrounding areas.
- 6.9.21 Portobello Tower is Grade II listed and is therefore of medium value in line with the methodology in the DMRB (Ref 6.2). The Scheme would introduce a change to the setting of the Portobello Tower. The tower is currently derelict, in a poor condition and inaccessible, therefore the upper storeys of the tower could not be accessed in order to inform this assessment. However, it is assumed that some panoramic views from the asset would be affected. Portobello Tower would continue to contribute to views from within the park and views of the park, mainly from the south.
- 6.9.22 It is considered that permanent construction impacts of the Scheme would be limited with the magnitude of impact being no more than negligible. The resulting significance of effect on an asset of medium value would be neutral. In NPPF terms, the historic interest of the tower would not be affected while it would continue to act as a folly and contribute to views within and towards the park. The Scheme would result in less than substantial harm on the significance of Portobello Tower.
- 6.9.23 Some temporary adverse effects are anticipated during the construction of the Scheme due to the presence and movement of construction plant and equipment at the western part of Hilton Park. This also includes an area for soil storage (Figure 2.9 [TR010054/APP/6.2]) that is proposed within Hilton Park. Construction noise levels are predicted to be similar to existing ambient noise levels during the construction phase. The magnitude of impact on this asset of medium value is considered to be minor. Therefore, the significance of effect is slight adverse. In NPPF terms, the Scheme would result in less than substantial harm to the significance of Portobello Tower.

Coach House and stable block

- 6.9.24 The coach house and stable block have historic interest as early 19th century farm buildings that were constructed to support the main house (Hilton Hall). Architectural and artistic interest is derived from the appreciation of the formal layout of the buildings and their style and materials. Architectural features and details, such as the clock tower and cupola, and the rusticated entrance contribute to the architectural interest of this group. Their setting is defined by their location within Hilton Park and their relationship with the Hall. They have group value with Hilton Hall and the other buildings in the park.

6.9.25 The Coach House and stable block are located to the north-east of Hilton Hall. The Coach House and stable block is Grade II listed and is therefore of medium value in line with the methodology in the DMRB (Ref 6.2). Construction of the Scheme would not affect the relationship of this asset with Hilton Hall or the surrounding park. However, it would introduce a change in the setting of this asset. The magnitude of impact on this asset of medium value is considered to be negligible. Based on the significance of effect matrix set out in Table 4.3 of the ES Chapter 4 the resulting significance of effect could be slight or neutral. As the Coach House and stable block would continue to be experienced and appreciated within the remaining area of the park, and their significance would not be permanently affected by construction of the Scheme, the significance of effect would be neutral. In NPPF terms, the Scheme would result in less than substantial harm to the significance of The Coach House and stable block.

Moseley Old Hall

6.9.26 Moseley Old Hall has historic interest as it illustrates a late 16th century house of a wealthy individual that was however refaced in brick in the 19th century to reflect the changing fashion of buildings at the time. The Old Hall is Grade II* listed and therefore of high value. Architectural interest derives from the appreciation of the Georgian remodelling of the exterior of the building with earlier elements including the tall chimneys that could survive from the original phase of the building or the 18th century when a renovation was undertaken. The Old Hall has historic interest that derives from its association with Charles II as it provided a hiding place for the future king, following his defeat at the Battle of Worcester in 1651.

6.9.27 The Hall also has archaeological interest as its fabric retains different phases of development from as early as the 16th century. Moseley Old Hall is located within extensive grounds, including a knot garden recently restored to a 17th century design and an ancient woodland parcel (Whitgreave's Wood also known as Oxdon Leasow wood) to the north-east of the Hall. The Old Hall and grounds are owned and managed by National Trust. A belt of trees planted in 1985 on top of an earth bund, screen the grounds of the Hall from the M54 to the north. The setting of Moseley Old Hall includes the associated garden, associated outbuildings and the Moseley Old Hall Cottage. The setting of this asset also extends to the grounds that surround the property and fall under the ownership of the National Trust including Whitgreave's Wood to the north-east. It also extends to the surrounding agricultural land, once in the same ownership with Moseley Old Hall. The construction of the M54 to the north has eroded this extensive rural setting.

6.9.28 The Scheme would be located to the north-east of the Hall. A small part of Whitgreave's Wood, to the south of the existing M54 and west of the A460 would be subject to temporary works to enable biodiversity enhancements as part of the Scheme, no other works would be undertaken within the boundary of the woodland. This part is adjacent to the existing road network. Whitgreave's Wood forms part of the setting of the asset as it has historical association with the Moseley Old Hall. However, the significance of the asset derives mainly from its

historic, architectural and archaeological interest, with this part of the setting having a neutral contribution to its significance.

- 6.9.29 The proposed lighting strategy for the Scheme includes the replacement of the existing lighting columns on either side of the M54 carriageway; retention of the lighting columns in the central reserve; and installation of new lighting columns (12 m high) on the new M54 Junction 1 arrangement. Lighting columns of similar height already exist on the existing M54 junction.
- 6.9.30 Signage at the new M54 Junction 1 would consist of replacement of three existing verge mounted signs to four cantilever mounted gantry signs and two verge mounted tiger-tail signs to provide safe and clear signing for the new junction arrangement. These would not exceed the height of existing lighting columns at the M54 Junction 1. The proposed sign locations are shown on the Works Plans [TR010054/APP/2.4].
- 6.9.31 The construction noise that is likely to be experienced from this asset is below existing ambient noise levels. The majority of the construction works, in proximity to Moseley Old Hall and the associated ancient woodland, including signage and lighting, would be concentrated on the existing road network and would mostly consist of replacing existing infrastructure at this part of the Scheme. Due to the location of the Scheme adjacent to and including the existing infrastructure, the construction of the Scheme would result in no change to the significance of this asset, as similar lighting columns and signage already exist on the M54. This would result in a neutral significance of effect.

Moseley Old Hall Cottage

- 6.9.32 The Cottage has historic interest as a 16th century cottage that was substantially altered in the 18th century. It is also associated with the Moseley Old Hall and the Whitgreave family. Architectural interest derives from the surviving timber frame construction as well as the 19th century alterations. The setting of the Cottage is defined by its relationship with Moseley Old Hall and coincides with the setting of the Hall.
- 6.9.33 There would be no impact on this asset as a result of the Scheme as it would not affect the setting of this asset. This would result in a neutral significance of effect.

Moseley Hall and associated buildings

- 6.9.34 Moseley Hall has historic interest as an early 18th century house, associated with the Whitgreave family. Architectural and artistic interest derives from the appreciation of the early Georgian style and surviving architectural details. The setting of the Hall is defined by its associated grounds, including a fishpond and woodland.
- 6.9.35 The listed buildings that surround the Hall also have historic interest as they illustrate early 18th century buildings and structures that were built to support the Hall. Architectural interest derives from the appreciation of the design and materials of these buildings. Their significance is defined by their relationship with

Moseley Hall. Their setting is defined by their location within the grounds of Moseley Hall.

- 6.9.36 There would be no impact on this asset as a result of the Scheme as it would not affect the setting of this asset. This results in a neutral significance of effect.

Historic landscape

Hilton Park

- 6.9.37 Hilton Park (A40) is a landscape park thought to be established in the mid-late 18th century around the early 18th century Hilton Hall, a grade I listed country house. Hilton Park is not designated as a Registered Park and Garden but is locally designated by South Staffordshire Council in their Core Strategy (Ref 6.24) and encompasses five listed buildings. It has historic interest as it illustrates a mid- to late 18th century parkland that was designed to form the setting of a country house. It is associated with prominent families in the area, including the Vernon family and the renowned landscape gardener, Humphry Repton. The Park has archaeological interest that derives from early activity on the site and a medieval manor that was surrounded by a moat, the remains of which are still extant. Architectural interest derives from the design of the park, including planted trees and woodland that survive as well as the ornamental pools to the west of the Hall, especially the Lower Pool and the one to the north of the Conservatory. Portobello Tower contributes to views within the Park, from Hilton Hall and across the parkland, as, apart from its commemorative value, it was also constructed as a folly. The Conservatory was constructed as an ornamental feature within the park and in order to accommodate exotic plants but also to contribute to views from the hall. Although parts of the designed landscape have been altered or lost, especially in the area around the Hall, the surviving trees and plantations illustrate Repton's original landscape designs. The Park was designed as part of the Picturesque movement, characterised by informal plantations and picturesque views. It is possible that more ornamental gardens used to surround the Hall, including the walled garden to the north; however, these do not survive.
- 6.9.38 There are no views outside of the park due to existing belts of trees along its boundaries that would continue to provide screening. Views within the park are informal, most of them dominated by trees, or by the Hall. Views of the Portobello Tower can also be experienced within the park, particularly from the area to the south of the Hall.
- 6.9.39 The Scheme would have a direct impact upon Hilton Park. The Scheme would start at the M54 Junction 1 to the south and would continue until it meets Hilton Lane to the north, through the western part of the park. The Scheme would affect the western boundary of this asset, which would be severed from the rest of the park to the east. As the Scheme runs northwards through the park, it would be located close to the alignment of Dark Lane, running parallel along the western boundary of the park. This would include the Severn Trent diversion that would run along the eastern edge of the proposed carriageway. As a result, key elements of the park, including the Lower Belt, The Shrubbery, the Lower Pool and surrounding woodland would be affected. This would affect the understanding and appreciation

of the development of Hilton Hall and associated parkland. These are elements that illustrate the historic development of the park. However, although they would be affected by the Scheme, they would not be lost completely. The remaining woodland around the Lower Pool would be retained along with the open parkland between the Hall and the Shrubbery. The remaining trees would continue to provide screening to the Scheme from the eastern part of the park, as well as from Hilton Hall and its associated buildings and structures. Any visibility of elements of the Scheme, such as lighting columns would be minimal and from the second floor of the hall rather than first floor or ground level.

- 6.9.40 The magnitude of impact on Hilton Park is considered to be moderate adverse as the parkland would be significantly modified and key elements of the landscape would be partially lost. The remaining part of the park would continue to be understood and appreciated and it would continue to provide an attractive setting for Hilton Hall and its associated buildings and structures. On an asset of medium value the resulting significance of effect would be moderate adverse. In NPPF terms, the Scheme would result in less than substantial harm to the significance of the asset, as the remaining park would continue to be understood and appreciated and provide an attractive setting for Hilton Hall and associated buildings.
- 6.9.41 Some temporary adverse effects are also anticipated during the construction of the Scheme due to the presence and movement of construction plant and equipment at the western part of Hilton Park and the erection of a site compound to the south-western corner of the park. Construction noise would also be experienced from within the park, with the highest levels experienced in the immediate vicinity of the construction works and considerably lower levels experienced in the areas further away from them. The magnitude of impact on this asset of medium value is considered to be minor. Therefore, the significance of effect would be slight adverse. There would be temporary impacts on the ability to understand and appreciate the asset during the construction of the Scheme, however it is considered that this would result in less than substantial harm to the significance of Hilton Park. These impacts would be temporary during the construction phase only.
- 6.9.42 A summary of the predicted impacts and residual effects on heritage assets arising from construction of the Scheme is presented in Table 6.7 below. This assessment has been undertaken taking into account the mitigation measures detailed in Section 6.8. The assessment has concluded that the majority of cultural heritage assets subject to an adverse impact would experience residual effects no greater than slight adverse which is not considered significant. Hilton Park would experience a moderate adverse effect which is considered to be significant in accordance with DMRB guidance, however when implementing the test of substantial harm under NPPF this is considered to be less than substantial harm.

Table 6.4: Summary of construction effects on cultural heritage assets.

Asset ID	Description	Heritage value	Magnitude of impact	Significance of residual effect
A59	Wordsley Green Turnpike Road	Negligible	Minor adverse	Slight adverse (not significant)
A22	Cropmarks	Negligible	Major adverse	Slight adverse (not significant)
A23	Cropmark	Negligible	Major adverse	Slight adverse (not significant)
A36	Cropmark complex	Negligible	Moderate adverse	Slight adverse (not significant)
B2	Hilton Hall	High	Minor adverse	Slight adverse (not significant)
B4	The Conservatory	High	Negligible adverse	Slight adverse (not significant)
B3	Gatepiers	Medium	No change	Neutral (not significant)
B23	Portobello Tower	Medium	Minor adverse	Slight adverse (not significant)
B22	Coach house and stable block	Medium	Negligible adverse	Neutral (not significant)
B1	Moseley Old Hall	High	No change	Neutral (not significant)
B14	Moseley Old Hall Cottage	Medium	No change	Neutral (not significant)
B15- B19	Moseley Hall and associated buildings	Medium	No change	Neutral (not significant)
A40	Hilton Park	Medium	Moderate adverse	Moderate adverse (significant)

Operation

Archaeology

- 6.9.43 As archaeological assets directly impacted by Scheme construction would have been removed during that phase of work, the assessment has concluded that there would be no physical impacts arising from operation of the Scheme on these assets, and thereby no effects.
- 6.9.44 Similarly, no impacts or effects are predicted in respect of changes to the setting of such assets associated with the presence and operation of lighting, traffic movements or road noise.

Historic buildings

- 6.9.45 As described in paragraph 6.7.4, operational impacts of the Scheme could include increased road traffic noise, operational lighting or views of vehicles using the Scheme which have the potential to impact on a number of historic buildings in the study area. Some of the listed buildings in the study area would experience a change in traffic noise level during the operation of the Scheme, though none are expected to experience a significant change (a change in noise level of less than 3 dB in the opening year (2024) is not normally considered to be significant). More information about the changes in traffic noise levels throughout the study area can be found in Chapter 11: Noise and Vibration.
- 6.9.46 None of the designated built heritage assets within the study area are anticipated to experience a change in traffic noise of 3 dB or more due to the operation of the Scheme. The highest increases in noise would be experienced at Hilton Hall and the Conservatory and would be around 2 dB at the worst affected facade. The increase in traffic noise level is not considered to be significant.
- 6.9.47 A summary of the lighting strategy is provided in Chapter 2: The Scheme and the location of the proposed lighting columns are shown on the relevant plan. The mainline to the north of Junction 1 would not be lit. However, there would be lighting on the junctions and slip roads. The lighting strategy for the Scheme includes the replacement of some of the existing lighting columns. According to the lighting strategy, more energy efficient lighting in the form of Light Emitting Diodes (LED) would be used. LEDs are more energy efficient than conventional luminaires and also reduce light spill into adjacent areas. Therefore, changes in lighting overspill would not have any adverse effects on the historic environment. It is considered that lighting overspill would be reduced from the current levels by the use of LEDs. The proposed lighting strategy would not affect the significance of the heritage assets within the study area, during the operation of the Scheme.
- 6.9.48 Vehicles using the Scheme would not be visible from the listed buildings within Hilton Park, apart from the Portobello Tower which already experiences views towards the existing motorways and roads that surround the park (refer to Figure 7.1B [TR010054/APP/6.2]). Visibility of the Scheme from Moseley Old Hall would remain similar to the baseline with some mitigation derived from the use of LED lights which reduce light spill compared to the existing lighting. In terms of the remaining listed buildings within the study area, traffic movement associated with the Scheme may be visible from historic buildings located in Shareshill and Little Saredon. Due to traffic movement associated with existing infrastructure in proximity to these assets, and their location within settlements, the significance of these assets would not be affected.
- 6.9.49 There would be no change to the significance of these assets as a result of the changes in traffic noise level, lighting or visual intrusion. The Scheme would have a neutral effect on historic buildings during operation of the Scheme.

Historic landscapes

- 6.9.50 The assessment has identified that impacts (temporary and permanent) on the historic landscape would principally derive from Scheme construction, and therefore any impacts during its operational phase would be limited by the extent to which road noise, operational lighting or visible traffic movements would influence the character and perception of the historic landscape.
- 6.9.51 Hilton Park, which extends from the A460 in the west to the M6 in the east, would generally experience an increase in traffic noise level. The magnitude of change varies with distance from the scheme; with the areas of the park directly adjacent to the Scheme experiencing an increase in traffic noise greater than +5 dB and the area to the east of Hilton Hall, adjacent to the M6, predicted to experience no change. The areas that would experience the greatest increase in noise levels are covered in thick woodland that currently forms part of The Shrubbery and are not publicly accessible. While the change in traffic noise level would vary across Hilton Park the change in noise level would not be significant for the majority of the Park, including the listed buildings for which the park provides the setting.
- 6.9.52 In terms of lighting of the Scheme, information has been provided in Chapter 2: The Scheme and the Historic Buildings section in this chapter. The new M54 Junction 1 would be lit by lighting columns which would not exceed the height of existing lights and reduce light spill through the use of LED lamps. Lighting at the M54 Junction 1 would therefore have a similar or lesser effect, at night, from within the park and would affect the significance of this asset.
- 6.9.53 HGVs and cars that use the Scheme would not be visible from within Hilton Park, with the exception of the areas in very close proximity to the new M54 Junction 1 where some visual intrusion might be experienced as a result of glimpses through trees and vegetation in winter.
- 6.9.54 There would be a negligible adverse magnitude of impact on the significance of the historic landscape as a result of the operation of the Scheme. Based on the significance of effect matrix set out in Table 4.3 of the ES Chapter 4 the resulting significance of effect could be neutral or slight. Due to the Scheme resulting in some limited effect on the appreciation of the significance of the asset, the significance of effect on the asset is considered to be slight adverse. A summary of predicted residual effects on heritage assets from the operation of the Scheme is presented in Table 6.5. This assessment has been undertaken taking into account the mitigation measures detailed in Section 6.8. The assessment has concluded that all cultural heritage assets subjected to an adverse impact would experience residual effects no greater than slight adverse.

Table 6.5: Summary of operation effects on cultural heritage assets.

Asset ID	Description	Heritage value	Magnitude of impact	Significance of residual effect
B2	Hilton Hall	High	No change	Neutral (not significant)
B4	The Conservatory	High	No change	Neutral (not significant)
B3	Gatepiers	Medium	No change	Neutral (not significant)
B23	Portobello Tower	Medium	No change	Neutral (not significant)
B22	Coach house and stable block	Medium	No change	Neutral (not significant)
B1	Moseley Old Hall	High	No change	Neutral (not significant)
B1	Moseley Old Hall Cottage	Medium	No change	Neutral (not significant)
B14	Moseley Hall and associated buildings	Medium	No change	Neutral (not significant)
A40	Hilton Park	Medium	Negligible adverse	Slight adverse (not significant)

6.10 Monitoring

Construction

- 6.10.1 Construction of the Scheme has the potential to have a significant adverse effect on unrecorded archaeological deposits. However, it is not considered that this would require monitoring as detailed in the DMRB (Ref 6.1), as the value and significance of any such assets would be validated through the process of archaeological evaluation trenching (Refer to Section 6.8) undertaken prior to construction.

Operation

- 6.10.2 There are no residual significant adverse effects, therefore no monitoring is required.

6.11 References

- Ref 6.1 Highways Agency (2019) Design Manual for Roads and Bridges, Volume 11, Section 3, Part 2, Cultural Heritage (LA 106)
- Ref 6.2 Highways Agency (2019) Design Manual for Roads and Bridges, Volume 11, Section 2, Part 4, Environmental assessment and monitoring (LA 104)
- Ref 6.3 The Stationery Office (1979) Ancient Monuments and Archaeological Areas Act (1979) (as amended)

- Ref 6.4 The Stationery Office Planning (1990) (Listed Buildings and Conservation Areas) Act 1990
- Ref 6.5 Department for Transport (2014). National Policy Statement for National Networks.
- Ref 6.6 Department for Communities and Local Government (2018). National Planning Policy Framework.
- Ref 6.7 Department for Communities and Local Government Planning Practice Guidance <http://planningguidance.communities.gov.uk/>
- Ref 6.8 Historic England (2017) 'Historic Environment Good Practice Advice in Planning Note 2 – Managing Significance in Decision Taking in the Historic Environment, Second edition.
- Ref 6.9 Historic England (2017) 'Historic Environment Good Practice Advice in Planning Note 3 – The Setting of Heritage Assets'. Second edition
- Ref 6.10 Historic England (2019) 'Historic England Advice Note 12 – Statement of Heritage Significance: Analysing Significance in Heritage Assets.'
- Ref 6.11 South Staffordshire Council (2012) Core Strategy [on line] <https://www.sstaffs.gov.uk/doc/179760/name/Core%20Strategy%202012%20Corporate%20Version%20.pdf/>
- Ref 6.12 Chartered Institute for Archaeologists (2019) Code of Conduct. Chartered Institute for Archaeologists: ClfA [online] <https://www.archaeologists.net/sites/default/files/Code%20of%20Conduct.pdf>
- Ref 6.13 Chartered Institute for Archaeologists (2017) Standard and Guidance for Historic Environment desk-based Assessment Reading: ClfA [online] Available at http://www.archaeologists.net/sites/default/files/node-files/ClfAS&GDBA_0.pdf
- Ref 6.14 Historic Environment Scotland aerial photographic collection. Available at: <https://ncap.org.uk/search?view=map> (Accessed July 2019).
- Ref 6.15 Highways England (2019) M54 to M6/ M6 Toll Link Road, PCF Stage 3: EIA Scoping Report.
- Ref 6.16 British Geological Survey (2001) Wolverhampton England and Wales Sheet 153. Solid and Drift Geology. 1:50 000
- Ref 6.17 British Geological Survey (2019) Online Geindex map. Available online at <http://mapapps2.bgs.ac.uk/geindex/home.html> - accessed 03/01/2019.
- Ref 6.18 Mills, A. D. (2003) A Dictionary of British Place Names Oxford, Oxford University Press.
- Ref 6.19 Phase Site Investigations Ltd (2019) M54 to M6/ M6 Toll Link Road Scheme, Staffordshire: Archaeological Geophysical Survey.
- Ref 6.20 Cockin, T. (2000) The Staffordshire Encyclopaedia: a secondary source index on the history of the old county of Stafford, celebrating its curiosities,

peculiarities and legends. Malthouse Press, Stoke-on-Trent.

- Ref 6.21 Thompson, M and Borozdin-Bidnell, M (2019) Georgian and Regency Conservatories: History, design and conservation. Historic England
- Ref 6.22 Tracy, N. (2004) Sir Edward Vernon (1723-1794). Oxford Dictionary of National Biography. <http://www.oxforddnb.com>, website accessed 6 December 2018.
- Ref 6.23 Rutherford, S. (2018) Hardy Plants and Plantings for Repton and Late Georgian Gardens (1780–1820). Historic England
- Ref 6.24 South Staffordshire Council (2012) A Local Plan for South Staffordshire: Core Strategy Development Plan Document.
- Ref 6.25 Watts, S. (2011) The Archaeology of the West Midlands: A framework for research
- Ref 6.26 Page, W. (1908) The Victoria County History of the County of Stafford: Volume One. Archibald Constable and Company Ltd, London.
- Ref 6.27 Knott, CA. (1989) A History of Hilton Hall. For Tarmac PLC
- Ref 6.28 Staffordshire County Council (2011) Methodology for the Refined HLC for Staffordshire.
- Ref 6.29 Historic England (2010) West Midlands Farmsteads and Landscapes Project: County Summary Report for Staffordshire. Available at <https://historicengland.org.uk/images-books/publications/wm-county-summaries/wm-staffordshire-county/>
- Ref 6.30 Staffordshire County Council (2015) Staffordshire Farmsteads Character Statement. Available at <https://www.staffordshire.gov.uk/environment/Environment-and-countryside/HistoricEnvironment/Documents/Farmsteads-Guidance-Staffordshire-Farmsteads-Character-Statement-Jan-15.pdf>