

M1 Junction 19 Improvement

Environmental Statement

Volume 2

Chapter 4 Landscape

Final

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4.1 INTRODUCTION

4.1.1 This chapter provides an environmental assessment of the potential effects on the landscape of the M1 Junction 19 Improvement as set out in the Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 5¹. It is one of 9 chapters dealing with environmental topics for Volume 2 of the Environmental Statement (ES) as set out in Section 1 of the DMRB.

Objectives

4.1.2 The objective for the assessment for landscape is:-

- To protect the character of the landscape and to minimise adverse visual impacts and loss of features

4.1.3 In addition there is the following scheme specific objective:-

- Environmental impact mitigation measures should be integrated into the design, particularly in respect of noise reduction and night time pollution in relation to the local villages of Swinford, Catthorpe and Lilbourne

4.1.4 The project also needs to be considered in relation to the following commitments:-

- Offsite planting to be considered in advance of the main works – commitment to Parish Councils
- Hedgerow between Tomley Hall Farm and M6 to be reinforced with new planting – commitment to landowner

The Study Area

4.1.5 The study area used for the landscape and visual impact assessment will include the broad area shown on Figure C Environmental Resources Plan in Volume 1 of the ES at Appendix 1. Figure 4.4 defines the approximate visual envelope of views towards the existing junction. The detailed extent of views of the proposals is indicated by the series of visual impact assessment drawings, Figures 4.6 to 4.10.

The Project

4.1.6 The project is illustrated by a series of plans bound into a separate Appendix 1 to Volume 1 of the ES as follows:-

- Figure A : Location Plan
- Figure B : Environmental Master Plan
- Figure C : Environmental Resources Plan
- Figure G : Areas Required During Construction
- Figure H : Cross Sections

4.1.7 Appendix 1 also contains a series of photomontages showing the view from selected viewpoints:-

- Before the project is built
- Immediately upon completion
- 15 years after completion

4.1.8 Illustrations of some of the main structures required for the project are also included in Appendix 1.

Landscape Assessment

4.1.9 As set out under Section 4.2 Methodology, landscape assessment deals with three interrelated strands:-

- Landscape character and its relative sensitivity to change
- Visual impact, that is the change in the view resulting from the junction improvement for dwellings and areas accessible to the public, such as footpaths
- Landscape quality, or the scenic value

Interactions

4.1.10 There are interactions between this chapter and several other chapters as follows:-

- Chapter 2 Cultural Heritage, deals with impacts on Historic Landscape Character and upon Listed Buildings, Conservation Areas and a Registered Park and Garden at Stanford, in terms of their heritage value.
- Chapter 3 Ecology, defines landscape features and proposed mitigation measures such as habitat creation in terms of their value for ecology and nature conservation
- Chapter 7 Effects on All Travellers, takes account of the view from the road for drivers and the amenity value of public rights of way and other routes for vulnerable users, the collective term for pedestrians, cyclists and horse riders.
- Chapter 9, Road Drainage and the Water Environment describes surface water features and proposed drainage ponds.

4.1.11 Care has been taken to avoid significant overlap or double counting of impacts or of benefits resulting from the proposals.

4.1.12 In common with other Chapters the Landscape assessment recognises that the Catthorpe Viaduct, which carries the M6 to M1 Southbound link over the M1, is being replaced as a maintenance project. The scope of this work includes the replacement of the bridge on a new alignment immediately to the south-west of the existing. It also requires the creation of new approach embankments either side of the M1. The work is programmed to begin in June 2010, for completion in November 2011.

4.1.13 The bridge and earthworks either side of the M1 would be retained in the proposed layout for the M1 Junction 19 Improvement, as would the alignment of the M6 to M1 Southbound link east of the M1. To the west of M1 this link would have to be amended to accommodate the proposed M6 to A14 link.

4.1.14 A separate environmental assessment has been carried out for the Catthorpe Viaduct Replacement (CVR) as a standalone maintenance project. In terms of the landscape and visual impact assessment there are minimal potential impacts, given that:-

- The viaduct works are within the existing highway boundary
- There is minimal loss of existing screening vegetation, resulting in no change to existing views
- There is no loss of mature vegetation or field boundaries that creates the existing mature setting for the junction

- The replacement viaduct will be lit as existing and there will be no change to night time impacts.

4.1.15 This EIA for the M1 Junction 19 Improvement takes into account the new bridge both:-

- As part of the existing junction assuming the M1 Junction 19 Improvement is not built, the 'do-minimum' scenario
- As part of the completed M1 Junction 19 Improvement, the 'do-something' scenario

4.1.16 These issues are dealt with in Section 4.6 Environmental Impacts.

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4.2 METHODOLOGY

4.2.1 This report is divided as follows:-

- 4.2 Describes the methodology for the landscape assessment and defines the criteria used to define the significance of effects
- 4.3 Defines the relevant legislation and the land use policy framework affecting landscape issues
- 4.4 Provides a description of the baseline environment within the study area, based on desktop study and site survey. The description identifies the character of the landscape, an analysis of existing views, the quality of the landscape, the sensitivity of these and the capacity of the landscape to accommodate change
- 4.5 Outlines the measures proposed as part of the project to mitigate effects on the landscape
- 4.6 Sets out the landscape impacts resulting from the project. The assessment considers both the impact of the scheme without mitigation i.e. on opening in Year 0 and the impact in Year 15, once the measures set out in 4.5 have had time to take effect
- 4.7 Analyses the significance of effects
- 4.8 Identifies any difficulties encountered in carrying out the assessment
- 4.9 Provides an overall summary

4.2.2 As set out in the introduction, the landscape assessment deals with three interrelated strands as set out in the DMRB Volume 11 Section 3 Part 5 Landscape Effects¹:-

- Assessment of landscape character
- Visual impact assessment
- Assessment of landscape quality

4.2.3 Since the DMRB was published in 1993, there have several developments in guidance on methodology for landscape assessments notably:-

- Landscape Character Assessment : Guidance for England and Wales, published by the Countryside Agency and Scottish Natural Heritage in 2002²
- Guidelines for Landscape and Visual Impact Assessment, published by the Landscape Institute and Institute of Environmental Management and Assessment in 2002³
- Topic Paper 6 : Techniques and Criteria for Judging Capacity and Sensitivity, published by the Countryside Agency and Scottish Natural Heritage⁴

4.2.4 All of these are compatible with the DMRB approach but have served to refine techniques in assessing the sensitivity of the landscape and its capacity to accommodate change.

4.2.5 Topic Paper 6, the most recent, defines sensitivity and capacity as follows:-

- Sensitivity – may be considered in terms of the inherent sensitivity of the landscape, or in response to a particular type of development
- Capacity – the ability of a landscape to accommodate different amounts of change, or development of a specific type.

4.2.6 As part of the scoping of the environmental assessment¹⁵, consultations were held with Natural England, the Statutory Environmental Body now responsible for the landscape. Their formal response was that the EIA should include a detailed assessment that

evaluates the existing landscape in terms of its sensitivity, capacity and ability to accommodate change, as set out in Topic Paper 6.

4.2.7 Topic Paper 6 relies upon the same three strands of landscape assessment as set out in the DMRB, but referring to them as:-

- Landscape Character Sensitivity
- Visual Sensitivity
- Landscape Value

These terms are used for this assessment.

Landscape Character Sensitivity

4.2.8 Landscape character is the starting point for any landscape assessment.

4.2.9 Landscape character is defined in the Guidelines for Landscape and Visual Impact Assessment³ as:-

“distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape. “

4.2.10 Areas of similar landscape character have been identified by the Countryside Agency (now part of Natural England), and the Local Planning Authorities and are set out in more detail in Section 4.4 Baseline Conditions using descriptions from the following sources:-

- Countryside Character, Volume 4 East Midlands, Countryside Agency⁵
- Leicester, Leicestershire and Rutland : Landscape and Woodland Strategy, Leicestershire County Council⁶
- Landscape Strategy and Guidelines, Northamptonshire Current Landscape Character Assessment and Environmental Character Assessment, Northamptonshire County Council^{7, 8, 9}
- The Warwickshire Landscapes Guidelines, Warwickshire County Council¹⁰
- Harborough District Landscape Character Assessment¹³
- Landscape Assessment of the Borough of Rugby. Sensitivity and Condition Study¹⁴

4.2.11 The inherent sensitivity of landscape character as set out in Topic Paper 6⁴ takes into account the following:-

- Biodiversity, i.e. Natural factors, the extent and pattern of semi-natural habitats
- Cultural, including historic or traditional features
- Landcover, how the land is farmed or managed, the type of vegetation cover
- Pattern, i.e. Aesthetic factors, the relationship between topography and form, scale, enclosure and movement

4.2.12 For each of the above, the sensitivity is considered in terms of the scale at which it matters, its rarity, importance and substitutability, that is the ability of its features to be replaced.

- 4.2.13 The impact of the proposals has been assessed during the construction period, for the opening year (Year 0), that is before planting, and for the design year, 15 years after opening (Year 15), by which stage planting would be becoming well established
- 4.2.14 Table 4.1, which is derived from Section 2 of the DMRB¹ sets out the criteria for identifying sensitivity.

Table 4.1: Environmental Value (or Sensitivity) and Typical Descriptors

Value/Sensitivity	Criteria
Very High	High importance and rarity, international scale and limited potential for substitution
High	High importance and rarity, national scale, and limited potential for substitution
Medium	High or medium importance and rarity, regional scale, limited potential for substitution
Low (or Lower)	Low or medium importance and rarity, local scale
Negligible	Very low importance and rarity, local scale

- 4.2.15 To ensure transparency for the assessment a worksheet setting out a full description of the landscape character factors and analysis of sensitivity for the study area is at Appendix A.

Visual Sensitivity

- 4.2.16 This part of the assessment sets out the visual sensitivity of the landscape of the study area taking into consideration the nature of the proposals for the M1 Junction 19 Improvement and the potential for mitigation measures.
- 4.2.17 The assessment considers:-
- The scope for views within the landscape, the degree of containment by landform, tree and woodland cover, taking into account the nature of the proposal
 - The potential visual impact for receptors, including dwellings, views from public rights of way, cultural features such as Listed Buildings and Conservation Areas and other notable viewpoints. It is not possible to quantify this part of the assessment in terms of the number of receptors involved
 - Mitigation potential, measures which can be delivered to screen views and reduce visual impact as an integral part of the project
- 4.2.18 All three of these aspects are an integral part of the visual impact methodology set out in the DMRB¹ and utilised for the project.
- 4.2.19 The visual impact work is based upon site surveys carried out by Moore Environment in 2005 updated in 2007 and 2009. As noted above for Landscape Character Sensitivity impact of the proposals has been assessed during the construction period, for the opening year (Year 0), that is before planting, and for the design year, 15 years after opening (Year 15), by which stage planting would be becoming well established. The visual impact drawings Figures 4.6 to 4.10 assume winter conditions without leaves for Year 0, to present a worst case scenario, but an indication of impacts in the summer months is also given.

- 4.2.20 The assessment takes into account the impact of all aspects of the scheme, including the roads and the traffic upon them, earthworks, signs and gantries, lighting, structures, including bridges and retaining walls, and drainage ponds. As shown on Figures 4.6 to 4.10 the impacts of advance signs and gantries on the approaches to the junction have also been included. Mitigation measures such as mounding or regraded landforms are taken into account for Year 0, but planting is only considered for Year 15.
- 4.2.21 Visual Impact is defined as the change from the existing scene to the view of the future option with the proposals in place. The assessment does then take into account the presence of the existing junction and its lighting which are already dominant elements in the landscape.
- 4.2.22 The magnitude of the visual impact is defined by terms in the DMRB¹ as follows:-
- *Substantial* adverse or beneficial impact – where the proposals would cause a significant deterioration or improvement in the existing view
 - *Moderate* adverse or beneficial impact – where the proposals would cause a noticeable deterioration or improvement in the existing view
 - *Slight* adverse or beneficial impact, where the proposals would cause a barely perceptible deterioration or improvement in the existing view
 - *No change, Neutral* – no discernible deterioration or improvement in the existing view
- 4.2.23 The degree of visual impact is influenced by the effect of distance, intervening features such as trees or hedges, the width of the field of view and the relative exposure of the receptor in terms of the number of windows or floors from which the proposals for each option could be seen. Views from within the curtilage of the property, for example a garden, have also been taken into account.
- 4.2.24 Schedules detailing the visual impact are included at Appendix D. Impacts are illustrated on the Visual Impact plans Figures 4.6 to 4.10 and described in Section 4.6
- 4.2.25 Table 4.2 which is derived from Section 2 of the DMRB¹ sets out the criteria for identifying visual sensitivity.

Table 4.2: Visual Sensitivity Criteria

SENSITIVITY	CRITERIA
Very High	Negligible level of containment, and very limited or no opportunities for mitigation. Potential for very <i>substantial</i> adverse visual impact, resulting in a highly significant deterioration in the view.
High	Low level of containment only limited opportunities for mitigation. Potential for <i>Substantial</i> adverse visual impact resulting in a significant deterioration in the view.
Medium	Medium level of containment, some positive opportunities for mitigation. Potential for <i>Moderate</i> adverse visual impact resulting in a noticeable deterioration in the view.
Low	High level of containment with good opportunities for mitigation. Potential for <i>Slight</i> adverse visual impact resulting in a barely perceptible deterioration in the view. Some potential for positive visual impact.

- 4.2.26 A worksheet setting out visual sensitivity for the project is at Appendix B.

Landscape Value

4.2.27 This part of the assessment considers:-

- Landscape designations which may apply to the study area
- Scenic value in terms of the areas relative visual attractiveness or beauty
- Tranquillity, in terms of the remoteness, wildness and sense of isolation, or lack of it, within the landscape

4.2.28 Scenic value has been assessed using the methodology included in the DMRB¹ for assessing landscape quality. The DMRB defines the terms as:-

- 'highest quality'
- 'very attractive landscapes'
- 'good quality landscape'
- 'ordinary quality landscape'
- 'poor quality landscape'

4.2.29 The criteria used in the assessment are set out in Appendix E

4.2.30 Table 4.3 which is derived from Section 2 of the DMRB¹ sets out the criteria for identifying landscape value.

Table 4.3: Landscape Value Criteria

Sensitivity	Criteria
Very High	Designation at International level. 'Highest Quality' scenic value, very high tranquillity.
High	Designation at National scale. 'Very attractive' scenic value, high tranquillity.
Medium	Designation at Regional scale. 'Good quality' scenic value, medium tranquillity.
Low	Designation at Local scale. 'Ordinary quality' scenic value, low tranquillity.

4.2.31 Particular care has been taken in the weighting of designations. The majority of the country comprises undesignated landscapes, which can be of high value and importance, particularly in a local context. The sensitivity assigned to landscape value should always be the highest of the three factors included.

Assessing Magnitude of Impacts Capacity and Significance of Effect

4.2.32 The magnitude of impacts for the three landscape strands described above are considered using the criteria in Table 4.4, from Section 2 of the DMRB¹.

Table 4.4: Magnitude of Impact and Typical Descriptors

Magnitude	Criteria
Major	Loss of resource and/or quality and integrity; severe damage to key characteristics, features or elements (Adverse). Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial)
Moderate	Significant impact on the resource, but not adversely affecting the integrity; Partial loss of/damage to key characteristics, features or elements (Adverse). Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial).
Minor	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (Adverse) Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial)
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse) Very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial)
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

4.2.33 The results of the impact assessment are set out in Section 4.6 Environmental Impact.

4.2.34 Identifying the significance of effect relies upon reasoned argument and professional judgement. It is also important that the process is both transparent and systematic. Table 4.5 from the DMRB provides some typical descriptors of significance and the five categories employed.

Table 4.5: Descriptors of Significance of Effects

Significance category	Typical descriptors of effect
Very Large	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a serious change in a site or feature of district importance may also enter this category.
Large	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor.

Significance category	Typical descriptors of effect
Slight	These beneficial or adverse effects may be raised as local issues. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

4.2.35 As set out in the DMRB¹ significance is considered to be a product of sensitivity and magnitude of impact. In this landscape assessment, using the methodology in Topic Paper 6⁴, the overall measure to be balanced against impact magnitude is capacity which is itself derived from the sensitivity identified for each landscape strand.

4.2.36 Topic Paper 6⁴ identifies a two stage process to identify capacity, i.e. the ability of a landscape to accommodate development:-

- Overall landscape sensitivity is derived from a combination of landscape character sensitivity and visual sensitivity
- Capacity is derived from a combination of overall landscape sensitivity and landscape value

4.2.37 Matrices used to assist this process are at Appendix F.

4.2.38 The significance of effect is then derived from the matrix at Table 4.6 below.

Table 4.6: Arriving at Significance

LANDSCAPE CAPACITY	Negligible	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	Low	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	High	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Very High	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight
		No change	Negligible	Minor	Moderate	Major
MAGNITUDE OF IMPACT (DEGREE OF CHANGE)						

4.2.39 The results of the assessment are set out in Section 4.7 Significance of Effects.

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4.3 LEGISLATION AND POLICY FRAMEWORK

International and National Policy

4.3.1 Under the European Landscape Convention¹² member states of the Council of Europe undertake to:-

- recognise landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity
- establish and implement policies aimed at landscape protection, management and planning
- establish procedures for the participation of the general public, local and regional authorities and other interested parties in the definition and implementation of landscape policies
- integrate landscape into all policies with possible direct or indirect impact of landscape

4.3.2 No landscape designations coincide with the footprint of the proposals. Landscape planning guidance is set out in Planning Policy Statement 7 (PPS7) Sustainable Development in Rural Areas¹¹. PPS7 requires planning authorities to ensure that the quality and character of the wider countryside is protected and where possible, enhanced. Authorities should have particular regard to any areas that have been statutorily designated for their landscape, wildlife or historic qualities

4.3.3 The Government Agency with responsibility to monitor the quality of the rural environment is Natural England. They are the Government's statutory advisor on landscape with policies aimed at conserving and enhancing the countryside and its local distinctiveness. Natural England work to ensure positive planning for rural areas, promoting development that respects the character of the landscapes and meets the needs of local communities. Natural England's countryside character initiative is used to improve understanding of the countryside and manage change sustainably.

Regional Policies

West Midlands Regional Spatial Strategy (2008)¹⁶

4.3.4 The Regional Spatial Strategy for the West Midlands was adopted in 2008 and includes provisions for the protection and enhancement of the Region's Landscape. This provision is in the form of policies QE1: Conserving and Enhancing the Environment, QE3: Creating a High Quality Built Environment, QE4: Greenery, Urban Greenspace and Public Spaces, QE5: Protection and Enhancement of the Historic Environment, QE6: The Conservation, Enhancement and Restoration of the Region's Landscape and QE8: Forestry and Woodlands. These policies aim to protect and enhance the character and appearance of the Region's landscape including specific features such as forest, woodland and historic features.

East Midlands Regional Plan (2009)¹⁷

4.3.5 The East Midlands Regional Plan was adopted in 2009 and includes the provision of up to date policies which seek to protect and enhance the Region's Landscape. In particular policies 26: Protecting and Enhancing the Region's Natural and Cultural Heritage, 27: Regional Priorities for the Historic Environment, 28: Regional Priorities for Environmental

and Green Infrastructure, 30: Regional Priorities for Managing and Increasing Woodland Cover and 31: Priorities for the Management and Enhancement of the Region's Landscape deal with the protection and enhancement of the Region's landscape. The aim of these policies is to protect and enhance the character and appearance of the landscape, promote green infrastructure and protect the historic environment.

Local Policies

Daventry District Council Local Plan 1997¹⁸

4.3.6 The Daventry District Council Local Plan was adopted in 1997. In September 2007 any policies not "saved" expired. Among the saved policies dealing with landscape issues are EN10: Green Wedges, EN25: Comprehensive Landscape Schemes and EN26: Landscaping. The policies aims are to protect and enhance the landscape, green wedges and green links. There is also the requirement that detailed landscape proposals are submitted with development schemes and that these should be implemented no later than the planting season following completion of the development.

4.3.7 These policies are to be eventually replaced with emerging policies under the Local Development Framework (LDF). Daventry are producing a joint Core Strategy as part of the LDF which is the West Northamptonshire Joint Core Strategy (2007) which is currently at the issues and options stage. This means that any policies are currently only in draft form. As the Core Strategy is currently at Issues and Options Stage there are not yet any policies but the strategy does set out Strategic Objectives which will inform the basis of future policies. Strategic Objective 8 of the Core Strategy aims to ensure that development is sensitive to its environment.

Harborough District Council Local Plan 2001¹⁹

4.3.8 The Harborough District Local Plan was adopted in 2001 and as mentioned above all policies that were not formally saved expired in September 2007. There are two saved policies which related to landscape and these are EV19: Protection of Trees which seeks to protect and replace trees affected by development and EV20: Landscaping which requires that all development proposals are accompanied by detailed landscape plans.

4.3.9 Harborough are in the process of producing their Core Strategy which is currently at alternative options stage. Within this document Core Spatial Policies 3: Promoting Sustainable Development and 17: Develop and Protect the Natural and Historic Environment have relevance to Cultural Heritage. In particular Policy 17 will focus on the need to protect, enhance and restore Harborough's natural resources and character.

Rugby Borough Council Local Plan 2006²⁰

4.3.10 The Rugby Borough Local Plan was adopted in 2006 and contains a number of saved policies. Policies GP1: Appearance and Design of Development, GP2: Landscaping, GP3: Loss of Amenity, E5: Landscape and Settlement Character and E9: Development Affecting Trees, Woodlands and Hedgerows are all relevant to landscape issues. The policies require a high quality of design and landscape plans which help the proposed development form an integral part of its surroundings.

4.3.11 In addition to the saved policies in the Local Plan Rugby are also in the process of writing their Core Strategy which is currently at the preferred options stage. Within the Core Strategy, Spatial Objective 11 aims to protect and enhance the special natural and historic environment of the Borough.

North Northamptonshire Core Strategy (2008)²¹

- 4.3.12 The North Northamptonshire Core Strategy was adopted in 2008 and is a joint Core Strategy covering the areas of Corby, Kettering, Wellingborough and East Northamptonshire. Within this document there are two main policies which are relevant to landscape; these are policies 5: Green Infrastructure and 13: General Sustainable Development Principles. These policies seek to protect and enhance the green assets of the area and aims to avoid any net loss of greenspace.

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4.4 BASELINE CONDITIONS

4.4.1 This section of the assessment describes the baseline environment conditions for the study area from which the predicted landscape and visual impacts of the options can be determined. After a general description of the local landscape context, the baseline conditions are considered under the three main strands described under Section 4.2 Methodology:-

- Landscape Character sensitivity, including:-
 - A description of the landscape character areas defined by the Countryside Agency (now Natural England) and by the respective local authorities
- Visual Sensitivity, including:-
 - The general setting
 - Topographical horizons
 - Vegetative horizons and barriers
 - Views from settlements
 - Views from individual properties
 - Views from other locations
 - Visual detractors
- Landscape Value, including:-
 - Landscape designations
 - Scenic value
 - Tranquillity

Landscape Context

Topography and Watercourses

- 4.4.2 Topography as shown on Figures 4.1 and 4.2 is characterised by a series of gently undulating, rounded clay vales, long, low ridgelines and shallow river valleys. The undulating topography is part of the Wolds landscape that extends from the dip slope of the Cotswolds to the High Leicestershire and Leicestershire/Nottinghamshire Wolds.
- 4.4.3 The study area is bisected by the River Avon valley, a wide and generally indistinct topographical feature that traverses the area from east to west. Topography to the north of the river is defined by a series of very shallow, low ridges and valleys that broadly trend in a north – south orientation, reaching a maximum elevation of approximately 144m above Ordnance Datum (AOD). Catthorpe Hill, located immediately to the south-west of Junction 19, rises slightly more steeply above the river plain to an elevation of 128mAOD. Cutting and embankment slopes of the junction network disrupt the eastern flank topography of Catthorpe Hill.
- 4.4.4 The southern flank of the river corridor is defined by a ridge of land extending from Clifton upon Dunsmore (in the south-west) to Lilbourne (125mAOD) and continuing to the east as a shallow ridge between Lilbourne and Yelvertoft (115mAOD).
- 4.4.5 The primary watercourse within the area is the very narrow River Avon. The river outfalls from Stanford Reservoir and traverses a broad area of floodplain landscape in the central,

eastern part of the study area. It meanders towards the west, passing beneath the A14 Trunk Road and the M1 motorway. Steeper, rising ground of Catthorpe Hill and the ridge of land west of Lilbourne create a slightly more distinct river valley corridor to the west of the study area.

- 4.4.6 Clifton Brook is located to the south of the ridge of land extending from Yelvertoft to Clifton upon Dunsmore and drains from east to west.
- 4.4.7 A watercourse flows from Clay Coton in a westerly direction, joining the River Avon at a point due north of Lilbourne. Other, unnamed watercourses drain from the north along shallow valleys towards the River Avon in the south.
- 4.4.8 Stanford Reservoir is the largest open water body within the area. There are a number of large fishing lakes in proximity to Stanford Hall and flooded former gravel workings adjacent to the River Avon (south-west of Catthorpe) and along an unnamed watercourse to the west of the study area in proximity to Shawell.

Settlements, Commerce and Industry

- 4.4.9 The settlement pattern includes the following villages:-
- Shawell; located approximately 1.8km to the north-west of the junction. An attractive, linear village comprising of a mix of older traditional properties with more recent development
 - Swinford; located approximately 1km to the north-east of the junction on rising ground. Swinford is a dense, nucleated settlement with an attractive, older historic core of brick or rendered properties with red tile or occasional thatched roofs. There are farm and farm outbuildings to the south of the village. More recent residential development is generally located to the west of the settlement
 - Catthorpe; a small, linear village approximately 1km to the south-west of the junction and located on an elevated ridge of land that extends from Catthorpe Hill in the north-east. Properties are brick or rendered. A newer development is located to the east of the settlement
 - Lilbourne; a nucleated village located approximately 1.8km to the south of the junction. There are older properties within the settlement and a high proportion of post war development
- 4.4.10 Other settlements indicated on Figures 4.1 and 4.2 include Clay Coton, Clifton upon Dunsmore and Newton.
- 4.4.11 There are a number isolated farms and dwellings near the existing junction. Catthorpe Manor, located to the south-west of Junction 19, is a large manor house incorporating several bungalows in its wooded grounds.
- 4.4.12 There is no significant commercial or industrial activity within the study area.

Communications and Infrastructure

- 4.4.13 Motorways and major roads within the study area are indicated on Figure 4.1 and include the M1 and M6 motorways, the A14 and A5 Trunk Roads. There are also several minor roads linking the various settlements.

4.4.14 A section of dismantled railway crosses the study area from east to west to the north of Lilbourne. A further section is located to the west of Shawell. There are two high voltage transmission lines on pylons. One crosses the M1 motorway to the north of Lilbourne and another is located to the east of Swinford.

Public Rights of Way

4.4.15 There is an extensive network of footpaths and bridleways in proximity to the motorway junction between Swinford, Lilbourne, Catthorpe and Shawell. The existing network is shown on the Environmental Resources Plan, Figure C, included in Appendix 1 to Volume 1 of the ES and described in Chapter 7, Effects on all Travellers.

Heritage

4.4.16 Heritage features of importance to the landscape are described in Chapter 2, Cultural Heritage and are also illustrated on the Environmental Resources Plan, Figure C, included in Appendix 1 to Volume 1 of the ES. They comprise the following:-

- Conservation Areas at Catthorpe, Swinford and Shawell. There are a number of Listed Buildings within these settlements, including properties on the southern outer margins of Swinford. Swinford Lodge is a Grade 2 Listed Building located approximately 500m to the north-west of the village
- Scheduled Monuments (Motte and Bailey sites) to the north and north-west of Lilbourne village
- extensive tracts of ridge and furrow land to the east of Shawell and south of Swinford
- Stanford Hall and associated Stanford Park is located approximately 2km to the east of the existing motorway junction. The parkland is recorded in the Parks and Gardens Register (National Monuments Record) as an 'area of garden or other land of historic interest'. The designated area extends to the west along a former oak avenue approach from Swinford to the hall

4.4.17 In addition Chapter 2 describes the Historic Landscape Characterisation (HLC) carried out by Leicestershire and Northamptonshire County Councils. This is a similar and related process to landscape characterisation described below, but is defined both by people's perceptions of the evidence of past human activities in the present landscape and the places where those past activities can be understood in the landscape today. As illustrated on Figure 2.4 within Chapter 2, much of the evidence within the study area is related to patterns of field enclosure. Although much of the area immediately around the junction appears to have been modified post war, with the removal of field boundaries, there are areas with more complete evidence of historic field patterns including those with ridge and furrow which hint at previous agricultural patterns of open fields and ancient enclosure systems. The area around Lilbourne is particularly important as an historic landscape as it preserves a large open area with evidence for mediaeval defence, settlement and agriculture.

4.4.18 The findings of the HLC are taken into account in the cultural component of the landscape character assessment set out in the methodology described in Section 4.2 of this chapter.

Landcover and Land Use

4.4.19 The predominant land use is agricultural, mainly arable farmland with areas of improved pasture.

- 4.4.20 Woodland areas are most prominent in the vicinity of Stanford Park (east of Swinford) and to the east of Catthorpe at Catthorpe Manor. There are discrete pockets of woodlands to the west of Lilbourne and south-east of Shawell. There are no significant woodland areas in the south-eastern part of the study area, vegetation being confined to riverside scrub and hedgerows.
- 4.4.21 Significant areas of open water include former sand and gravel workings to the west of the study area, fishing lakes at Stanford Park and Stanford Reservoir.
- 4.4.22 To the south of Lilbourne, there are large areas of land occupied by the radio masts of Rugby Radio Station.

Landscape Character Sensitivity

Regional Landscape Character

- 4.4.23 The study area encompasses three regional character areas as defined by the Countryside Agency (now Natural England), the 'Northamptonshire Uplands', 'Leicestershire Vales' and 'Dunsmore and Feldon' (Countryside Character Volume 4: East Midlands⁵). The M1 Junction 19 lies on the boundary between Leicestershire Vales and Northamptonshire Uplands. The Dunsmore character area is located to the south-west of the junction. Character areas are illustrated on Figure 4.3.
- 4.4.24 The three regional landscape areas share similar characteristics and, as such, there is no clear distinction between each, particularly at the boundaries where there is a more gradual transition of landscape features. The broad characteristics of the areas can be summarised as follows:

Northamptonshire Uplands

- 4.4.25 A long range of rounded, undulating clay hills with long low ridgelines of very varied character. There are long level views across regularly bounded, hedged fields with frequent ash trees; combined with numerous small copses. Many areas have a well treed character and a remote quality.
- 4.4.26 Extensive areas of ridge and furrow and deserted settlements are a prominent feature of the landscape, and are particularly evident in low winter sun.
- 4.4.27 Settlements are often small villages of red brick or creamy grey limestone in the north of the area with pantile and tile roofs.

Leicestershire Vales

- 4.4.28 An area of gentle clay ridges and valleys with little woodland and a strong rectilinear field pattern. Hedgerows are often low and well maintained, with varying densities of hedgerow trees. Villages are often prominent and numerous, built from red or orangey-red brick. Church spires can be a prominent feature in the landscape.

Dunsmore and Feldon

- 4.4.29 Dunsmore is the northernmost of the two sub character areas. It is a transitional area and shares similar characteristics of the neighbouring Northamptonshire Uplands and Leicestershire Vales. The rolling and dissected landforms are similar to the northern

Leicestershire Vales. Plateau areas are flat and empty with long views. Field patterns are regular and large. Certain areas have a heathland character.

Local Landscape Character - County Council Assessments

- 4.4.30 Studies undertaken by Leicestershire, Northamptonshire and Warwickshire have further sub divided the broad regional character areas into either character areas, landscape zones or landscape types. The 'Leicester, Leicestershire and Rutland – Landscape and Woodland Strategy'⁶ sub divides the broader regional character area of the Leicestershire Vales into two landscape character areas; Lutterworth Lowlands and Laughton Hills. The solid geology of both areas comprises of clay, mudstone and limestone, overlain with glacial till (boulder clay). As the unconsolidated sediments of boulder clay largely cover the underlying rocks, physical features are less strong and character area boundaries therefore less distinct.
- 4.4.31 The Northamptonshire County Council study, 'Northamptonshire Current Landscape Character Assessment'⁸, identifies one landscape character type within the study area; the Broad Unwooded Vale.
- 4.4.32 The 'Warwickshire Landscape Guidelines' study¹⁰ identifies three landscape character areas that fall within the study area; High Cross Plateau, Dunsmore and Feldon. Within each, various landscape types have also been identified and these are summarised below. Areas defined in the Warwickshire study extend into Leicestershire and Northamptonshire and as such there is an 'overlap' in the landscape assessments.
- 4.4.33 The following landscape character descriptions are based on reference to the above studies. The various sub regional character areas and landscape types are illustrated on Figure 4.3. Landscape structure is further illustrated on the vertical aerial photograph sheet at Figure 4.1.

Leicestershire

Lutterworth Lowlands

- 4.4.34 This landscape character area is located to the north-west of the study area, its boundary defined by a north-east/south-west trending ridge of undulating land to the east of Shawell.
- 4.4.35 Key characteristics include:-
- A rural area and open landscape of slightly undulating, predominantly pasture farmland. Field sizes are generally medium, being regularly bounded by clipped hedgerows with decayed hedgerow trees
 - Narrow local roads are often lined both sides with clipped hedgerows and hedgerow trees, often creating strong enclosure and limiting views
 - Woodland areas are limited; tree cover is mostly provided by hedgerow trees (sometimes decayed) of oak and ash. Regenerating woodland along a dismantled railway line to the west of Shawell is locally significant
 - Shawell, and the undulating farmland to the east, has a strong sense of enclosure and small scale character
 - Sand and gravel extraction occurs in the vicinity of Shawell and is of local visual significance
 - Traffic noise from major roads and motorways is locally very intrusive

4.4.36 The landscape objective identified in the 'Leicester, Leicestershire and Rutland, Landscape and Woodland Strategy' is to conserve and enhance the rural character of the lowland agricultural landscape. Guidelines to achieve this include an increase in woodland cover (planting areas of all sizes), maintaining and strengthening existing hedgerows and increasing tree cover.

Laughton Hills

4.4.37 This landscape character area is located in the central and north-eastern part of the study area and encompasses the existing M1 Junction 19. The character area forms part of the northern extent of the Northamptonshire Uplands.

4.4.38 Key characteristics include:-

- A rural, rolling area of landscape, becoming lower and flatter where tributaries of the River Avon drain southwards from the hill ridges
- Farmland is predominantly pasture although there is a significant amount of arable land within proximity to the motorway junction. Field sizes are generally medium or small and regularly bounded by clipped or unclipped hedgerows with hedgerow trees. Field pattern is generally strong, although in certain areas in proximity to Junction 19 (to the south-east and north-west) the pattern is weaker, where hedgerows have been removed or are low, clipped and very gappy
- Narrow local roads are often lined both sides with clipped hedgerows and hedgerow trees, creating strong enclosure and limiting views
- The gently rising landscape often affords distant views to the south and the character varies from being medium/large scale and open (north of Junction 19, the M6 motorway and Catthorpe) to a smaller scale, more enclosed landscape (south and south-west of Swinford) where the strong radiating field pattern is defined by unclipped hedgerows and numerous hedgerow trees; a significant local feature that imparts a more attractive, pastoral character
- Woodland cover is generally limited; hedgerow trees (predominantly ash) mostly provide tree cover. There are significant woodland areas at Stanford Park; the parkland landscape around Stanford Hall being a feature of the area. Other woodland areas include regularly bounded mixed plantations and broadleaved woodland in the vicinity of Catthorpe and Catthorpe Manor. A dismantled railway to the south of Catthorpe supports a mature belt of trees and shrubs that is locally significant. There is a prominent woodland plantation to the north of the M6 motorway corridor, located on gently rising topography. Belts of established planting along motorway cutting and embankment slopes at Junction 19 are also locally significant
- Individual mature trees within fields near Tomley Hall Farm impart a parkland character
- Village settlements are typical
- The existing M1, M6 motorways, M1 Junction 19 and A14 Trunk Road are dominant features of the local landscape and a cause of visual disruption and noise
- The night time character of the landscape is dominated by lighting along motorway corridors and at Junction 19. Lighting is often seen above existing horizon lines. Moving vehicle lights are prominent, particularly on elevated sections of motorway embankment. Red lights on three tall masts at Rugby Radio Station punctuate the skyline to the south and are visible across a wide area
- Ridge and furrow is a feature within many fields

4.4.39 The landscape objective identified in the 'Leicester, Leicestershire and Rutland, Landscape and Woodland Strategy' is to conserve and enhance the rural character of this small upland area. Guidelines include the conservation and enhancement of the existing woodland resource, increasing woodland cover in small blocks (that reflect the existing pattern and balance of the landscape), improving the management of hedgerows and hedgerow trees, conserving existing tree cover and ensuring the long term tree cover through new hedgerow and parkland tree planting.

Northamptonshire

Broad Unwooded Vale : Vale of Rugby

4.4.40 Within Northamptonshire landscape character assessment has been under recent review as part of an overall Environmental Characterisation Project. This is an holistic approach which integrates three primary environmental aspects comprising:-

- Historic character
- Biodiversity character
- Current landscape character

4.4.41 Taken together the three underpin and inform a Countywide Environmental Character Assessment⁹. The landscape character assessment is reported in the 'Current Landscape Character Assessment'⁸ and the landscape strategy in 'Current Character Areas Strategy and Guidelines'⁷.

4.4.42 The study area falls within the Broad Unwooded Vale landscape character type located on the western perimeter of the county lying below more elevated land rising to the east.

4.4.43 Key characteristics are:-

- Extensive landscape defining the western boundary of the county
- Expansive long distance and panoramic views across the open vale landscape
- Landscape drained by numerous small watercourses that flow within shallow undulations into the rivers and streams on the county boundary
- Minor undulations gain prominence in an otherwise broad flat landscape
- Predominance of Lias Group Charmouth Mudstone and Blue Lias formation geology, which extends north and westwards and underlies much of the lowland landscapes of Dunsmore and Feldon, and the Leicestershire Vale
- Woodland cover extremely limited, with tree cover confined mainly to hedgerow trees and overgrown hedgerows
- Productive arable and pastoral farmland in generally equal proportions in fields of varying size
- Hedgerows generally low and well clipped, although limited sections show evidence of decline with a reinforcing post and wire fences
- Sparsely settled with small villages and isolated farms and dwellings prevalent, although large urban areas are evident in distant views
- Significant communication routes evident, including motorways and major 'A' roads
- Infrastructure elements such as telecommunications stations provide significant vertical elements in an otherwise flat landscape
- Recreational opportunities generally limited despite the close proximity of large urban areas

- 4.4.44 The relevant character area within this type is the Vale of Rugby. This is described as a largely flat and open landscape with expansive views. In general the area is sparsely settled, with Lilbourne and Yelvertoft as the main settlements. Urbanising influences such as major roads and Rugby Radio Station are significant in the landscape and intrusive within many views. However, despite these features a simple and unifying character prevails. Woodland cover is sparse, but there are significant areas of calcareous grassland. Heritage features include ridge and furrow.
- 4.4.45 The landscape strategy seeks to retain the quiet and simple open rural character, though it is recognised that there is potential for new infrastructure development including roads. The pattern of tree cover should be conserved and where possible enhanced. The strategy recognises that the hedgerow network is also an important characteristic of the landscape and the retention and enhancement of hedgerows to strengthen their visual contribution to the landscape as well as their biodiversity value should be encouraged
- 4.4.46 Other specific guidelines relevant to the project are:-
- Conserve opportunities to experience open vistas
 - Conserve and enhance the quality of watercourses
 - Conserve and 'gap up' hedgerows
 - Conserve and enhance woodlands
 - Seek to limit the effects of infrastructure in the wider rural landscape through sensitive siting and creative mitigation in keeping with local landscape character

Warwickshire

High Cross Plateau

- 4.4.47 This character area comprises three landscape types, two of these are located within the study area; Open Plateau and Village Farmlands (the latter not discussed as only a small area features on the western edge of the study area). The Open Plateau area extends beyond the arbitrary county boundary of Warwickshire and 'overlaps' with the Laughton Hills and Lutterworth Lowlands character areas. The broad regional characteristics are of a sparsely populated agricultural region of strong rural character with wide valleys and ridges. The Open Plateau landscape type is a large scale open, rolling landscape characterised by wide views and a strong impression of emptiness and space.
- 4.4.48 Key characteristics include:-
- A rolling plateau dissected by broad valleys
 - Poorly defined field pattern of medium to large scale
 - Sparsely populated landscape of hamlets and isolated manor farmsteads
 - Deserted mediaeval village sites, surrounded by extensive areas of 'empty' countryside
 - Pockets of pasture, often with ridge and furrow
 - Prominent woodland belts
- 4.4.49 The general landscape strategy is one of conserving and enhancing the remote rural character of the region. Within the open plateau areas the management strategy is to strengthen the structure and unity of the landscape through large scale woodland planting.

Dunsmore

4.4.50 This character area comprises of three landscape types, one of these, the Plateau Fringe, is located within the south-western study area. The broad regional characteristics are of an intensively farmed landscape, with a varied and rolling/dissected topography characterised by low glacial plateaux and incised meandering river valleys. The Plateau Fringe landscape is a variable, large scale and open farmed landscape with undulating topography and small, nucleated villages.

4.4.51 Key characteristics include:-

- An undulating topography of low, rounded hills and narrow meandering river valleys
- Large, arable fields, often with a poorly defined field pattern
- Areas of permanent pasture and smaller hedged fields, usually on steeper ground
- A nucleated settlement pattern, often comprising loose clusters of dwellings; isolated brick built farmsteads

Feldon

4.4.52 Feldon comprises most of the south-eastern part of Warwickshire with only a small part of the Feldon Vale Farmlands, south-east of Clifton Upon Dunsmore falling within the study area. This is the most typical landscape type of Feldon, an area of broad, flat low lying clay vales with few roads or settlements

4.4.53 Key characteristics include:-

- Broad flat vales with occasional small rounded hills
- A medium to large scale geometric field pattern
- Pockets of permanent pasture often with well preserved ridge and furrow
- Small nucleated villages consisting of an open cluster of farmsteads and dwellings
- Wide roadside verges banded by a thick hedge and ditch
- Deserted mediaeval village sites
- Numerous hedgerow elm stumps

Local Landscape Character – District Council Assessments

4.4.54 Recent studies undertaken by Harborough District Council and Rugby Borough Council have further developed the county assessments for Leicestershire and Warwickshire respectively. They work within the character areas already described above, but refine them further and also consider the capacity or sensitivity of the landscape to accept change.

4.4.55 Neither study makes specific reference to proposals to improve M1 Junction 19, but both identify general issues which are relevant to the consideration of the scheme

4.4.56 At the time of writing (July 2009) Daventry District Council, within Northamptonshire, have confirmed that they do not have a district level landscape character assessment.

Harborough District Council

4.4.57 The assessment is set out in Part 1 of the Harborough District Landscape Character Assessment 2007¹³. Part 2 is a Focus Areas Assessment which deals with the urban fringe of larger settlements, not affected by the M1 Junction 19 Improvement.

4.4.58 The relevant character areas remain those defined in the Leicester, Leicestershire and Rutland Landscape and Woodland Strategy⁶, as the Lutterworth lowlands and the Laughton Hills. On a local scale, the latter is more directly affected by the project. Key characteristics are as described above for the County Assessments.

4.4.59 The assessment goes on to consider each character area's capacity to accommodate change using the definition given in the Guidelines for Landscape and Visual Impact Assessment³ as:-

"The degree to which a particular landscape character type or area is able to accommodate change without unacceptable adverse effects on its character. Capacity is likely to vary according to the type and nature of change being proposed".

4.4.60 Each area is given a rating from 'High', i.e. change can be accommodated with only minor compromise, to 'Low', where development is unlikely to be accommodated without significant degradation.

4.4.61 The text below focuses on additional points of detail and analysis emerging from the new work.

Lutterworth Lowlands

4.4.62 This area to the north-west of the study area as illustrated on Figure 4.3 would only be directly affected by parts of the LRN associated with the various options. The assessment refers to the importance of Cave's Inn Pits SSSI near Shawell and to the presence of a large quarry near the village. Reference is also made to the M1 which divides the character area and which is considered to be a significant barrier across the landscape in visual, noise and connectivity terms. All of these features as described for the Lutterworth lowlands lie outside the immediate area affected by the junction improvement.

4.4.63 The capacity of the area is considered to be 'Medium' to 'High'.

4.4.64 Key issues identified which would be relevant to the assessment of the M1 Junction 19 Improvement are:-

- Proposals should be carefully assessed to avoid additional adverse or irreversible change
- Longer distance visual impacts on the landscape setting should be taken into account
- Any remaining vegetation should be protected and supplemented where possible
- Any development should preserve remaining landscape features and mitigate against adverse impacts in the wider landscape

Laughton Hills

4.4.65 As indicated on Figure 4.3, the junction lies within this area.

4.4.66 The assessment considers that mature hedgerows and woodland are likely to be of some ecological value, and identifies the Stanford Park SSSI. In heritage terms it draws attention to the mediaeval land use and settlement pattern, frequent evidence of ridge and furrow and the Registered Park and Garden at Stanford Hall. In common with the County assessment Harborough District consider that the M1, M6 and A14 significantly intrude

both visually and physically upon the local area, but do not impact on the wider extent of the character area.

4.4.67 In general the capacity of the area is considered to be 'Low' to 'Medium'. Where the area is rural there is a 'Low' capacity to accept further development. The methodology acknowledges that the quoted capacities represent an 'average' and that it is possible to identify localised variation within the character area where development could be accommodated to a greater or lesser extent than the overall rating. As above, the local impact of the existing roads at Junction 19 is acknowledged.

4.4.68 Key issues identified which would be relevant to the assessment of the M1 Junction 19 Improvement are:-

- In relation to ridgelines, even minimal development which is inappropriate or poorly sited may impact adversely on landscape character
- Woodland cover may be vulnerable to loss through inappropriate development
- Rural character would be threatened by development and any development would need careful siting which is sympathetic to landscape setting and landform in particular

Rugby Borough Council

4.4.69 The assessment is set out in the Landscape Assessment of the Borough of Rugby Sensitivity and Condition Study 2006¹⁴. The work was carried out by the Living Landscapes Project in conjunction with Warwickshire County Council and the Borough Council. Its aim was to examine the character of the landscape around the town, its sensitivity to change and the condition of the countryside abutting Rugby's urban fringe and beyond. As defined in the assessment, landscape sensitivity is a measure of the degree to which the countryside can accept change without causing irreparable, long term damage to the essential character and fabric of the landscape. In that sense it is comparable to the concept of capacity employed by Harborough District Council, except that the descriptive terms are reversed; 'High' sensitivity would be more likely to be damaged by change. The sensitivity analysis has considered both the fragility of the inherent character of the landscape and the degree of visibility, i.e. potential for visual impact.

4.4.70 Finally the assessment also considers the condition of the landscape, a measure of how far removed the landscape is from an 'optimal' state where all key characteristics are present and functional. Condition is assessed as 'strong', 'declining' or 'weak'.

4.4.71 The character areas considered are the same as those set out for Warwickshire above, the High Cross Plateau, Dunsmore and Feldon, but with one important variant. The previous areas identified in the Warwickshire Landscape Guidelines¹⁰ and illustrated on Figure 4.3 extended well beyond the County boundary into the area directly affected by the junction proposals, overlapping assessments carried out by Leicestershire and Northants.

4.4.72 The current study remains within the county boundary, i.e. to the west of the A5 and considers areas not likely to be directly or indirectly affected in landscape terms by the junction proposals.

4.4.73 The assessment concludes that all three character areas to the west of the A5 are of 'moderate' overall sensitivity with the exception of the River Avon corridor which is

considered to be 'highly' sensitive because of its ecological value. No part of the area is of 'low' sensitivity. In general the condition of the landscape is in decline and in particular it is considered that the River Avon corridor would benefit from further protection measures to ensure its long term benefit for future generations.

Summary of Landscape Character Sensitivity

4.4.74 The worksheet at Appendix A sets out the Landscape Character Sensitivity.

Biodiversity

- 4.4.75 The improvement scheme is in an agricultural area, where the existing species diversity is generally low. The majority of existing habitat in the direct vicinity of the junction includes plantation woodland, semi-improved and improved grassland, species poor hedges, scrub and drainage ditches.
- 4.4.76 Some existing habitat in the vicinity of the junction provides for or has excellent potential for use by otter, great crested newt, badger, bat and reptiles. In addition to those listed above, such habitats include mature trees, an area of broad leaved woodland, mature or diverse woodland, field ponds, important or species-rich hedges, tributary drains, brooks and the River Avon. A number of these habitats are designated as Sites of Importance for Nature Conservation (SINC).
- 4.4.77 SSSI sites, not directly affected by the junction, are at Cave's Inn Pits (Neutral Marsh) and Stanford Park (Old Parkland).
- 4.4.78 In general the habitats are considered to be commonplace and of only local importance though habitats used by protected species may be considered to be less common and of more than local importance. There would be scope to replace the lower value habitats, such as those within the junction, but older and more diverse habitats could not be readily substituted. Sensitivity is considered to be *Low / Medium*.

Cultural

- 4.4.79 The study area provides the setting for several features of cultural importance. Lilbourne Motte and Bailey castle, a Scheduled Monument (SM) and the adjacent All Saints Church (Grade 1 listed) combine to provide an attractive feature in the Avon valley close to the M1. Conservation areas at Swinford and Catthorpe with several listed buildings are part of the landscape setting for the junction. In terms of Historic Landscape Character there is evidence of historic field systems. Several areas of permanent pasture display ridge and furrow. Other field systems close to the junction have been enlarged by post war hedge removal. Wooded parkland around Stanford Hall, listed on the National Parks and Gardens register contribute to the value of the landscape east of Swinford.
- 4.4.80 The features present are not considered to be particularly rare though vary between national, regional and local scales of importance. Such cultural features cannot be substituted. Sensitivity is considered to be *Medium*.

Landcover

- 4.4.81 Settlement in the vicinity of the junction includes the villages of Lilbourne, Catthorpe, Swinford and Shawell with farm residences and associated buildings scattered amongst the surrounding landscape.

- 4.4.82 Land use surrounding the junction is a mix of pasture and arable farming largely comprising oil seed rape and cereals.
- 4.4.83 The landscape is largely enclosed by a field pattern of hedgerows scattered with mature and semi-mature trees. Field sizes vary with relatively large scale pattern around the majority of the junction aside from the north-east, around the village of Swinford, where a much smaller scale field pattern has been retained.
- 4.4.84 Mature trees are scattered throughout many fields, mainly to the west of the M1 around Catthorpe and to the south-east of Shawell within larger field patterns. A number of large mature woodlands exist which further add to the sense of enclosure, again, largely to the west of the M1 and including mature planting along the motorway boundaries.
- 4.4.85 The Woodlands in and around the junction make an important contribution to its setting and scale and local skylines. Hedgerows have a significant influence on the degree of containment scale and quality of the landscape, particularly where well treed. They define the character of the LRN and also contribute to the maturity of landscape surrounding the major roads.
- 4.4.86 The features present are commonplace, but given their contribution to the setting of the junction they are important on a local scale.
- 4.4.87 Much of the landcover could be substituted but a 30 or 50 year cycle would be required to replicate the existing scale and maturity. Sensitivity is considered to be *Medium*.

Pattern

- 4.4.88 Gently rolling and undulating farmland. The existing motorway junction and major roads are a significant element but established planting within the highway and bordering semi mature woodlands helps to integrate them into the landscape, screen the traffic and provide an important local feature. In particular the planting combines with Catthorpe Hill to screen views towards the junction from the south-west and to provide a backdrop dominating the skyline for views from the north-east. Other detractors include electricity pylons and Rugby Radio Station masts. Hedgerows with trees create the field pattern. When these are most numerous the landscape is more enclosed, smaller in scale and more attractive e.g. south and west of Swinford and east of Shawell. Landscapes to the north-west and south-east of the junction are more open. In addition to the roadside planting, there is woodland associated with Stanford Hall and Catthorpe Manor.
- 4.4.89 The features are commonplace, but given its contribution to the setting of the junction, the combination of planting and topography is particularly important at a local level. As with landcover, recent planting could be substituted over a 30 or 50 year cycle, but older hedgerows and trees could not be substituted. Sensitivity is considered to be *Medium*.

Summary

- 4.4.90 An area already affected and disturbed by major roads, but where the surrounding landscape and nearby communities are afforded protection by mature vegetation which integrates the junction into the surrounding landscape and provides screening. The character of the surrounding landscape is dependant upon the pattern of hedges and trees which, in some areas, such as south-west of Swinford, create a smaller scale more attractive landscape and help to screen the highways. There are some important habitat and cultural elements.

4.4.91 The overall Landscape Character sensitivity is considered to be *Medium*.

Visual Sensitivity

Existing Views : The General Setting

- 4.4.92 Existing views are illustrated by Figure 4.4 and a series of photographs in Appendix G. The figures and letters in brackets are the References used for the Visual Impact Plans Figures 4.6 to 4.10.
- 4.4.93 A combination of gently undulating topography, field boundary vegetation and areas of woodland copse determines the availability of views within the study area. In general, there are few significantly elevated or prominent vantage points; topographical variation is limited, with shallow slopes forming a series of subtle ridges and valleys.
- 4.4.94 Gently rising topography to the north of the study area broadly defines the River Avon corridor and limits the extent of views to the middle distance. Mature hedgerows, often unclipped and with numerous mature trees, further limits the extent of views in this direction. Hedgerow trees are a prominent feature along field and roadside boundaries to the south-west of Swinford and south-east of Shawell.
- 4.4.95 Catthorpe Hill is a shallow sloping, elevated area of land to the south-west of Junction 19. The M1/M6 motorway corridors cut into the north-eastern flank of the hill, screening views of the junction from Catthorpe. In views from the north, east and south-east, the rising ground of Catthorpe Hill and established tree and shrub planting on the upper slopes, provides a wooded backdrop to the motorway junction. There are views to the north-west from Catthorpe Hill across more open farmland and the M6 motorway corridor. Mature woodland plantations in the vicinity of Catthorpe Manor and the M1 motorway corridor limit views to the south and east.
- 4.4.96 Where there are breaks in existing vegetation there are glimpsed, distant views to the south from elevated vantage points in the vicinity of Swinford and Catthorpe. The numerous masts at Rugby Radio Station are often a significant feature in the view.

Existing Views : Topographical Horizons

- 4.4.97 Catthorpe Hill is a shallow, indistinct landform that rises up from a ridge of land at Catthorpe to its highest elevation due north of Catthorpe Manor. The landform, and associated vegetation, creates a significant local visual horizon.
- 4.4.98 Gently undulating topography and shallow ridges form other local visual horizons. These include the ridge between Swinford and Shawell and a shallow ridge that extends through Lilbourne, along the Yelvertoft Road, to form a local horizon in views south.
- 4.4.99 Sections of motorway on embankment create local visual horizons. The M1 motorway to the east and northeast of Lilbourne limits views to the east across the flat river floodplain. The section of M6 motorway on embankment to the north of Catthorpe limits the extent of views from certain sections of footpath and minor roads that are in close proximity.

Existing Views : Vegetative Horizons and Barrier

- 4.4.100 Existing vegetation has a significant role in the nature and extent of views within the study area. Vegetative horizons and barriers include the following:-

- Clipped and unclipped hedgerows with numerous mature trees to the south-west of Swinford and south-east of Shawell. The strong and largely intact field pattern in these areas, combined with topographical variation, creates significant visual screening, often limiting views to the short distance. Hedgerows adjacent to minor roads often limit the extent of views
- Mature tree and woodland planting in the vicinity of Catthorpe Manor. An extensive mixed woodland plantation (predominantly coniferous) to the east and north of Catthorpe Manor and adjacent to the M1 – M6 Northbound Link, effectively screens views towards the motorway corridor from the manor house and neighbouring residential units. Mature, deciduous woodland to the north of Catthorpe Manor and along Station Road to the south, are significant visual barriers. Woodland and plantation areas provide a strong sense of enclosure to Catthorpe Manor and associated properties, limiting the extent of most views
- A dismantled railway to the south of Catthorpe supports a belt of mature trees and shrubs that merge with riverside scrub to the east of the M1 motorway. Combined with the Catthorpe Manor plantations, this vegetation forms a significant barrier in views north from the vicinity of Lilbourne
- Woodland plantation to the south of Tomley Hall Farm. The woodland is an effective screen to certain views from the farm and from local footpaths and roads
- Well established woodland and shrub planting within the motorway corridors. Belts of planting on embankment to the north of the M6 Southbound Off Slip (to roundabout) and –6 -M1 Southbound Link are effective in filtering views towards traffic. Mature planting on cutting slopes along the M1 – M6 Northbound Link is prominent in views from the north and north-east. The planting belt filters views from Catthorpe Hill and Old Barn Farm towards the junction and associated lighting
- Mature planting along the western embankment of the M1 motorway (east of Lilbourne) is effective in filtering views of moving traffic

Views from Settlements

Shawell (A)

4.4.101 Shawell is located in a shallow north-south trending valley with land rising to a series of local ridges in the east. The location of the village, combined with field and roadside hedgerows with trees, prevents views towards the proposed scheme.

Swinford (B)

4.4.102 Existing views from the village are generally rural in character and limited in extent by rising topography to the north and north-west and abundant mature field boundary hedgerows with trees to the south and west.

4.4.103 The settlement is located on shallow, rising topography. Neighbouring buildings or mature vegetation often screen views from properties within the settlement. A limited number of properties on the outer western and southern village fringes obtain very narrow or significantly filtered and distant views towards the existing junction. There are glimpsed winter time views of moving traffic on the M1 motorway and traffic on the elevated M1 – M6 Northbound Link, M6 – M1 Southbound Link and A14. Whilst the existing motorway and junction is not a dominant component in views from the village, it is a source of visual intrusion.

4.4.104 Although some of the masts have recently been removed, transmission masts at the Rugby Radio Station remain a prominent feature on the horizon in views to the south.

- 4.4.105 Night time views are significantly influenced by road lighting within the village and along motorway corridors. There are filtered or glimpsed views towards lighting on elevated sections of the M6 - M1 Southbound Link, M1 and M6. Lighting is often seen above vegetative or topographical horizons; lit masts at Rugby Radio Station are prominent to the south.
- 4.4.106 Existing views are generally across landscapes of 'good' quality as assessed under Landscape Value below and are illustrated on Photographs 4 and 5.

Catthorpe (C)

- 4.4.107 Catthorpe is located on a shallow ridge of land that rises to the north-east to Catthorpe Hill. Views from properties within the village are generally limited; topographical variation, mature vegetation and neighbouring properties often screening views.
- 4.4.108 Views to the east and north-east of the village are limited to the short or middle distance by gradually rising topography and mature vegetation. Junction 19 and the M1 motorway corridor are not visible from the settlement.
- 4.4.109 A small number of properties to the north of the village obtain elevated views to the north across farmland. Mature trees and hedgerows limit the wider extent of the view. The southern embankment of the M6 motorway and moving traffic are clearly visible in the distance and are a significant visual detractor. Electricity lines on wooden poles are a feature in certain views.
- 4.4.110 Night time views to the north of the village are dominated by lighting and traffic movements along the M6 motorway. Lighting is clearly visible above the horizon as shown in Photograph 14.
- 4.4.111 Existing views across landscapes to the north are generally of 'good' to 'ordinary' quality and are illustrated on Photographs 3 and 7.

Lilbourne (D)

- 4.4.112 Lilbourne is located on slightly elevated land to the south of the River Avon floodplain. Intervening buildings and vegetation generally limit views from properties within the village. Properties to the north of the village, along Station Road, obtain very narrow and oblique views towards the M1 motorway on embankment. Traffic movements are generally filtered by mature tree and shrub planting along embankment and cutting slopes, although vehicle movements are slightly more apparent during winter months.
- 4.4.113 A high voltage transmission line on pylons is a source of visual intrusion to the north of Lilbourne.
- 4.4.114 Rear elevations of properties to the east of the settlement orientate towards the M1 motorway corridor. In general, tall garden boundary fences or hedgerows screen ground floor views. Where lower floor views are obtained, they are of short distance, across a narrow field to mature planting on the western cutting slope of the motorway. Similar views are obtained from a community hall (and associated recreation ground) to the east of the village.
- 4.4.115 A belt of recently established mixed woodland planting, with evergreen species, is located adjacent to the M1 corridor to the east of the village. This is further supplemented by

planting within established highway woodland. Continued development of this planting would enhance the screening effect of established woodland.

4.4.116 Night time views to the north-east of the village are significantly influenced by lighting along the M1 motorway, lighting being clearly visible above woodland planting on embankment slopes. There are filtered views through mature woodland planting to motorway lighting to the east of the village.

4.4.117 Existing views across landscapes are generally of 'good' to 'ordinary' quality.

Views from Individual Properties

4.4.118 There are numerous individual properties throughout the study area, some located in close proximity to the existing junction and motorway corridors.

4.4.119 Individual properties with existing views of the junction and potentially subject to visual impact are shown on Figures 4.6 to 4.10. The numbers in brackets are the reference numbers used in the plans and schedules.

4.4.120 Tomley Hall Farm (3), to the north of the M6 motorway, has a relatively open view to the south across arable farmland with views of traffic on the elevated section of the motorway.

4.4.121 There are two properties to the north-east of the junction; Westfield Lodge (7) and Brookside (8). Views towards the junction from the rear elevation of Westfield Lodge are significantly screened or filtered by well established garden and intervening field boundary vegetation. There are views to the upper sections of lighting columns. Views to the west from the outer garden area of the property are across fields towards the junction. Boundary trees, hedges and established planting within the highway filter views to traffic movements on the A14 and M6 - M1 Southbound Link. Traffic movements on the eastern roundabout are a notable source of intrusion, particularly during winter.

4.4.122 Views towards the junction from property Brookside (8) are possible from ground floor windows and the garden area. Views towards traffic are filtered by intervening vegetation although vehicle movements are a significant source of intrusion, particularly during wintertime. Lighting columns are clearly visible above the horizon.

4.4.123 Old Barn Farm (9) is located close to the south-west of the junction in an elevated location on Catthorpe Hill. Neighbouring buildings and tree and shrub vegetation limits views from the property. Dense planting on motorway cutting slopes provides an effective filter to views towards the junction. The setting of this farm is illustrated on Photograph 6.

Views from Other Locations

4.4.124 There is an extensive network of public rights of way and narrow, local roads within the study area. The existing routes are indicated on Figure C the Environmental Resources Plan, included in Appendix 1 to Volume 1 of the ES. Existing vegetation cover and topographical features determine the nature and extent of views from these locations. Field hedgerows and mature hedgerow trees often significantly filter views from footpaths. Sections of footpath that traverse rising topography often obtain slightly elevated views towards motorway traffic.

4.4.125 The Motte and Bailey castle (Scheduled Monument) at Lilbourne is evident by steeply hummocky landforms and has a relatively open setting within pasture fields (Photograph 8). Access to the site is via permissive paths. The M1 motorway on embankment is

located to the east of the site and limits the extent of views in this direction. Dense highway tree and shrub planting on the western embankment significantly filters views of motorway traffic. Mature trees to the south and south-west, and All Saints Church, enhance the setting of the archaeological site although this is compromised by an electricity transmission line to the north.

4.4.126 At Lilbourne there is a community facility comprising a village hall, children's playground and recreational ground situated on high ground between the eastern edge of the village and the M1. Recent planting adjacent to the motorway will help to protect this area, combined with existing motorway planting but there are clear views to the north towards the M1 crossing the Avon valley and Junction 19.

Visual Detractors

4.4.127 There are some significant visual detractors within the study area. Those identified include the following:-

- the M6 and M1 Motorways, A14 road corridor, elevated bridge structures and the road network at Junction 19. Typical views are of cutting and embankment slopes, often supporting established trees and shrubs. The main source of visual intrusion is from moving traffic, particularly high sided vehicles. Night time lighting along the highways is a significant source of local visual intrusion as shown on Photographs 9 to 12
- two high voltage transmission lines on pylons; one crosses the M1 motorway to the north of Lilbourne and another is located to the east of Swinford
- the numerous tall transmission masts at the Rugby Radio Station are often clearly visible above the horizon in views to the south
- the property known as Stonebank to the west of the M1 which was formerly a works area and borrow pit. In recent times it has been an animal sanctuary and is a collection of outbuildings and caravans.

Summary of Visual Sensitivity

4.4.128 The worksheet at Appendix B sets out the visual sensitivity.

General Visibility

4.4.129 Given the gently undulating topography there are views across the landscape towards the junction from higher points such as the ridgeline to the east of Shawell, from Swinford and Catthorpe. Views are particularly extensive from the lower ground formed by the River Avon to the east, for example from the A14 corridor itself. There are also longer distance views across the Avon valley from the south, in the Lilbourne area.

4.4.130 Existing vegetation helps to contain views from Swinford, where good hedgerows filter longer distance views. In particular Catthorpe Hill and its associated woodland creates a skyline to limit views to the south-west, but at the same time provides an important backdrop providing a feature that puts the junction and the potential new works in scale with its surroundings.

4.4.131 The sensitivity for general visibility is considered to be *Medium*.

Receptors

- 4.4.132 Within the area of general visibility there are many receptors that would be potentially affected, i.e. those with views of the existing junction including approximately 75 dwellings.
- 4.4.133 There is also a network of public rights of way (PRoW) in the area and 15 separate footpaths and bridleways would be potentially affected.
- 4.4.134 Views from properties are considered to be of *High* sensitivity and those from other viewpoints as *Medium*.

Mitigation Potential

- 4.4.135 As demonstrated by the existing junction where mature vegetation provides effective screening for earthworks and traffic, there are possible opportunities within the 15 year period assessed to provide adequate mitigation for adverse impacts using measures such as new woodland planting within the highway reinforced with false cuttings and boundary features such as hedges.
- 4.4.136 Given the topography, opportunities for offsite planting are considered to be limited.
- 4.4.137 Given the mitigation potential, the sensitivity is considered to be *Medium*.

Summary

- 4.4.138 The removal of substantial areas of existing mature vegetation, to the east of the M1 and A14, and to the north of the M6, would result in an increase in clear views of traffic and structures within the junction and along approaching roads / motorways. However, due to the limited nature of views from the main villages of Swinford, Catthorpe, Lilbourne and Shawell, the impact of the clearer views would be limited to key locations and viewpoints. Opportunities to mitigate this loss would reduce the impact of the junction improvements and may provide an improvement in views from some key viewpoints in the long term.
- 4.4.139 The overall visual sensitivity is considered to be *Medium*.

Landscape Value

- 4.4.140 This part of the assessment considers the aesthetic qualities of the landscape including areas which may be designated for their beauty, the areas scenic value as assessed by the DMRB methodology and its relative tranquillity.

Landscape Designations

- 4.4.141 Stanford Park is a Registered Park and Garden and is considered to be important at a National level. The designated area is identified on Figure C, the Environmental Resources Plan in Appendix 1 to Volume 1 of the ES.

Scenic Value

- 4.4.142 References have already been made to some of the visual detractors in the area. Clearly the presence of a motorway junction and major roads within the study area is a significant element in the landscape. Although well established planting within the highways and

bordering semi-mature woodlands helps to integrate them into the landscape and screen the traffic, the presence of the junction has an adverse effect on the quality of landscape.

- 4.4.143 This is recognised for example in Harborough District Councils Landscape Capacity Study¹³ which recognises that the M1, M6 and A14 significantly intrude, both visually and physically upon the local area, but not the wider extent of the character area.
- 4.4.144 In terms of landscape quality the existing landscape is characterised by gently rolling farmland of 'good' to 'ordinary' quality as defined by the DMRB criteria set out in Appendix B. 'Good' pockets of landscape occur where the combination of undulating topography and a stronger hedgerow pattern with more field trees creates a more enclosed pastoral landscape of smaller scale which reduces the influence of the neighbouring transport network. Such areas include:-
- landscape in proximity to Swinford, particularly to the south-west of the village where the strong pattern of unclipped hedgerows and hedgerow trees creates a pastoral scene
 - areas between Shawell and the M6 motorway corridor to the south-east where a strong hedgerow field pattern and narrow, hedged roads with hedgerow trees are prevalent
 - an area to the south and west of Tomley Hall Farm where individual mature field trees impart a 'parkland' character
 - landscape to the north of Lilbourne (in proximity to the River Avon corridor), contained by rising ground to the north and west and areas of woodland; the distinctive Motte and Bailey landform is a focal point of this area

Tranquillity

- 4.4.145 The existing heavily trafficked junction means that the general study area is not tranquil, though some of the more enclosed smaller scale landscapes, those described as 'good' landscapes above can be considered to be relatively tranquil, dependant upon the prevailing wind direction.
- 4.4.146 Nor can the landscape be described as remote, wild or isolated given the physical presence of the junction with its lighting, traffic and signage.

Summary of Landscape Value

- 4.4.147 The worksheet at Appendix C sets out the scenic value.

Designations

- 4.4.148 There is no designation to the area immediately surrounding the junction but Stanford Park to the east of the junction is listed on the national parks and gardens register and is important to a national level. The setting of the park is affected to some degree by the existing A14 and highway lighting at the junction and along the M1, although tree belts to the south of the park provide some protection.
- 4.4.149 Sensitivity is considered to be *Medium*.

Scenic Value

4.4.150 Areas of 'good' to 'ordinary' landscape are adversely affected by the presence of the existing junction.

4.4.151 Sensitivity is considered to be *low*.

Tranquillity

4.4.152 As described above, the area is not tranquil at present. Sensitivity is considered to be *Low*.

Summary

4.4.153 The area is already affected and disturbed by major roads. Although there are some areas of good landscape, particularly where a strong hedgerow pattern helps to screen longer distance views, the general sensitivity in terms of landscape value is considered to be *Low*.

Summary of Overall Landscape Sensitivity and Capacity

4.4.154 As set out in the methodology described at Section 4.2, Overall Landscape Sensitivity has been derived by combining visual sensitivity and landscape character sensitivity, using the matrix at Appendix F. Given *Medium* visual sensitivity and *Medium* landscape character sensitivity the overall landscape sensitivity is considered to be *Medium*.

4.4.155 Taking the *Low* landscape value into consideration the Capacity of the landscape within the study area is regarded as *Medium*.

Page Not Used

4.5 MITIGATION

- 4.5.1 The measures described below are regarded as an integral part of the project design and appropriate powers under the Highways Act including compulsory purchase are being used to ensure that the measures can be implemented. Exceptionally some proposals could only be carried out with the agreement of landowners, including offsite planting under Section 253 of the Highways Act and hedgerows along the Local Road Network, which would be planted for landowners as part of their accommodation works. Such measures are not taken into account in assessing the landscape impact in Section 4.6.
- 4.5.2 The mitigation measures designed to offset or reduce the impact of the scheme upon the landscape are outlined below. They are illustrated on Figure B, the Environmental Master Plan and by the cross sections at Figure H and photomontages all in Appendix 1 to Volume 1 of the ES.
- 4.5.3 The growth of proposed planting shown on the plan is the main consideration to be taken into account when assessing the effect of these mitigation measures. As screen planting is not sufficiently effective in Year 0, to fulfil any function in reducing visual impact, the assessment takes mitigation planting into consideration in Year 15 and assumes no mitigation in the opening Year 0. A conservative estimate of the growth of trees over this period would be a minimum of 30cm each year, resulting in a minimum height of 4.5m by the 15th year and this is the assumption used in the environmental assessment. Some of the faster growing tree species would be likely to exceed this figure, possibly reaching 6m over 15 years. These heights are also used for the cross sections and photomontages.

Aims of the Landscape Proposals

- 4.5.4 The aims of the landscape proposals are to:-
- Integrate the project into its setting by replacing the loss of landscape features such as hedgerows and woodland, including the vegetation within the existing highway. Species already growing in the area would be selected to ensure that the new planting would blend in with the old
 - Minimise the visual impact of the proposals on dwellings, public rights of way and other public areas, where possible taking steps to improve upon the existing situation
 - Comply with and support landscape management strategies set by the local authorities for the landscape character areas described in Section 4.4
 - Enhance the landscape within the road corridor for the benefit of road users
 - Provide value for nature conservation, for example by providing woodland of native species, mixed species hedgerows and species rich grasslands and wetlands. To provide the best potential for nature conservation woodland and hedgerow planting stock would be grown from local provenance seed as defined by the Forestry Commission (Forestry Commission seed zones 402 and 403). A commitment has been given to Natural England, arising from consultations, that seed from local sources would be used to grow the stock required for the scheme wherever possible.

Typical Measures

4.5.5 Typical measure shown on the Environmental Master Plan include:-

- Woodland and shrub planting within the highway boundary. This would be varied in character to provide visual interest and diversity and would include 'high forest' to provide landmarks, 'woodland', 'woodland edge', as well as contrasting areas of shrubs and more open scattered tree planting. As described above it would consist of largely deciduous native species. The planting stock would mainly consist of small forest transplants between 45 and 90cm high planted at close centres of between 1 and 2m. This stock is used because it would establish more readily and grow at a faster rate than large specimens. For the most part tree and shrub species would be combined to ensure that a dense thicket can be provided as a screen even during the winter months which is assumed as the main basis of the landscape assessment. Such dense woodland and shrub planting would be deployed as a screen to protect views, or to blend with surrounding areas of woodland. Typically this would be to the outside edges of the junction with central parts of the junction left more open. The objective of this is to contrast with the more heavily planted areas and to provide travellers with space and an appreciation of the junction layout. A more open landscape in the centre would also allow the open spans of proposed viaducts to remain visible to travellers without prejudicing the screen planting for communities and landscape on the outside
- Boundary hedgerows, to integrate with the surrounding field pattern or to provide additional protection to adjacent features such as bridleways. Several would be planted within the motorway. In addition, with the agreement of landowners it is anticipated that hedges would also be planted in the boundary of other roads, such as the proposed Local Road Network (LRN). As they would be subject to agreement as accommodation works, they have not been taken into account in the assessment
- Large areas of species rich grassland where wildflowers could be established on low fertility soils, providing visual interest and nature conservation value
- Drainage ponds designed to provide pollution and flood control for road run-off which would also provide habitat of some conservation value
- Earth mounding and shaping where appropriate to help screen views and to provide additional height to screen planting

4.5.6 Key areas of essential mitigation are as follows:-

- In the north-east quadrant dense planting augmented by mounding and earth shaping is proposed to help screen views from Swinford, outlying properties and public rights of way and to replace the loss of mature planting. The planting is proposed on the embankments of the higher sections of the M1 – A14 Eastbound Link which reach a maximum height of 8 metres, and then extends along the link as it merges with the A14 at ground level. Two metre high mounding is proposed over this section to provide initial screening and to ensure the effectiveness of vegetation removed from the junction along the A14 can be restored as quickly as possible. The planting and mounding combined would also help to screen the higher level viaduct of the A14 – M1 Northbound Link, The approach embankment to this viaduct is similarly mounded and planted on the Swinford side.
- A strip of dense planting is proposed between the M6 – M1 Southbound Link and the LRN where they run closely parallel to the south of Tomley Hall Farm. This planting is intended to replace a well established woodland belt adjacent to the M6 which presently provides a screen for Tomley Hall Farm and public rights of way to the north, but which would need to be completely removed to construct the project. It

would also provide an appropriate separation between the strategic highway and users of the LRN including vulnerable users. Mounding to a maximum height of two metres is also proposed to provide an instant effect and greater height to the planting as it establishes.

- Woodland planting would also be provided for the new earthworks to the new Shawell Road overbridge, replacing the vegetation lost.

4.5.7 Where necessary land has been included in the draft Compulsory Purchase Orders for the project to ensure that this mitigation can be carried out.

4.5.8 Care has been taken in the design and alignment of the LRN to respect the character of the landscape and the existing country lanes. The width has been limited to 6m, generally with 2m wide verges, and the alignments have been designed to make the best use of existing hedgerows. In general the existing hedge has been retained on one side where the alignment follows the existing road.

4.5.9 Typical measures shown on the Environmental Master Plan for the LRN include:-

- Species rich hedgerows on new boundaries where agreed with landowners as accommodation works
- Species rich grasslands on earthworks

4.5.10 As set out in Chapter 7 Effects on All Travellers, the LRN also provides a facility for vulnerable users. The section between Swinford and Catthorpe through the junction has a widened verge. Beyond the junction a footway is proposed within the verge of the existing road to Swinford and Catthorpe respectively. The LRN to the north of the M6, also has a widened verge on the north side between the Junction and Bridleway X14.

Off-site Planting

4.5.11 In addition to the planting shown on the Environmental Master Plan it would also be possible to carry out off-site planting with the agreement of landowners. Such planting can have benefits for individual landowners in that it can provide more effective screening and be carried out in advance of the main planting on site. It would be carried out under Section 253 of the Highways Act 1980. As it is subject to agreement, it is not shown on the plan and is not relied upon as mitigation for the landscape assessment.

4.5.12 To meet the commitment made to the Parish Councils, offsite planting has been discussed with landowners at a series of meetings held in June and July 2009. No landowners have yet committed themselves to offsite planting, though some have indicated that they would like to consider proposals at a later stage of the project. Further consultation would take place in advance of construction.

Mitigation for The Catthorpe Viaduct Replacement

4.5.13 As noted in the introduction the CVR is the subject of a separate assessment but also discussed in this ES in relation to the M1 Junction 19 EIA.

4.5.14 Typical measure shown on the Figure 2 Environmental Master Plan for the Catthorpe Viaduct Replacement Environmental Assessment (Screening) Report include:-

- Woodland and shrub planting within the highway boundary

- Areas of species rich grassland where wildflowers could be established on low fertility soils, providing visual interest and nature conservation value
- Both as discussed above for the M1 Junction 19 Improvement

4.5.15 Key areas of essential mitigation are as follows:-

- A strip of dense planting, and a scattering of individual larger sized trees either side of the viaduct earthwork is proposed to augment and improve the amenity and nature conservation value of existing planting
- Replacement of existing open grass with species rich grassland on lower fertility soils on land between the CVR and M1(S).
- Reinstatement of carriageway left by removal of existing viaduct as species rich grassland
- Reinstatement and improvement of existing area of semi-improved grassland to area between CVR and M1 to M6 link road with similar species rich grassland where possible

4.6 ENVIRONMENTAL IMPACT

Description of the Proposals

- 4.6.1 The engineering proposals are shown on the Environmental Master Plan at Figure B together with the mitigation measures. The cross sections at Figure H, in Appendix 1 to Volume 1 of the ES, illustrate the levels of the various features of the junction and the proposed planting after 15 years of growth. Figure 4.5 illustrates the areas of existing woodland and hedges lost to the proposals and provides a comparison with areas of new planting. Figure G, also in Appendix 1 to Volume 1 of the ES, illustrates areas required during the construction of the project on a temporary basis including site compounds, storage areas, temporary haul routes and temporary road diversions.
- 4.6.2 The junction would be constructed on three levels and would be similar in height to the existing junction. It would provide free flow links between M6 and A14, between M6 and M1 south of the junction and between A14 and M1 north of the junction, all in both directions. Movement between M6 and M1 north of the junction and between A14 and M1 south of the junction would not be provided.
- 4.6.3 The layout would comprise the following main features as illustrated on the Environmental Master Plan Figure B:-
- At the lowest level, Level 0, a new link connecting the M6 motorway directly to the A14 Trunk Road, underneath the M1. The standard of this link would vary between dual three lane motorway at the western end to merge with M6 and dual two lane all purpose at the eastern end to merge with A14. The central section through the junction would be dual two lane motorway but with widened verges and structures to accommodate future widening to dual three lane all purpose highway.
 - At level 1, M1 motorway retained in its current position and returned to three lanes in both directions at Level 2, a realigned link connecting the M6 to the M1 southbound and a new link connecting A14 with M1 northbound. Both links would be two lane carriageways with hard shoulders and would be the highest part of the scheme, at the same level over M1 as the existing M6 - M1 Southbound Link. (This is the description of the CVR section which will be carried out as a maintenance project). The A14 - M1 Northbound Link would require a new flyover approximately 270m long. The M6 – M1 Southbound Link would replace the existing structure with a new bridge 80m long, together with a new viaduct over the M6 – A14 Link of 208m.
 - A new link road connecting M1 with A14 Eastbound
 - The existing M1 – M6 Northbound Link retained
 - An LRN providing direct links from Rugby Road, Swinford to Catthorpe Road, Shawell, and via a 'T' junction to Swinford Road, Catthorpe, using a series of bridges below the main junction links
- 4.6.4 In addition to these a number of minor link roads would be provided for the use of emergency and maintenance vehicles only. Other features to be included are drainage ponds, lighting, signs and gantries and routes for vulnerable users.
- 4.6.5 The following section provides a description of the proposals, sub-divided into the following sections:-
- Highways
 - Structures
 - Other features

- Proposals for vulnerable users
- Land required for construction

Highways

M6 – M1 Motorway Links

- 4.6.6 The proposals would not require a realignment of the existing M1 – M6 Northbound Link, except for the final merge with M6 where minor amendments would be required.
- 4.6.7 This means that significant impacts in the south-west quadrant of the scheme, i.e. to Lilbourne, Catthorpe Manor and Old Barn Farm can be avoided. As shown on Figure 4.5 all the woodland to the west of M1 and the link, which creates a wooded backdrop to the junction, viewed from the north-east could be retained. There would be no requirement for a new River Avon bridge.
- 4.6.8 With the exception of an emergency access road, no works would be required to the existing M6 embankments on the northbound side enabling existing planting to be retained. Further new planting would be added to these embankments.
- 4.6.9 For the M6 – M1 Southbound Link, (the CVR) realignment would be required to cross the M6 – A14 Link and so that the existing bridge could be reconstructed offline, but its maximum level would remain only slightly higher than that of the existing link. The link would diverge from M6 approximately 500m west of the Shawell Lane underbridge crossing farmland to the north of the motorway on embankment at a similar level to the existing link. It would then cross the LRN and M6 – A14 Link on a 270m long viaduct at 124m above Ordnance Datum (AOD), before crossing M1 just to the south-west of the existing bridge.
- 4.6.10 Well established dense tree and shrub planting on the existing embankment slopes both adjacent to the existing M6 – A14 slip road and approaching the bridge over M1 would be removed, but replaced with new planting including earth shaping to provide additional height where indicated on Figure B, included in Appendix 1 to Volume 1 of the ES.
- 4.6.11 East of M1, much of the existing planting associated with the existing M6 – M1 Southbound Link would be retained.

M6 – A14 Link

- 4.6.12 The M6 – A14 Link would begin at the Shawell Lane underbridge, at first remaining at a similar level to the existing motorway before passing under the M1 in a cutting reaching a maximum depth of 11 metres immediately to the east of the M1. The cutting and associated bridge below the M1 would result in the loss of established planting on the M1 embankments. It would then merge with the A14 to the west of the existing River Avon bridge, remaining close to existing ground level. However, its alignment combined with the slip road joining from the M1 to the north would extend into the fields to the north-east of the existing A14, impacting upon existing field boundaries and roadside hedgerows to a point 230 metres west of the Avon bridge.

M1 Motorway

- 4.6.13 The M1 motorway would be retained on its current alignment. As described below, north of the M6 – A14 Link, existing hedges would be affected by the merge and diverge with

the free flow A14 – M1 links to each side. The merge and diverge would require replacement of the existing Shawell Road bridge over M1. The proposal here is to construct the new bridge offline, to the north of the existing. This would enable existing vegetation on the approach embankments to be retrained on the south side.

- 4.6.14 To the south of these links, the M1 corridor would remain unchanged with no impact to either side.

M1 – A14 Links

- 4.6.15 The alignment of the A14 – M1 Northbound Link begins to divert from A14 approximately 40m west of the River Avon crossing. The link would cross the open farmland to the south of A14 rising on to an embankment approximately 5m high before bridging over the M1 on a viaduct approximately 270m long, adjacent to and at a similar level to the existing M6 – M1 Southbound Link at 123 AOD. Given the proximity of these two structures and the opposing traffic flows it is possible that screening may need to be provided in the form of a solid parapet to avoid conflicting headlight glare. New planting would be provided on the embankment slopes facing Swinford to the north-east with earth shaping added to provide additional height and more effective screening of traffic.
- 4.6.16 The new viaduct would also cross the M6 – A14 Link before merging with the M1 northbound carriageway. The loss of boundary hedges at this point would be replaced with new hedges and planting on the embankment slopes.
- 4.6.17 The M1 – A14 Eastbound Link would diverge from M1 at first at a similar level to the existing M1 Southbound Off-Slip, though existing boundary hedges would be lost and would need to be replaced.
- 4.6.18 The link would then rise on to an embankment, crossing the Rugby Road LRN on an 8m high embankment before merging with A14 in a cutting between 1 – 2 metres deep. As described in Section 4.5 Mitigation, dense planting combined with mounding is proposed to help screen views from Swinford and the network of public rights of way to the north and east.

Local Road Network

- 4.6.19 To fit in, as far as possible, with the character of other local roads in the area, the standard of construction for the LRN would be a 6 metre carriageway with a minimum of 2m verges to either side. Where necessary to accommodate vulnerable users, these verges would be widened to 3m where no footway is provided and 4m where a 1.5m footway is provided.
- 4.6.20 Provision would also be made for 2 metre wide hardened verges on either side of the LRN though the various structures, to accommodate vulnerable users and as illustrated on Figure B, included in Appendix 1 to Volume 1 of the ES, a tarmac footway between 1.5 and 1.2 metres wide is proposed between Swinford and Catthorpe.
- 4.6.21 The LRN consists of two main components:-
- A direct link between Rugby Road, Swinford and Catthorpe Road, Shawell. From east to west this would first cross underneath the proposed M1 – A14 Eastbound Link which would be raised to 8m above ground. It would then cross under the M1 using the existing underbridge, as well as the A14 – M1 Northbound Link on its high flyover. The route then runs parallel to the M6 embankment, partly utilising land required for a

temporary haul road in any event, before merging with the existing Shawell Lane near its underbridge below M6. As described above planting and earth shaping is proposed to create positive separation between the LRN and motorway. The LRN would then require an improvement to Shawell Lane / Catthorpe Road west towards A5. In designing this section the objective has been to retain the existing hedgerow and trees on one side. A replacement hedgerow on the opposite side would be provided as accommodation works with the agreement of the landowners. A small area of severed land at the junction between Shawell Lane and Catthorpe Road would be retained for habitat creation.

- The link to Catthorpe village would be provided from a 'T' junction with the above road, passing below the M6 – A14 Link and the M1 – M6 Northbound Link in a cutting, to merge with Swinford Road, Catthorpe

Structures

4.6.22 The project has a high structural content requiring the following bridges and viaducts:-

- M1 over M6 - A14 Link
- A14 - M1 Northbound Link Flyover
- M6-M1 Southbound Link over the M6 - A14 Link
- M6 - M1 Southbound Link over M1
- Shawell Road over M1
- M6 over Shawell Lane
- M1 over Local Link Road
- M1- A14 Eastbound Link over Local Link Road (Rugby Road)
- M6–A14 Link over Swinford Road
- M1–M6 Northbound Link over Swinford Road

4.6.23 Those most likely to be visible from the wider area would be the higher level viaducts, the A14 – M1 Northbound Link flyover and the two major structures associated with the M6 - M1 Southbound Link over the M6 – A14 Link and M1 respectively.

4.6.24 A similar approach has been taken to the design of these structures to provide a consistent, unified appearance.

4.6.25 Typical illustrations of the viaducts as computer aided perspectives are included in Appendix 1 to Volume 1 of the ES, the main elements are:-

- Vertical concrete abutment walls to the full height of the structure would generally be required
- Supporting piers would be triple columns
- The decks would be supported by beams constructed from weathering steel which is unpainted, but develops its own protective coating of iron oxide. The colour would vary between a red orange to a darker purple brown, dependant upon time and local weather conditions
- The darker beams would contrast with a light coloured concrete deck fascia above.

4.6.26 For vulnerable users and local drivers on the LRN there would be a sequence of underbridges on the direct link between Swinford and Catthorpe, including the existing bridge below M1 which would be re-used, a structure of similar length below M6-A14 Link, shorter bridges below the M1 - A14 Eastbound Link and the M1 – M6 Northbound Link, as well as the two higher level viaducts described above.

- 4.6.27 In general these bridges would be at a lower level and would not be so widely visible. The most noticeable would be the M1 – A14 Eastbound Link over Rugby Road, which given its height at 8 metres above ground, would be visible from the north-east.
- 4.6.28 Their designs would vary according to structural requirements but incorporate concrete walls, with weathering steel or concrete beams. Walls associated with the M1 – A14 Eastbound Link over Rugby Road would be clad in pre-cast concrete panels. Elsewhere solid concrete walls would be detailed with a feature finish yet to be decided. All are sufficiently wide to accommodate 2m verges to either side for vulnerable users.

Other Features

Lighting

- 4.6.29 All new sections of the junction would be lit using flat glass luminaires mounted on 15 metre high columns. For new sections of dual carriageway such as the M6 – A14 link, it is anticipated that these would be mounted in the central reservation on a concrete barrier though this will remain under review. Column spacing would vary between 34m and 54m.
- 4.6.30 Flat glass luminaires provide the optimum cut-off of the light source, minimising light spillage to the surrounding area. They would be similar to those already provided along the A14 and in parts of the existing junction. Existing lighting within the central reservation of the M1 would be retained. All lighting would be “high pressure sodium”, which gives true colour rendering.
- 4.6.31 Lighting is not proposed for the LRN.
- 4.6.32 In general terms, as the existing junction is lit the proposed lighting would not add significantly to the scale of lighting in the area, though the number of columns would increase given the additional carriageways. The exception to this general principle is along the M6 – A14 Link where lighting would need to be extended to east of the River Avon bridge to cover the merges and diverges of the proposed slip roads.

Signs and Gantries

- 4.6.33 Several signs and gantries would be needed on the approaches to the junction and their locations are indicated on the Environmental Master Plan Figure B, included in Appendix 1 to Volume 1 of the ES, and on the series of visual impact plans Figures 4.6 to 4.10. In all, 17 gantries would be required set at a minimum height of 5.7m above the carriageway. Their overall height as seen in the landscape would vary in relation to the signs placed upon them, but the maximum would be approximately 12 metres. It is also anticipated that six new cantilevered Variable Message Signs (VMS) would be required in addition to five existing VMS that would be retained. The overall height of the VMS would be approximately nine metres. Typical elevations of the VMS and gantries are included in Appendix 1 to Volume 1 of the ES. It should be noted that some of the gantries and VMS are remote from the junction itself, but have been included in the assessment. 14 existing VMS and four gantries would be removed.

Drainage Ponds

- 4.6.34 Five drainage ponds are proposed as part of the project to deal with run-off from the road surface and to deal with potential pollution and flooding impacts.

4.6.35 The design and function of these ponds is dealt with in detail in Chapter 9, Road Drainage and the Water Environment. In terms of their appearance they are shaped to look like natural water bodies with irregular outlines and gentle side slopes, incorporating reeds and aquatic plants. Access tracks would be required across agricultural land to manage ponds DP6, DP3 and DP7, as shown on the Environmental Master Plan.

Proposals For Vulnerable Users

4.6.36 Proposals for vulnerable users are covered in detail in Chapter 7, Effects on All Travellers, which also deals with the amenity effects for users. Provision within the LRN, including a footway between Swinford and Catthorpe has been described above.

4.6.37 Measures also include the provision of a new bridleway route adjacent to River Avon designed to replace two existing footpaths X7 and X8 and one existing bridleway X12 which would need to be closed to accommodate the junction improvement. As noted on the Environmental Master Plan this new route would be 'surfaced', i.e. it would have a stone foundation, but blinded over by soil to provide a green surface. It would be three metres wide and would require two new bridleway bridges over the river. The new bridleway would also be accompanied by some habitat enhancement works along the river itself, designed to mitigate the potential disturbance for otters using the river. This issue is dealt with in Chapter 3, Ecology and Nature Conservation.

4.6.38 At its western end the bridleway would connect to existing bridleway X13 and Station Road Lilbourne via a section of dismantled railway. At its northern end the bridleway would connect to the existing network via footpath X6 which would be upgraded to bridleway status. It would also connect to a diversion of footpath X8 following the boundary of the A14 with an extension across the fields to connect to the bridleway bridge.

4.6.39 In terms of the visual impact assessment below it should be noted that only impacts on the views from public rights of way that would be retained by the proposals have been recorded, that is the change before and after the junction improvement. Changes in amenity resulting from the use of routes which have changed are dealt with in Chapter 7, Effects on All Travellers.

Land Required for Construction

4.6.40 These areas would be required temporarily during the construction works and those outside the permanent footprint of the project would be restored after use. With the exception of the site compounds, the areas are included in the draft Orders for the project. They are shown on Figure G in Appendix 1 to Volume 1 of the ES. In general restoration would require their return to agricultural use. The implications of the temporary loss of such land for agriculture is covered in Chapter 8, Community and Private Assets and the measures used to achieve restoration are covered in Chapter 5, Materials. Figure G, included in Appendix 1 to Volume 1 of the ES, also indicates some construction features such as storage areas, temporary haul routes and road diversions that would take place on land retained after construction. It also shows the drainage ponds referred to above, since these would be constructed at an early stage where possible to provide protection from construction run-off. The exception to this is pond DP2b, where a pond in a temporary location would be required.

Haul Routes

- 4.6.41 Temporary land is required for 10 metre wide haul routes for use by the Contractor's plant and machinery, in the north-east quadrant between Shawell Road and Rugby Road and in the south-west quadrant between Old Barn Farm and Swinford Road. A short section is also required adjacent to the north side of the M6, west of Shawell Lane.
- 4.6.42 The section in the south-west quadrant would require the removal of some woodland and this would be replaced with new planting upon completion. Other sections would be restored to their former agricultural use.

Contractors Compound

- 4.6.43 Figure G, included in Appendix 1 to Volume 1 of the ES, indicates the location of the site compound, to the east of M1 on agricultural land adjacent to Rugby Road. The compound area has been included in the draft Orders for the project and occupies an area of about 1.5 hectares,
- 4.6.44 The compound area would be temporarily developed with office accommodation, workshops, car parking, plant, materials and fuel storage resulting in some temporary visual impact as described below. Areas not required for permanent land take would be restored to agricultural use upon completion. Existing boundary hedges would be retained and protected during the construction period.

Storage Areas

- 4.6.45 As shown on Figure G, included in Appendix 1 to Volume 1 of the ES, other areas of land would be required for the temporary storage of soils and as construction laydown areas in particular for bridge construction. Several areas including access to the River Avon for bridge construction and bridleway works, are identified.

Flood Compensation Areas

- 4.6.46 Works to the M6 – A14 Link would require land within the existing River Avon flood plain. The extent of the flood plain is shown on Figure C, the Environmental Resources Plan in Appendix 1 to Volume 1 of the ES.
- 4.6.47 As compensation some land at appropriate locations within or adjacent to the flood plain would need to be reduced in level. Some of this would be used for habitat creation, the remainder would be restored to agricultural use.

Impact on Landscape Character Sensitivity

Introduction

- 4.6.48 The landscape character of the study area, taking into account the various assessments carried out by the respective County and District Councils, described in Section 4.4, is set out in the worksheet at Appendix A. Its sensitivity is defined in section 4.4.
- 4.6.49 This section considers the magnitude of the impact for two scenarios:-
- Year 0, at the scheme opening. The impact described is before mitigation measures such as planting can have taken effect, and when features lost during the

construction stage have not been replaced. The impact of construction works is also considered and it is assumed that the site compound would still be in use.

- Year 15 when the scheme has been operational for several years, mitigation measures are establishing and any restoration / habitat creation measure have taken effect.

4.6.50 As set out in the introduction reference is also made to the impact of CVR as a maintenance project and as part of the overall M1 Junction 19 Improvement.

4.6.51 Criteria defining impact magnitude are set out in Table 4.4

Impact on Landscape Character Sensitivity Year 0

Biodiversity

4.6.52 As set out in Chapter 3 Ecology, the junction improvement scheme is in a primarily agricultural area where existing species diversity is generally low. Losses at construction stage would generally be in terms of habitats of local importance including woodland planting and verges within the highway and elements of the agricultural landscape beyond including arable land, improved and semi improved grassland, hedgerows, some of which would be 'Important' under the hedgerow regulations, and ditch courses. The most valuable habitat affected would be the River Avon which can be considered as a nationally important wildlife corridor supporting a variety of species, and of *High* sensitivity. However, works to the river in terms of reprofiling some of the banks are of a minor nature, and although cause some disturbance during the construction stage are being carried out to achieve ultimate benefits for the river habitat. In overall terms given the scale of the loss of local features with some 6.15 hectares of general vegetation (including woodland and scrub) 5764 metres of hedgerow lost and minor works to the river, the magnitude of the impact is considered to be *Moderate Adverse*.

Cultural

4.6.53 Direct losses of cultural landscape features would be confined to some loss of ridge and furrow adjacent to the A14. Much of the land directly affected has been identified by the Historic Landscape Character Assessment reported in Chapter 2, Cultural Heritage as being affected by post war hedge removal. As described under visual sensitivity below it is not considered that the setting of Lilbourne Motte and Bailey castle or its adjacent church would be significantly affected. Similarly visual impacts on the village Conservation Areas would be very limited and only *Slight Adverse* for Stanford Park.

4.6.54 The magnitude of impact for Cultural features is considered to be *Minor Adverse*.

Landcover

4.6.55 As illustrated by Figure 4.5 and noted above, the areas of vegetation lost by the construction of the project including areas of land in temporary use would be 6.15 hectares of general vegetation and 5766 metres of existing hedgerows, including those on existing highway boundaries and in fields.

4.6.56 Impacts on established vegetation include the following:-

- All of the established planting on embankment slopes to the north of the M6 Eastbound off slip and to the north and east of the M6 – M1 Southbound Link

- Established woodland on the northern side of the Shawell Road bridge embankments
- Loss of hedgerows and hedgerow trees, particular to the east of the junction facing Swinford, along the M1 – A14 Eastbound Link and the A14
- Established planting on the M1 embankments within the junction

4.6.57 The magnitude of impact given the scale of this loss is considered to be *Moderate Adverse*.

4.6.58 The loss of farm land in terms of agriculture including temporary losses during construction is dealt with in Chapter 8, Community and Private Assets.

4.6.59 In terms of the landscape character of the agricultural land, the impact during the construction period, when the use of temporary land for compound and storage areas is at its greatest, is considered to be *Minor Adverse*. The loss of vegetation is a more significant issue.

Pattern

4.6.60 Here it is considered that the impact of the new works, though considerable in scale, would be offset by the presence of the existing junction and other detractors in the area. The layout would be in scale within the existing junction and its maximum height would be similar.

4.6.61 In terms of the scale of new infrastructure, the highest most intrusive element would be the A14 – M1 Northbound Link crossing the existing M1 embankment. This would be at a similar level to the existing M6 – M1 Southbound Link, which would be replaced on a slightly different alignment but at a similar level. New infrastructure would not break the skyline at Catthorpe Hill.

4.6.62 By passing under the existing M1 the M6 – A14 Link would remain at or below ground level, minimising its potential impact.

4.6.63 The loss of roadside vegetation as reported above under landcover would be *Moderate Adverse*. However, the layout for the Junction Improvement does allow for the retention of large areas of established planting in the south-west quadrant, i.e. adjacent to the M1 – M6 Northbound Link Road which is important in providing a backdrop to the junction.

4.6.64 Gantries, new signs and new structures would all provide an additional urbanising feature, particularly at construction stage when they would be more clearly visible given the removal of vegetation. This would be particularly the case for the higher level viaducts associated with the M6 – M1 Southbound Link and A14 – M1 Northbound Link.

4.6.65 New lighting would not be seen higher in the landscape than at present and the conversion to flat glass luminaires with maximum cut-off would minimise the effect. However, lighting would be extended to the east of the junction along the A14.

4.6.66 Although several bridges would be required to accommodate the LRN these are within the proposed junction footprint and do not impact significantly on the surrounding landscape, given that the LRN and its bridges remain at a low level relative to the other main structures.

4.6.67 It is not considered that the LRN would have a significant impact in addition to the main routes. The extension of the LRN towards Shawell Lane and Catthorpe Road remains

close to the M6. As previously described where the line follows the existing roads care has been taken to retain hedges on one side where possible. The route has also been selected to retain as many mature trees as possible.

- 4.6.68 In overall terms it is not considered that the effect of the works, in combination with the retention of substantial areas of vegetation would alter significantly the scale of the relationship between the junction and the surrounding area. The new junction would not result in a more dominant feature with the wooded skyline of Catthorpe Hill continuing to provide a more dominant setting.
- 4.6.69 However, during construction when the clutter of plant, disturbed ground, the storage of materials and compounds, and immediately upon opening the road, before mitigation can take effect, the construction would be of sufficient scale to have a *Moderate Adverse* impact.

Impact for Catthorpe Viaduct Replacement Year 0

- 4.6.70 In overall terms it is not considered that the effect of the works, in combination with the retention of substantial areas of vegetation will significantly alter the scale of the relationship between the CVR and the surrounding area. The new viaduct will not result in a more dominant feature with the wooded skyline of Catthorpe Hill continuing to provide a more dominant setting. The overall impact in terms of pattern is considered to be *Negligible Adverse* at Year 0., By the time land is reinstated and mitigation in the form of planting and habitat creation has established at Year 15 the impact is considered to be *Negligible Beneficial*.
- 4.6.71 During construction when the clutter of plant, disturbed ground, the storage of materials and compound, there would be views from sensitive receptors. However, the scale of the construction works against the background of the existing detractor of the motorways and junction infrastructure is considered to have a *Minor Adverse* but temporary impact.
- 4.6.72 The overall magnitude of impact of CVR on Landscape Character Sensitivity for Year 0 is considered to be *Negligible Adverse* for Year 0 as reported in the separate assessment²².

Summary

- 4.6.73 The overall magnitude of impact on Landscape Character Sensitivity for Year 0 taking CVR into account is considered to be *Moderate Adverse*.

Impact on Landscape Character Sensitivity Year 15

Biodiversity

- 4.6.74 By Year 15 it is anticipated that the habitat creation measures included on the Environmental Master Plan would have taken effect. These include:-
- 9.7 hectares of native woodland planting from local provenance seed sources, covering a greater area than the 6.15 hectares of general vegetation (including woodland and scrub) lost
 - 5907 metres of species rich hedgerow
 - 14 hectares of species rich grasslands with greater diversity than the areas lost during construction. This figure includes grasslands associated with the new wetlands described below.

- 3.1 hectares of new wetlands. The greater area consists of drainage ponds designed to treat run-off, but which would nevertheless have nature conservation value in their own right. In addition to these approximately 15-20 small ponds would be created to meet wildlife objectives
- Enhancements to the River Avon in terms of its geomorphology and ecological diversity. The river would also benefit from an improved quality of run-off and greater protection from accidental pollution events, due to the provision of the drainage ponds

4.6.75 As confirmed in Chapter 3 Ecology and Nature Conservation these measures would result in an overall gain for biodiversity compared with the existing scheme. In terms of its contribution to overall landscape character this would have a *Minor Beneficial* impact.

Cultural

4.6.76 Impacts on the settings of Village Conservation Areas would reduce as planting establishes though, as reported below, a *Slight Adverse* visual impact would remain for Stanford Park, given the effect of extended lighting. The loss of ridge and furrow cannot be replaced.

4.6.77 The impact for Year 15 would remain as *Minor Adverse*.

Landcover

4.6.78 As set out above the proposals would increase woodland cover by 3.55 hectares and hedgerow provision by 141 metres.

4.6.79 By Year 15 agricultural land used temporarily during construction would be restored using the techniques set out in Chapter 5 Materials.

4.6.80 Some agricultural land would have been converted into other uses, such as highways which would be seen as an adverse effect, though balanced by land used for planting or habitat creation.

4.6.81 As set out previously, the loss of vegetation was seen as the most significant landcover issue for Year 0. For Year 15, the addition of established vegetation to landcover is considered to result in a *Moderate Beneficial* impact.

Pattern

4.6.82 The restoration of land used for construction and the establishment of vegetation would reduce the *Moderate Adverse* impact identified for Year 0. However, a *Minor* level of impact would remain as even after 15 years, the new planting would not have the maturity of the vegetation removed at construction stage. Larger elements such as gantries and the higher level structures would remain visible and features such as the extension of lighting to the east of the junction could not be completely mitigated.

4.6.83 The cross sections at Figure H and photomontages, included in Appendix 1 to Volume 1 of the ES, illustrate the impact of the planting at year 15.

Impact of Catthorpe Viaduct Replacement

4.6.84 There is no further impact for CVR for year 15

Summary

4.6.85 The overall magnitude of impact on Landscape Character Sensitivity for Year 15 taking CVR into account is considered to be *Neutral*.

Impact on Visual Sensitivity

Introduction

4.6.86 As set out in Section 4.2 Methodology the visual impact assessment deals with all three issues contributing to visual sensitivity:-

- The general visibility of the project within the study area, taking into account containment offered by landform, tree and woodland cover
- The impact on receptors such as dwellings, public rights of way, cultural heritage features and other community areas
- The mitigation measures

4.6.87 Visual impact is illustrated by Figure 4.6 – 4.10 and fully detailed on the schedules at Appendix D.

4.6.88 The two main scenarios are as set out for the Landscape Character Sensitivity assessment above:-

- Year 0, that is upon road opening, without the benefit of planting. Construction impacts are also described for this scenario.
- Year 15, when planting has had time to take effect. For Year 15 in accordance with the DMRB¹, consideration has been given to winter and summer, though the reporting of numbers affected relies upon winter as the worst case. Impacts can be considered to be slightly reduced from those described during the summer months, though given the density of proposed planting there could be relatively little difference.

4.6.89 As set out in the introduction reference is also made to the impact of CVR as a maintenance project and as part of the overall M1 Junction 19 Improvement.

4.6.90 The scenario illustrated on the plans is Year 0, the worst case effect.

4.6.91 Each building receptor has been given an individual reference number and letter and these are indicated in brackets below for cross reference with the plans. The impacts on Public Rights of Way are also shown on the plans.

4.6.92 The terms used to define the magnitude of impacts are those set out in the DMRB Volume 11¹ and are shown in *italics*. Unless otherwise specified the impacts described are adverse. Where appropriate, reference has also been made to temporary impacts during construction.

4.6.93 It should also be noted that the visual impacts recorded are for the M1 Junction 19 Improvement Scheme alone. As reported at Chapter 8 Community and Private Assets there is planning consent for a proposal to construct a Trunk Roadside Service Area (RSA) to the south-west of Swinford on fields adjacent to the A14. At this stage there is uncertainty about the future of this site, and the status of the planning consent is unclear. Given the time that has elapsed since the consent, it is possible that conditions attached have not been discharged within the appropriate time limit.

4.6.94 Such a proposal would clearly have a visual impact in its own right in addition to those described below, but this lies outside the scope of the assessment. The potential RSA is also discussed in Cumulative Impacts in Volume 1 of the ES.

Views from Settlements and Individual Dwellings

Shawell

4.6.95 There would be no visual impact on Shawell village.

Swinford

4.6.96 Views towards the junction improvement would be mainly confined to dwellings on the edge of the village with views across fields to the south-west, south and south-east. Intervening buildings and vegetation limit views from the core of the village.

4.6.97 The highest new element visible from Swinford would be the A14 – M1 Northbound Link which, seen from the north-east, would be in front of the existing M6 – M1 Southbound Link. As seen from Swinford, this would be 100m beyond the A14 and at the same level as the existing M6 – M1 Southbound Link. However, a key issue would be the loss of existing vegetation which currently provides good screening for the existing link and bridge. Photomontage 1 illustrates the effect and the cross sections show the relative levels.

4.6.98 Views from Swinford would also be affected by the M1 to A14 Eastbound Link which would be at a high level, crossing the LRN at Rugby Road. As it merges with the A14 this link would also be sited in the fields to the north of the A14, resulting in the loss of substantial boundary hedges. As described in Section 4.5. Mitigation, a two metre high false cutting is proposed along this section to provide initial screening and give proposed planting additional height. A further key factor for Swinford would be the extension of lighting along the A14. Views from Swinford would also be affected on a temporary basis by the site compound.

4.6.99 The four houses on higher ground (B1) would retain some view of the altered M1 North of the junction and have been recorded as *Slight*. With new planting the effect would be *Neutral* in the longer term. The row of six houses at Chapel Fields would remain *Neutral*.

4.6.100 All of these properties would also be affected for a temporary period by the contractor's site compound, resulting in a *Moderate* impact, limited to the construction phase.

4.6.101 For the 11 houses on the north side of Rugby Road there would be some view of the higher links but partially screened by mature intervening vegetation, resulting in a *Neutral* impact for Year 0 and Year 15. The distant skyline at Catthorpe Hill would remain unaffected.

4.6.102 For properties on the south side of Rugby Road (B3) the distant skyline would remain similarly unaffected, but given the presence of additional lighting along A14 which could not be screened, the impact is considered to be *Slight* for Year 0 and Year 15.

4.6.103 The row of six properties including Braye Cottages (B4) have the clearest views towards the A14. The additional impact of lighting along A14 would result in a *Slight* impact for Year 0 and Year 15.

- 4.6.104 Individual dwellings in the Swinford area have been assessed and are also illustrated on Figure 4.6.
- 4.6.105 Lambcote Hill Farm (5) would have clear views to the south, but given that substantial areas of background vegetation can be retained and that the height of new infrastructure would be restricted to existing levels, the visual impact would be restricted to a *Moderate* level, reducing to *Slight* as new planting established. The adjacent Shawell Road bridge over the M1 would need to be reconstructed leading to the loss of established vegetation on the embankment slopes. Any views of this from the farmhouse would be constrained by the intervening farm buildings.
- 4.6.106 Swinford Lodge (6) would have views confined to a narrow arc by surrounding vegetation. Given the retention of existing vegetation and height similar to existing, the visual impact would be *Slight*, reducing to *Neutral* as new planting established. This assessment would also allow for views towards the new Shawell Road bridge over M1 which would also be constrained by existing vegetation.
- 4.6.107 Both Westfield Lodge (7) and Brookside bungalow (8) would be affected to a *Substantial* level of impact given their proximity to the works and in particular the proposed M1 – A14 Eastbound Link which would need to be on a localised embankment of 8m to cross the LRN Rugby Road. This effect would reduce, to *Moderate* for Westfield Lodge (7) and *Slight* for Brookside (8), in the longer term as planting established.
- 4.6.108 The impact of the proposals on two more distant properties, The Lodge (16) and a bungalow (17) is considered to be *Slight* and *Neutral* respectively in year 0. Both would be *Neutral* in the longer term.
- 4.6.109 All the separate dwellings described above for the Swinford area would also be affected by the contractor's site compound. The temporary construction impact would be *Substantial Adverse* for Lambcote Hill Farm (5), Swinford Lodge (6) and Westfield Lodge (7). Both Lambcote Hill Farm and Swinford Lodge would also be affected by construction laydown areas and by plant associated with the construction of the Shawell Road bridge.

Catthorpe

- 4.6.110 One dwelling (Hazelwood) (C1) has clear views to the north towards M6. With the proposals, the embankment slopes facing Catthorpe would remain unchanged but there would be a narrow arc of views towards the realigned M6 – M1 Southbound Link rising on embankment and also towards two new gantries proposed on the M6. A *Slight* impact for Year 0, reducing to *Neutral* in the longer term. Photomontage 7 in Appendix 1 to Volume 1 of the ES, illustrates the view from Catthorpe.
- 4.6.111 Two semi-detached cottages (C2) No's 1 and 2 Swinford Road and adjacent Heath House would have similar views and a *Slight* impact for Year 0, reducing to *Neutral* in Year 15.
- 4.6.112 Other properties in Catthorpe (C3) are protected by topography and existing vegetation and assessed as *Neutral*.
- 4.6.113 In terms of outlying properties at Catthorpe there would be a *Moderate* impact in Year 0 for Old Barn Farm (9) due to a gap created in the existing woodland screen for a temporary traffic diversion and haul road which would open up views of the M1 – M6 Northbound Link and the higher level M6 – M1 Southbound Link. With the planting replaced the impact would reduce to *Slight* in Year 15.

4.6.114 As no works are proposed to the M1 south of the junction and existing woodland planting would be retained, there would be no effect upon Catthorpe Manor or the dwellings within its grounds.

Lilbourne

4.6.115 As no works are proposed to the M1 south of the junction there would be no visual impact from the junction improvement itself on this community or its outlying properties. As described below there would be some impact on properties in the Lilbourne area from proposed gantries.

Other Properties to the North-west of Junction 19

4.6.116 Two semi-detached properties facing Catthorpe Road (3) would be affected by the realignment of Catthorpe Road as part of the LRN, due to the loss of existing vegetation. There would be a *Moderate* impact in Year 0, reducing to *Slight* in the longer term.

4.6.117 Tomley Hall Farm (3) would be significantly more exposed to changes resulting from the complete loss of vegetation on the M6 embankments to the south. There would also be views of a new gantry on M6 and the LRN, both the new section parallel to M6 and the improvement to Shawell Lane to the south-west. The impact would be *Substantial* in year 0, reducing to *Moderate* as proposed planting takes effect. This would be carried out on the M6 embankments in between the motorway and the LRN. Given the maturity of the planting lost, a false cutting has been added to provide initial screening and to give the planting additional height. Photomontage 5 in Appendix 1 to Volume 1 of the ES, illustrates the proposals in this area. The relative levels are illustrated by the cross section at Figure H, included in Appendix 1 to Volume 1 of the ES.

4.6.118 At Stonebank (4) there would be a *Substantial* impact for three residents in mobile homes on the site, due to clear views of the higher level links and in particular the close proximity of the A14 – M1 Northbound Link and the loss of existing vegetation. There is also a proposed gantry immediately adjacent to the site.

Gantries

4.6.119 In addition to the gantry locations within the footprint of the junction improvement described above, several gantries and VMS's are proposed on the approaches to the junction.

4.6.120 The visual impact assessment of these locations is illustrated on visual impact plans, Figures 4.7 – 4.10. The assessment takes into account the fact that some existing gantries and VMS's are to be removed.

4.6.121 On the M1 to the south of the Junction, Figure 4.7, there would be some views from Lilbourne towards three gantries. A location just north of the M1 viaduct would result in a *Slight* impact for The Elms (10). The same location would also result in a *slight* impact on the setting of Lilbourne Motte and Bailey castle, though adjacent properties including the Grade I listed church would be screened.

4.6.122 Properties along Station Road (D1) would also potentially have sight of a gantry situated in the adjacent M1 cutting, though mature vegetation within the cutting would provide screening, resulting in a *Neutral* impact.

- 4.6.123 Properties in the south of Lilbourne (D2) and Lilbourne Fields Farmhouse (15) would have views of a third gantry location to the south of Yelvertoft Road. The impact is considered to be *Neutral* for properties south of Lilbourne (D2) and *Slight* for Lilbourne Fields Farmhouse (15), given the removal of existing facilities.
- 4.6.124 On the M1 to the north of the junction, Figure 4.8, *Neutral* impacts are recorded for Hill Farm (18) and Spinney Farm (19) again given the removal of existing facilities.
- 4.6.125 Figure 4.9 shows new gantry and VMS location on the A14 east of the junction and distant views from properties on higher ground to the south. There would be a *Neutral* impact for three properties, Lilbourne Lodge (12), Clarkes Farm (13) and New Clarkes Farm (14) and a *Slight* impact for Morningside (11) which also has wider views of the junction improvement. Intervening topography ensures that there would be no views towards these gantries from Stanford to the north of A14.
- 4.6.126 Figure 4.10 illustrates gantries on the M6 approach from the west. In addition to properties in Catthorpe (C1) and on Shawell Lane (2) already affected by the junction improvement, the Homestead (21) and Holywell House (20) would have some view, recorded as *Neutral* given the removal of other facilities.

Summary

- 4.6.127 Table 4.7 provides a summary of the visual impact on dwellings for the proposals.

Table 4.7: Summary of Visual Impact on Properties

Impact	Year 0	Year 15
Substantial Adverse	6	0
Moderate Adverse	4	7
Slight Adverse	23	12
Neutral	54	68
Slight Beneficial	0	0
Moderate Beneficial	0	0
Substantial Beneficial	0	0

- 4.6.128 In considering the overall impact on properties for Year 0, 23 out of the 87 properties counted would experience a *Slight Adverse* impact with 4 *Moderate* and 6 *Substantial*. The greatest number would have a *Neutral* effect. That is considered to be an overall magnitude of *Minor Adverse*.
- 4.6.129 By Year 15 when planting proposals have mitigated the effects for the majority of properties, 80 out of 87 would be experiencing *Neutral* or *Slight Adverse* impacts with only 7 remaining at a *Moderate* level. This is considered to be equivalent to an overall magnitude of *Negligible Adverse*.

Views from Public Rights of Way

- 4.6.130 The length of PRoW affected by the proposals are also illustrated on the Visual Impact Plans Figures 4.6 to 4.10.
- 4.6.131 The methodology and terms used are similar to those for properties as described above. The reference numbers are those applied by the County Councils. The visual impact assessment deals with those existing routes, which it is anticipated would remain in place

on completion of the project. Sections of PRow which would need to be diverted or stopped up are not included in this assessment. These effects are dealt with in Chapter 7, Effects on All Travellers.

The text divides the network into four quadrants:-

- Shawell Area, north-west of the junction
- Swinford Area, north-east of the junction
- Land between M1 and A14 south-east of the junction
- Lilbourne and Catthorpe Areas south-west of the junction

Shawell Area, Northwest of the Junction

4.6.133 Impacts on this quadrant are due to the LRN and changes to the M6 embankment. The LRN being adjacent to M6 and an improvement to the existing Shawell Lane / Catthorpe Road would only have a limited impact. Impacts include *Slight* impact for much of Bridleway X14 given long distance views towards the junction and impacts between *Moderate* and *Substantial* where lengths of X14, X19, X21b, X21c, X21a and X13 approach the new embankments and LRN, given the loss of existing screen planting. These effects would reduce to *Slight* in the longer term as new planting establishes.

Swinford Area, Northeast of the Junction

4.6.134 There is a considerable network of PRow centred upon the village and its access roads.

4.6.135 Footpath X11 would have very clear views of the new works, initially with a *Substantial* impact reducing to *Slight* as planting establishes. Impacts for Footpath X8 would be similar.

4.6.136 Views from Footpaths X9 and X7 would be *Moderate* for Year 0, being contained by parallel field boundaries, reducing to *Slight* or *Neutral* as new planting adjacent to A14 established. The impact for Footpath X6 which is more remote from intrusive structures would be *Slight*, varying to *Neutral* closer to Swinford..

4.6.137 Impacts from Footpath X10 would vary from *Slight*, where there are long distance views of the junction, to *Moderate* closer to the bridgeworks at Shawell Road. These would reduce to *Neutral* and *Slight* respectively in the longer term.

Land Between M1 and A14 Southeast of the Junction

4.6.138 It would be possible to see the new works from the elevated route of Bridleway EX7, but given the distance the impact is considered to be *Neutral*.

Lilbourne and Catthorpe Areas Southwest of the Junction

4.6.139 Views from PRow in this area would not be significantly affected, given there are no changes to the M1 south of the junction and that existing vegetation can be retained.

4.6.140 There would be *Slight* impacts for Bridleway X13 and Footpath X52 as they descend Catthorpe Hill to Swinford Road, given some views of the realigned M6 – M1 Southbound Link and new gantries. A *Slight* impact reducing to *Neutral* in the longer term.

Gantries

4.6.141 Figures 4.7 to 4.10 show PRow affected by the remote gantry locations. The impacts are not significant with all of the affected routes recorded as *Slight* or *Neutral*.

Summary

4.6.142 There are some *Substantial* impacts associated with PRow close to the proposed works. The majority of impacts are *Slight* and considered to reduce to *Neutral* as planting takes effect.

4.6.143 Given that some substantial impacts have been identified the overall magnitude of impact is considered to be *Moderate Adverse* for Year 0, reducing in time as planting matures to *Minor Adverse*.

Views from Cultural Heritage Features

4.6.144 Cultural Heritage features are illustrated on Figure C in Appendix 1 to Volume 1 of the ES.

Registered Parks and Gardens

4.6.145 The impact for Stanford Park would be due to additional street lighting to the south of Swinford. The impact for Year 0 and Year 15 would be *Slight*.

Conservation Areas

4.6.146 The main part of Swinford Conservation Area would be unaffected by visual impact. The overall impact for the Junction Improvement would be *Slight*, mainly due to additional lighting on A14.

4.6.147 Impacts on Catthorpe Village would be minor. The main part of the village would be unaffected and the extension of the Conservation Area around Catthorpe Manor would not be affected given the retention of woodland. A *Neutral* effect.

Listed Buildings

4.6.148 Two Listed Buildings would be affected by visual impact due to the proposals as set out in Table 4.8 below:-

Table 4.8: Visual Impact upon Listed Buildings

Building	Year 0	Year 15	Listing
Swinford Lodge (6)	Slight	Neutral	Grade II
The Limes (B6)	Neutral	Neutral	Grade II

4.6.149 In overall terms the impact on Listed Buildings is considered to be *Slight*.

Scheduled Monuments

4.6.150 There would be a slight impact on the setting of Lilbourne Motte and Bailey castle due to views towards a proposed gantry to the north of the River Avon Viaduct.

Summary

4.6.151 The magnitude of the impact from the descriptions above for Year 0 would be *Minor Adverse*.

4.6.152 By Year 15 with the growth of planting the impact would reduce to *Negligible Adverse*.

Impact on Visual Sensitivity for Catthorpe Viaduct Replacement

4.6.153 It is considered in overall terms that there would be no change to existing views for all receptors (individual properties, settlements and groups of properties, PRoW, Cultural Heritage features) identified as part of the separate CVR visual impact assessment, as there will be minimal loss of existing screening vegetation and consequently no opening up of views.

4.6.154 For Years 0 and 15 overall impacts are *No Change* or *Neutral* for properties, cultural heritage features and PRoW. The overall impact of the CVR on visual sensitivity is considered to be *No Change* as reported in the separate assessment.²²

Summary of Impact on Visual Sensitivity

4.6.155 For Year 0 overall impacts vary between *Minor Adverse* for properties and cultural heritage features and *Moderate Adverse* for Public Rights of way. The overall impact on visual sensitivity taking CVR into account is considered to be *Moderate Adverse*.

4.6.156 For Year 15 the overall impact taking CVR into account is considered to be *Negligible Adverse*.

Impact on Landscape Value

Designations

4.6.157 Stanford Park is a Registered Park and Garden to the east of the project. Its general setting is already affected by the presence of the existing junction and its lighting, and the main area of the park is already protected by substantial tree belts on its southern perimeter.

4.6.158 As noted in the previous section new lighting would be extended further along the A14 towards the River Avon, and although this would be seen against the background of lighting along the M1 in any event, it is considered that this aspect would result in a *Minor Adverse* impact for both Year 0 and Year 15.

Scenic Value

4.6.159 As described in Section 4 the presence of a motorway junction is already a significant element in the landscape. The surrounding area varies from 'ordinary' quality to areas of 'good' quality.

4.6.160 In considering the impact on landscape value there are parallels with the impact on landscape character as a whole, particularly in terms of pattern, which deals with some of the more aesthetic landscape issues such as the relationship between topography, the form and scale of the landscape.

4.6.161 As for landscape pattern, the loss of existing vegetation, together with new urbanising element such as structures and gantries, would initially have a *Moderate Adverse* impact on scenic quality, though as planting establishes this would reduce to *Minor Adverse* in Year 15.

Tranquillity

4.6.162 Section 4.4 confirms that the area is not tranquil at present.

4.6.163 The introduction of quieter road surfaces for the motorways and trunk roads and traffic changes in the villages would result in an overall *Moderate Beneficial* effect in noise terms. This issue is dealt with in detail in Chapter 6, Noise and Vibration.

4.6.164 In terms of landscape tranquillity this is regarded as a *Minor Beneficial* impact, both for Year 0 and Year 15.

Impact of CVR on Landscape Value

4.6.165 As with the main scheme, considering all three issues together the overall impact of the CVR on landscape value is considered to be *No Change* for Year 0 and Year 15 as reported in the separate assessment²².

Summary of Impact on Landscape Value

4.6.166 Considering all three issues together the overall impact on landscape value taking CVR into account is considered to be *Minor Adverse* for Year 0 and Year 15.

Significance for Planning Policies

4.6.167 The planning policy background is set out in Section 4.3. An assessment of the impacts of the scheme on the objectives of these policies is set out below.

Regional Policies

4.6.168 The proposed improvement to Junction 19 of the M1 would have a *minor adverse* impact on historical landscape features such as Stanford Park and Swinford Lodge listed building as set out in section 4.6 and 4.7. Policy QE5 of the West Midlands Regional Spatial Strategy, and Policies 26 and 27 of the East Midlands Regional Plan aim to protect the historic landscape, including listed buildings and historic parks and gardens. The proposed development would therefore have a *Minor Adverse* impact on these policy objectives in both Year 0 and Year 15.

4.6.169 Policy QE3 of the West Midlands Regional Spatial Strategy requires that new development incorporates landscape design which respects local character. The proposed development incorporates landscape proposals as part of the design and as such there would be *Moderate Beneficial* impact on the objectives of this policy.

4.6.170 Policies QE1, QE4 and QE6 of the West Midlands Regional Spatial Strategy and Policies 28, 30 and 31 of the East Midlands Regional Plan are concerned with the protection and enhancement of the landscape character. The appearance of the road with associated structures, gantries and lighting would have a *moderate adverse* impact on these policy objectives in Year 0. However, with the implementation and growth of mitigation planting this would be reduced to a *Neutral* impact on landscape character policy objectives by Year 15.

4.6.171 Overall there would be a *Minor Adverse* impact on regional landscape policy objectives.

Local Policies

4.6.172 Policies EN25 of the Daventry District Local Plan, EV20 of the Harborough District Council Local Plan and GP2 of the Rugby Borough Council Local Plan require that all new development must include a comprehensive landscape scheme which is of high quality design and complements the character of the area. The design of the proposed development includes comprehensive landscape design and as such there would be a *Moderate Beneficial* impact on these policy objectives.

4.6.173 As part of the proposed development a number of established trees and hedgerows require removal. Policies EV19 of the Harborough District Local Plan and E9 of the Rugby Borough Council Local Plan seek to protect trees and hedgerow from development. Due to the volume of trees and hedgerow to be lost there would be *moderate adverse* impact on these policy objectives in Year 0. However, substantial native woodland planting, wetland creation and species rich hedgerow is planned as part of the proposed mitigation. Following the planting of these features the impact on these policy objectives would change to *Minor Beneficial* as the new planting would be an improvement on what was removed.

4.6.174 Policies such as EN10 and EN26 of the Daventry District Local Plan, Policy 17 of the Harborough District Council Draft Core Strategy, Policies GP3 and E5 of the Rugby Borough Council Local Plan and Policy 5 of the North Northamptonshire Core Strategy all seek to protect and enhance the character and appearance of the landscape. The proposed scheme will result in the removal of large quantities of vegetation, trees and hedgerow which will impact on the character and visual impact of the landscape. These would have a *moderate adverse* impact on the policy objectives in Year 0. By Year 15 this would be reduced to a *Minor Adverse* impact on policy objectives because although the replacement planting would have grown it would not have reached a similar maturity to that which was removed.

4.6.175 The proposed improvement to Junction 19 would have a *minor adverse* impact on Stanford Park, a registered park and garden, mainly as a result of the proposed lighting. There would be no significant impacts on any other cultural heritage landscape features. Policy 17 of the Harborough District Council Draft Core Strategy and Spatial Objective 11 of the Rugby Borough Council Draft Core Strategy seek to protect the natural and cultural features of the landscape and therefore there would be a *Minor Adverse* impact on these policy objectives in both Year 0 and Year 15.

4.6.176 Overall there would be *Minor Adverse* impact on landscape policy objectives at a local level.

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4.7 SIGNIFICANCE OF EFFECTS

- 4.7.1 As set out in Section 4.2 Methodology, significance of effects is considered to be a product of the capacity of the landscape to accept change and the magnitude of the impacts anticipated. The matrix at Appendix F combines capacity and magnitude of impact and some typical descriptors of significance of effects is at Table 4.5
- 4.7.2 As set out in Section 4.4, taking into account landscape character sensitivity, visual sensitivity and landscape value, the overall capacity of the study area for the M1 Junction 19 Improvement is considered to be *Medium*.

Landscape Character Sensitivity

- 4.7.3 Taking into account biodiversity, cultural issues, landcover and pattern, the overall magnitude of impact for landscape character sensitivity is considered to be *Moderate Adverse* for Year 0 and *Neutral* for Year 15.
- 4.7.4 This would result in a significance of effect of *Moderate Adverse* for Year 0 and *Neutral* for Year 15.
- 4.7.5 The loss of vegetation, coupled with the introduction of new structures and earthworks which would remain visible until mitigation measures established is considered to be the most significant issue. Effects during the construction period itself, when the area to be disturbed is greater and contractor's plant such as cranes and site compounds are present, are also significant.

Visual Sensitivity

- 4.7.6 Taking into account general visibility, views from receptors including properties, public rights of way and cultural features and the potential for mitigation measures, the overall impact for Year 0 is considered to be *Moderate Adverse* and for Year 15 *Negligible Adverse*.
- 4.7.7 This would result in a significance of effect of *Moderate Adverse* for Year 0 and *Slight Adverse* for Year 15.
- 4.7.8 The most significant effects are considered to be on views from properties where a small number would experience substantial visual impact until mitigation measures take effect.
- 4.7.9 It is also noted that the presence of the site compound would also result in *Substantial*, though temporary impacts particularly for nearby properties such as Lambcote Hill Farm (5) and Westfield Lodge (7).

Landscape Value

- 4.7.10 Taking into account the designation of Stanford Park as a Registered Park and Garden, the scenic value of the study area and its general lack of tranquillity the overall magnitude of impact is considered to be *Minor Adverse* for Years 0 and 15.
- 4.7.11 This would result in a significance effect of *Slight Adverse* for Years 0 and 15.
- 4.7.12 As for the Landscape Character Sensitivity the most significant effect is likely to be the removal of existing vegetation and addition of new features, during the construction period and in Year 0 before mitigation measures have had time to take effect.

Significance of Effect for CVR

4.7.13 Taking all three issues together the overall significance of effect for the CVR project is *Neutral* for Year 0 and Year 15 as reported in the separate assessment²²

Summary of Significance of Effect

4.7.14 Taking all three issues together the overall significance of effect for the M1 Junction 19 Improvement taking CVR into account is *Moderate Adverse* for Year 0, reducing to *Slight Adverse* for Year 15.

4.8 INDICATION OF DIFFICULTIES ENCOUNTERED

4.8.1 No difficulties were encountered in the preparation of this assessment.

4.8.2 It has been possible to carry out an appropriate level of survey and the design for the project in terms of the engineering layout is sufficiently advanced for the landscape impacts to be assessed.

4.8.3 Mitigation measures have also been developed and are committed to as an integral part of the project. They are included in the draft Orders for the project, enabling them to be taken into account in the assessment. Where there is uncertainty in this regard:-

- The use of offsite planting agreements under Section 253 of the Highways Act
- The planting of hedgerows as accommodation works

it is made clear that such measures are subject to agreement and they have not been taken into account in the assessment.

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4.9 SUMMARY

Introduction

- 4.9.1 This section summarises the findings of the landscape assessment and also considers them against the objectives set in the introduction.
- 4.9.2 This chapter has set out the methodology used for the landscape assessment and provides a full description of the baseline environment in terms of its:-
- landscape character sensitivity
 - Visual sensitivity in terms of topographical horizons and vegetation barriers, views from settlements, individual properties and other locations
 - Landscape value in terms of designations, scenic value and tranquillity
- 4.9.3 The mitigation measures are described in Section 4.5 and illustrated on the Environmental Master Plan Figure B, cross sections at Figure H and Photomontages, all in Appendix 1 to Volume 1 of the ES. Except where described as being subject to agreement by landowners, these measures have been taken into account in the impact assessment as an integral part of the design. The aims of the mitigation measures are to:-
- Integrate the scheme into its setting by replacing the loss of landscape features such as hedgerows and existing mature planting
 - Minimise the visual impact of the proposals
 - Comply with existing landscape management strategies
 - Enhance the landscape within the road corridor for the benefit of road users
 - Provide value for nature conservation
- 4.9.4 Section 4.6 Environmental Impact, provides a detailed description of the engineering proposals and their impacts on landscape character sensitivity, visual sensitivity and landscape value.

Landscape Character Sensitivity

- 4.9.5 At present established planting within the highway and adjacent woodlands helps to integrate the junction and to screen the traffic. Planting in combination with Catthorpe Hill is able to give the setting some dominance.
- 4.9.6 The impact of the proposals would be offset effectively by the presence of the existing junction and other detractors in the area. The proposed layout is in scale with the existing junction and its maximum height is similar.
- 4.9.7 The loss of the roadside vegetation is significant but there would be opportunities for significant new planting adding to existing stock and supporting the objectives of County landscape character assessments. The proposals would be consistent with objectives and key issues raised by the County and Harborough District Council.
- 4.9.8 New infrastructure would not break the skyline at Catthorpe Hill. Although gantries and new structures would provide an additional urbanising element it is not considered that the proposals, in combination with the retention of substantial areas of vegetation, would alter significantly the relationship between the junction and surrounding area. The infrastructure would not become a more dominant feature, but before mitigation could take effect it would have a *Moderate Adverse* impact.

- 4.9.9 Given the importance of the setting in the local context, assessed as *Medium* capacity, the overall effect in terms of landscape character for Year 0 would be *Moderate Adverse*.
- 4.9.10 In the longer term, taking into account the establishment of planting, including positive additions to woodland land cover, the impact magnitude at Year 15 would be reduced resulting in an overall *Neutral* effect.
- 4.9.11 Taking into account the medium capacity of the landscape to change, the overall significance effect would be *Moderate Adverse* for Year 0 and *Neutral* for Year 15.

Visual Sensitivity

Views from Settlements and Individual Dwellings

- 4.9.12 In Year 0, 23 out of the 87 properties counted would experience a *Slight Adverse* impact with four *Moderate* and six *Substantial*. The greatest number would have a *Neutral* effect. That is considered to be a magnitude of *Minor Adverse*.
- 4.9.13 By Year 15 when planting proposals have mitigated the effects for the majority of properties, 80 out of 87 would be experiencing *Neutral* or *Slight Adverse* with only seven remaining at a *Moderate* level. This is considered to be equivalent to an overall *Negligible Adverse* magnitude.

Views from Public Rights of Way

- 4.9.14 There are some *Substantial* impacts associated with the project. Several impacts are *Slight* and considered to reduce to *Neutral* as planting takes effect.
- 4.9.15 Given that some substantial impacts have been identified, the overall magnitude of impact is considered to be *Moderate Adverse* for Year 0, reducing in time to *Minor Adverse*.

Views from Cultural Heritage Features

- 4.9.16 The magnitude of the impact from the descriptions above for Year 0 would be *Minor Adverse*. By Year 15 with the growth of planting the impact would reduce to *Negligible Adverse*.

Summary

- 4.9.17 The overall impact on visual sensitivity is considered to be *Moderate Adverse* for Year 0 and *Negligible Adverse* for Year 15. Taking into account capacity, the overall significance of effect would be *Moderate Adverse* for Year 0 and *Slight Adverse* for Year 15.

Landscape Value

- 4.9.18 Taking into account the designation of Stanford Park as a Registered Park and Garden, the scenic value of the study area which varies between 'ordinary' and 'good' landscape and its general lack of tranquillity, the overall magnitude of impact is considered to be *Minor Adverse* for both Years 0 and 15.
- 4.9.19 This would result in a significance of effect of *Slight Adverse* for Years 0 and 15.

Conclusion

- 4.9.20 For CVR taking all three strands of the landscape assessment together, the overall significance of effect is *Neutral* for Years 0 and 15.
- 4.9.21 Taking all three strands of the landscape assessment together, the overall significance of effect for the M1 Junction 19 Improvement taking CVR into account is *Moderate Adverse* for Year 0 and *Slight Adverse* for Year 15.

Objectives

- 4.9.22 In terms of the objectives set out in Section 4.1 it is considered that the design of the project, and in particular the mitigation measures set out in Section 4.5, would protect the character of the landscape and minimise adverse impacts and loss of features.
- 4.9.23 As set out in the detailed assessment given the establishment of the measures proposed, several impacts are assessed as *Minor* or *Negligible Adverse* and with regard to habitats and the restoration of planting lost to the scheme there would be some beneficial impacts in terms of greater diversity and increased areas of provision.
- 4.9.24 It has been set out that environmental impact mitigation measures are integrated into the design. Although the junction would remain lit, the design of lighting by employing flat glass luminaires with the maximum cut-off would minimise night time light pollution. As set out under tranquillity it is anticipated that there would be an overall reduction in noise levels, this issue is addressed in more detail in Chapter 6, Noise and Vibration.
- 4.9.25 As set out in the assessment offsite planting has been discussed with landowners, including the owners of Tomley Hall Farm and Lambcote Hill Farm, and these discussions will continue as the scheme progresses.
- 4.9.26 Section 4.6 also confirms that the proposals are consistent with objectives set out by the respective County Council's to:-
- Conserve and enhance visual character
 - Conserve and increase woodland cover
 - Conserve and strengthen the hedgerow patten
- 4.9.27 They would also be consistent with key issues raised by Harborough District Council, in particular the proposals would be sympathetic to the landscape setting and landform.

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4.10 REFERENCES

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- 7 Current Character Areas Strategy and Guidelines. Northamptonshire County Council 2006
- 8 Current Landscape Character Assessment. Northamptonshire County Council 2006
- 9 Environmental Character Assessment and Key Issues. Northamptonshire County Council 2006
- 10 The Warwickshire Landscape Guidelines. Warwickshire County Council 1993.
- 11 Planning Policy Statement 7 : Sustainable Development in Rural Areas
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- 17 East Midlands Regional Plan (2009)
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- 19 Harborough District Council Local Plan 2001
- 20 Rugby Borough Council Local Plan 2006
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