M25 junction 10/A3 Wisley interchange TR010030
6.3 Environmental Statement Chapter 9: Landscape

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M25 junction 10/A3 Wisley interchange

The M25 junction 10/A3 Wisley interchange Development Consent Order 202[x]

6.3 ENVIRONMENTAL STATEMENT CHAPTER 9: LANDSCAPE

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Executive summary

The Scheme lies within a distinctive landscape predominantly comprised of heathland, woodland and agricultural land with the existing M25 and A3 forming a dominant feature within it. There are individual houses and small groups of properties near to the Scheme and larger settlements such as Cobham and Byfleet nearby. Much of the area surrounding the Scheme is designated as common land and open space and is well used by the public for informal recreation. The Rivers Mole and Wey lie to the east and west of junction 10 with the A3 on higher ground between them. It is an area with many historical associations and features including four scheduled monuments in close proximity. Painshill Park, a Grade I registered park and garden designed by Thomas Hamilton is located close to the A3 near Cobham. To the south the Royal Horticultural Society's gardens at Wisley which are a Grade II* registered park and garden are also lie close to the A3. The area surrounding the junction is protected from development by its designation as greenbelt.

As the A3 has become busier and increased in size and with the construction of the M25 in the 1980's these roads have increased the impact on the landscape, separating the landscape into distinctly separate parcels. Over many years woodland and tree screening has developed along the M25 and A3 and this has served to limit the visual impact of these highways on the surrounding area although the noise from the traffic is always present, disturbing the tranquillity of the area.

The Scheme has been developed to limit as far as possible the impact on the surrounding landscape with the widening of the A3 and enlargement of junction kept to the minimum size to achieve the transport objectives for the project. Similarly the changes to side roads and accesses have been designed to limit their impact on the area. Despite this there are large and unavoidable losses of woodland and other vegetation associated with the improvements to the highway infrastructure which will have a significant effect on the landscape. It will also increase the visibility of the roads and traffic leading to increased visual impact for people living, working and enjoying the open spaces around the Scheme. Because of the extent of the woodland and vegetation that has developed in the area the adverse impacts are not as significant as they could have been, with the effects largely limited to the immediate area.

The Scheme also includes large areas of mitigation planting to reduce the impact of the Scheme and to offset the losses of vegetation. This will take place on the land affected by the construction of the A3 and M25 and also on land used to replace the lost common land and open space and on land for compensation for loss of the Special Protection Area (SPA). Part of the compensatory measures to offset the impact on the SPA are proposals to restore heathland which has been lost to woodland planting since 1945. This involves the clearance of blocks of woodland in the surrounding area designated as SPA as well as the management of others. These works will alter the appearance and character of the area around the Scheme, extending the area of heathland and reducing the wooded character. For some people this will be seen as an adverse change and for others this will be seen as a beneficial effect of the Scheme by restoring the pre-existing landscape character.

9. Landscape

9.1 Introduction

9.1.1 This chapter considers the likely effects of the proposed M25 junction 10 scheme (hereafter referred to as 'the Scheme') upon the surrounding landscape and visual receptors.

9.1.2 This chapter describes the findings of the assessment and should be read in conjunction with Appendix 9.1and Figures 9.1 to 9.25

9.1.3 The landscape and visual assessment has been carried out following published guidance including Highways England's Interim Advice Note (IAN) 135/10 Landscape and Visual Effects Assessment and DMRB Volume 11, Section 3, Part 5 Landscape effects[1] but also with a consideration to the Landscape Institute's published Guidelines for Landscape and Visual Impact Assessment (GLVIA) 3rd edition[2].

9.1.4 The assessment of landscape and visual effects will be based on a combination of magnitude and sensitivity using the assessment matrix included in IAN 135/10 Landscape and Visual Effects Assessment[3].

9.2 Competent expert evidence

9.2.1 This landscape chapter has been undertaken by a Chartered Landscape Architect (BA (Hons), Dip LA & CMLI) who holds professional membership with the Landscape Institute. He has over 15 years of experience in the production of Landscape and Visual Impact assessments and has used his knowledge and professional judgement to undertake this assessment.

9.2.2 The assessment of landscape and visual effects was preceded by a review of baseline information to inform the landscape and visual context. This also included analysis of the planning framework and relevant environmental designations. The assessment was informed by visits to the study area in February, March and October 2017 as well as March and June 2018 to verify findings of the desk top studies. The following resources were utilised to establish the baseline landscape and visual amenity conditions:

- Listed Buildings (http://www.britishlistedbuildings.co.uk);
- MAGIC: Multi-Agency Geographic Information for the Countryside (http://magic.defra.gov.uk/);
- Ordnance Survey Maps: various scales (https://www.ordnancesurvey.co.uk/osmaps/);
- Google Earth: Aerial Photography (Imagery date: 2015);
- Guildford Borough Council Landscape Character Assessment (2007);

[1] Highways England (1993) Design Manual for Roads and Bridges Volume 11 Section 3 Part 5 *Landscape Effects* [online] available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/index.htm
[2] Landscape Institute (2012) *Guidelines for Landscape and Visual Impact Assessment (GLVIA).* 3rd edition
[3] Highways England (2010) IAN 135/10 *Landscape and Visual Effects Assessment* [online] available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/index.htm

- Elmbridge Borough Council Development Management Plan;
- Surrey Landscape Character Assessment (2015);
- Guildford Borough Council Local Plan (policies); and
- Elmbridge Borough Council Local Plan (policies).

9.3 Legislative and policy framework

9.3.1 The following table outlines the relevant principal legislation and policies considered in undertaking this assessment.

Table 9.1: Legislation, regulatory and policy framework for landscape

Legislation / Regulation	Summary of Requirements
European	
European Landscape Convention (Florence, 2000)	Sets out an internationally agreed definition of landscape: "The landscape is part of the land, as perceived by local people or visitors, which evolves through time as a result of being acted upon by natural forces and human beings". It also sets out the key actions that countries should follow and provides an integrated, holistic approach and international context for landscape, under the headline banner that "All Landscapes Matter".
National	
National Policy Statement for National Networks (NPSNN) 2014[4]	Guidance relevant to the landscape and visual effects of the Scheme include the following: Paragraph 5.144 states "where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts in the environmental impact assessment and describe these in the environmental assessment. The landscape and visual assessment should include reference to any landscape character assessment and associated studies, as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England." Paragraph 5.145 states "The applicant's assessment should include any significant effects during construction of the project and/or the significant effects of the completed development and its operation on landscape components and landscape character (including historic landscape characterisation)." Paragraph 5.146 states "The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation." Paragraph 5.149 states "Landscape effects depend on the nature of the existing landscape likely to be affected and nature of the effect

[4] Department for Transport (2014) *National Policy Statement for National Networks*: Presented to Parliament pursuant to Section 9 (8) and Section 5 (4) of the *Planning Act 2008* [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/387222/npsnn-print.pdf [online]

Legislation / Regulation	Summary of Requirements
	likely to occur. Both of these factors need to be considered in judging the impact of a project on landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints, the aim should be to avoid or minimise harm to the landscape, providing reasonable mitigation where possible and appropriate." Paragraph 5.156 states "Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation." Paragraph 5.158 states "The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development." Paragraph 5.159 states "Reducing the scale of a project or making changes to its operation can help to avoid or mitigate the visual and landscape effects of a proposed project." Paragraph 5.160 states "Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure, design (including choice of materials), and landscaping schemes, depending on the size and type of proposed project. Materials and designs for infrastructure should always be given careful consideration."
National Planning Policy Framework (NPPF) 2018[5]	Policy 13: Protecting Green Belt Land; Policy 15: Conserving and enhancing the natural environment; Policy 16: Conserving and enhancing the historic environment. This are relevant to the Landscape and Visual Assessment.
Countryside and Rights of Way Act 2000 (CRoW)	Regulates all PRoW and ensures access to them. It requires local highway authorities to publish a Rights of Way Improvement Plan (RoWIP), which should be reviewed every 10 years. The Act also obliges the highway authority to recognise the needs of the mobility impaired when undertaking improvements.
Road Investment Strategy (RIS) and Strategic Business Plan 2015[6]	Highways England has ring fenced £300 million in an Environment Fund to deliver improved environmental performance including landscape.
Highways England policy	
Highways England Licence[7]	The Highways England Licence5 outlines the commitments, duties and obligations of Highways England to the Department of Transport. Environmental commitments are detailed in section 5.23: "In complying with 4.2(g) and its general duty under section 5(2) of the Infrastructure Act 2015 to have regard to the environment, the Licence holder should: a. Ensure that protecting and enhancing the environment is embedded into its business decision-making processes and is considered at all levels of operations; b. Ensure the best practicable environmental outcomes across its activities, while working in the context of sustainable development and

[5] Department for Transport (2018) *National Policy Statement for National Networks*: https://www.gov.uk/government/collections/revised-national-planning-policy-framework
[6] https://www.gov.uk/government/collections/road-investment-strategy
[7] Department for Transport (2015) Highways England: Licence [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/431389/strategic-highways-licence.pdf [online] (last accessed June 2018)

Legislation / Regulation	Summary of Requirements
	delivering value for money; c. Consider the cumulative environmental impact of its activities across its network and identify holistic approaches to mitigate such impacts and improve environmental performance; d. Where appropriate, work with others to develop solutions that can provide increased environmental benefits over those that the Licence holder can achieve alone, where this delivers value for money; e. Calculate and consider the carbon impact of road projects and factor carbon into design decisions, and seek to minimise carbon emissions and other greenhouse gases from its operations; f. Adapt its network to operate in a changing climate, including assessing, managing, and mitigating the potential risks posed by climate change to the operation, maintenance, and improvement of the network; g. Develop approaches to the construction, maintenance and operation of the Licence holder's network that are consistent with the government's plans for a low carbon future; h. Take opportunities to influence road users to reduce the greenhouse gas emissions from their journey choices.
Highways England Delivery Plan 2015-2020[8]	Section 6.1.5 Landscape of Highways England's Delivery Plan 2015-20206 identifies key areas of focus for enhancement of the character and quality of the built and natural landscape. One of the 3 key areas of focus directly related to the Scheme is "Promoting schemes that are better integrated with the surrounding environment at a landscape scale, which also deliver associated ecosystem service benefits. We will do this in-line with National Character Area profiles.
Local Policy (Surrey)	
Elmbridge Core Strategy 2011[9]	Includes spatial policy CS14 'Green Infrastructure' the Council will protect, enhance and manage a diverse network of accessible multi-functional green infrastructure by: • Policy: 2. Ensuring new development protects and enhances local landscape character, strategic views and key landmarks as shown on the proposals map, and takes account of their setting, intrinsic character and amenity value. Green Infrastructure Assets; The following areas can form part of networks of Green Infrastructure: • Parks and gardens - including urban parks, country parks and formal gardens; and • Natural and semi-natural urban greenspaces - including woodlands, urban forestry, scrub, grasslands (e.g. downlands, commons and meadows) wetlands, open and running water, wastelands and derelict open land and rock areas (e.g. cliffs, quarries and pits). Spatial policy CS17 - Local Character, Density and Design Elmbridge's unique environment is characterised by its green infrastructure, river corridors, historic assets and distinctive town and village settlements. Particular attention should be given to the design of development which could have an effect on heritage assets which include conservation areas, historic buildings, scheduled monuments, and the Borough's three historic parks and gardens.

[8] https://www.gov.uk/government/publications/highways-england-delivery-plan-2015-2020
[9] https://www.elmbridge.gov.uk/planning/local-plan/

Legislation / Regulation	Summary of Requirements
Guildford Borough Council (GBC) Local Plan 2019[10]	In the GBC Local Plan (2019) policy HE11 scheduled ancient monuments and other sites and monuments of national importance. Policy RE2 development within the Green Belt. (2) Essential facilities for outdoor sport and outdoor recreation, cemeteries and other uses of land which preserve the openness of the Green Belt and which do not conflict with the purposes of including land within it. Policy HE12 Historic Parks and Gardens, Planning permission will not be granted for development which would detract from the character or appearance of a park or garden of special historic interest, or its setting. Permission will not be granted for unsympathetic subdivision.

Table Source: Various

9.4 Assessment methodology

Overview

9.4.1 This section describes the methodology which has been used for the assessment of landscape which may affect, or be affected by, the construction and operation of the Scheme.

9.4.2 No single methodology exists for assessing landscape and visual impact. However, this landscape assessment has been produced in accordance with DMRB Volume 11 Section 3 Part 5[11]: Landscape and IAN 135/10[12] to a detailed level. The assessment has also been informed by the recommendations set out in Guidelines for Landscape and Visual Impact Assessment (GLVIA 3) for the assessment of sensitivity of landscape and visual receptors[13].

9.4.3 Landscape encompasses many more elements than the common association which focuses merely upon the view or appearance of the land. The notion of landscape can be applied to both rural and urban environments with the term townscape frequently adopted within the urban context. From the perspective of EIA, landscape applies to physical elements such as topography, drainage, land use and management, vegetation, as well as ecology and historical and cultural associations.

Baseline Methodology

9.4.4 Both the landscape and visual baseline were established through a desk study, site survey and were further informed by responses to the Scoping Report (TR00031) from stakeholders in the Scoping Opinion in Appendix 4.1. The desk study used mapping and literature in order to gather an understanding of the study area and its surroundings. This included a review of Ordnance Survey mapping, several Landscape Character Assessments at a regional and local

[10] https://www.guildford.gov.uk/newlocalplan/localplan
[11] Highways England (2010) Interim Advice Note 135/10 *Landscape and Visual Effects Assessment* [online] available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/index.htm
[12] Highways England (1993) Design Manual for Roads and Bridges Volume 11 Section 3 Part 5 *Landscape Effects* [online] available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/index.htm
[13] Landscape Institute (2013) *Guidelines for Landscape and Visual Impact Assessment (GLVIA).* 3rd edition

level, and the identification of any key designations that may be affected by the Scheme.

9.4.5 The assessment of visual effects was informed by the selection of key viewpoints within the study area that represent typical or characteristic views. Within the DMRB Volume 11 Section 3 Part 5 and IAN 135/10[14] there is no defined criteria for the selection of key viewpoints. However, after consideration of the Scheme's likely effects key views were selected making use of one or more of the following three criteria:

- The Scheme would be in close proximity to the visual receptor or represents the addition of a new, uncharacteristic element in the view.
- The potential effects are predicted to be significant; and
- The view is expansive covering a large area of the landscape around the Scheme, or is highly valued by users such as a footpath through a part of the landscape with a known historic dimension.

9.4.6 Meeting one or more of the above criteria, however, does not automatically classify a view as a key view. These criteria combined with professional judgment have been applied to determine which views are considered to be key in this assessment.

Impact Methodology

9.4.7 Landscape and visual impacts are determined by several factors, which collectively provide a level of significance of effect.

Landscape Effects

Significance Criteria

9.4.8 The significance of effects upon landscape considers a combination of the magnitude of change and the sensitivity to change of the affected landscape.

Landscape sensitivity and magnitude of landscape impact

9.4.9 The sensitivity of landscape resources/receptors combines judgements of their susceptibility to the type of change or development proposed with the value attached to the landscape. Descriptors for landscape sensitivity are taken from IAN 135/10 and are found in Table 9.2.

9.4.10 For the purposes of the assessment, and in accordance with the relevant guidance contained within Highways England IAN 135/10[15], the landscape sensitivity is divided into three categories, Table 9.2 below lists the landscape sensitivity descriptions.

Table 9.2: Landscape Sensitivity and Typical Examples

Sensitivity	Typical Descriptors and Examples
High	Landscapes which by nature of their character would be unable to accommodate change of the type proposed. Typically, these would be:

[14] Highways England (2010) Interim Advice Note 135/10 *Landscape and Visual Effects Assessment* [online] available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/index.htm
[15] Highways England (2010) Interim Advice Note 135/10 *Landscape and Visual Effects Assessment* [online] available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/index.htm

Sensitivity	Typical Descriptors and Examples
	• Of high quality with distinctive elements and features making a positive contribution to character and sense of place. • Likely to be designated, but the aspects which underpin such value may also be present outside designated areas, especially at the local scale. • Areas of special recognised value through use, perception or historic and cultural associations. • Likely to contain features and elements that are rare and could not be replaced.
Moderate	Landscapes which by nature of their character would be able to partly accommodate change of the type proposed. Typically, these would be: • Comprised of commonplace elements and features creating generally unremarkable character but with some sense of place. • Locally designated, or their value may be expressed through non-statutory local publications. • Containing some features of value through use, perception or historic and cultural associations. • Likely to contain some features and elements that could not be replaced.
Low	Landscapes which by nature of their character would be able to accommodate change of the type proposed. Typically, these would be: • Comprised of some features and elements that are discordant, derelict or in decline, resulting in indistinct character with little or no sense of place. • Not designated. • Containing few, if any, features of value through use, perception or historic and cultural associations. • Likely to contain few, if any, features and elements that could not be replaced.

Source: Based on IAN 135/10

9.4.11 The magnitude of landscape impact is determined by taking into consideration size, scale, geographical extent, duration and reversibility of the works on the landscape resource. Descriptors for landscape magnitude of impact are found within Table 9.3.

Table 9.3: Landscape Magnitude of change upon landscape criteria

Magnitude of Impact	Typical Criteria Descriptors
Major Adverse	Total loss or large scale damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic conspicuous features and elements.
Moderate Adverse	Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic noticeable features and elements.
Minor Adverse	Slight loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements.
Negligible Adverse	Barely noticeable loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements.
No Change	No noticeable loss, damage or alteration to character or features or elements.

Magnitude of Impact	Typical Criteria Descriptors
Negligible Beneficial	Barely noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Minor Beneficial	Slight improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Moderate Beneficial	Partial or noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic and noticeable features and elements, or by the addition of new characteristic features.
Major Beneficial	Large scale improvement of character by the restoration of features and elements, and/or the removal of uncharacteristic and conspicuous features and elements, or by the addition of new distinctive features.

Source: IAN 135/10 Highways England

Assessment of Significance of effect

9.4.12 Effects have been evaluated by combining the assessment of both magnitude (Table 9.3) and sensitivity (Table 9.2) to predict the significance of effect, as shown in Table 9.4 below.. These effects can be beneficial or adverse and temporary or permanent depending on the nature of the development and the mitigation and any enhancement measures proposed.

Table 9.4: Typical Descriptors of Significance of Effect Categories

		Magnitude of Impact				
Landscape Sensitivity		No Change	Negligible	Minor	Moderate	Major
	High	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/Very Large
	Moderate	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate

SOURCE: BASED ON GLVIA, IEMA AND LI, 2013 AND IAN 135/10

9.4.13 Typical descriptors of the significance of effect categories in the matrix are provided in Table 9.5.

Table 9.5: Significance of Effect Categories

Significance Category	Significance Category Typical Descriptors of Effect
Very Large Beneficial (Positive) Effect	The project would: • Greatly enhance the character (including quality and value) of the landscape • Create an iconic high quality feature and/or series of elements. • Enable a sense of place to be created or greatly enhanced.

Significance Category	Significance Category Typical Descriptors of Effect
Large Beneficial (Positive) Effect	The project would: • Enhance the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development. • Enable a sense of place to be enhanced.
Moderate Beneficial (Positive) Effect	The project would: • Improve the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development. • Enable a sense of place to be restored.
Slight Beneficial (Positive) Effect	The project would: • Complement the character (including quality and value) of the landscape. • Maintain or enhance characteristic features and elements. • Enable some sense of place to be restored.
Neutral Effect	The project would: • Maintain the character (including quality and value) of the landscape. • Blend in with characteristic features and elements. • Enable a sense of place to be retained.
Slight Adverse (Negative) Effect	The project would: • Not quite fit the character (including quality and value) of the landscape. • Be at variance with characteristic features and elements. • Detract from a sense of place.
Moderate Adverse (Negative) Effect	The project would: • Conflict with the character (including quality and value) of the landscape. • Have an adverse impact on characteristic features or elements. • Diminish a sense of place.
Large Adverse (Negative) Effect	The project would: • Be at considerable variance with the character (including quality and value) of the landscape. • Degrade or diminish the integrity of a range of characteristic features and elements. • Damage a sense of place.
Very Large Adverse (Negative) Effect	The project would: • Be at complete variance with the character (including quality and value) of the landscape. • Cause the integrity of characteristic features and elements to be lost. • Cause a sense of place to be lost.

Source: Based on GLVIA, IEMA and LI, 2013 and IAN 135/10

9.4.14 In this assessment an effect of Moderate, Large or Very Large is generally considered to be significant.

Visual sensitivity and magnitude of visual impact

9.4.15 The sensitivity of the visual receptors (people) combines judgements of their susceptibility to the type of change in views and visual amenity with the value attached to particular views. The assessment is determined using professional judgement, which relies on a consistent reasoning based on the current guidance including IAN 135/10 and GLVIA 3rd edition.

9.4.16 Visual receptors were categorised by their sensitivity, and included people in their homes, users of Public Rights of Way (PRoW) and other areas of open space or recreational landscapes, people at work and people travelling along roads. Indicative levels and examples are provided in Table 9.6.

Table 9.6: Visual Sensitivity and Typical Examples (from IAN 135/10)

Visual Sensitivity	Typical Criteria
High	Residential properties. Users of Public Rights of Way or other recreational trails (e.g. National Trails, footpaths, bridleways etc.). Users of recreational facilities where the purpose of that recreation is enjoyment of the countryside (e.g. Country Parks, National Trust, Registered Parks and Gardens or other access land etc.).
Moderate	Outdoor workers Users of scenic roads, railways or waterways or users of designated tourist routes. Schools and other institutional buildings, and their outdoor areas.
Low	Indoor workers Users of main roads (e.g. trunk roads) or passengers in public transport on main arterial routes. Users of recreational facilities where the purpose of that recreation is not related to the view (e.g. sports facilities).

Source: IAN 135/10

9.4.17 The magnitude of visual impact is determined by taking into consideration a degree of change in the composition of the view in comparison to the baseline of the view. In determining the magnitude of visual impact, the following has been considered; scale of change, nature of change, duration of change, distance, screening, direction of the view, removal of vegetation and the numbers and type of receptor. The magnitude of visual impact also takes into consideration the potential for introduction of environmental design measures or mitigation measures.

9.4.18 These factors help inform the magnitude of the visual impact as shown in Table 9.7 below, which can be adverse or beneficial.

Table 9.7: Magnitude of Impact and Typical Descriptors

Magnitude of Impact	Typical Criteria Descriptors
Major	The project, or a part of it, would become the dominant feature or focal point of the view.

Magnitude of Impact	Typical Criteria Descriptors
Moderate	The project, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The project, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the project would be discernible, or it is at such a distance that it would form a barely noticeable feature or element of the view.
No Change	No part of the project, or work or activity associated with it, is discernible.

Source: Based on GLVIA, IEMA and LI, 2013 and IAN 135/10

Significance of effects

9.4.19 The evaluation of the significance of the visual effects of the project was derived by assessing the sensitivity of the receptor (Table 9.6) against the degree of change in the view resulting from the project (Table 9.7). These aspects were combined to form a significance matrix as shown in Table 9.8. Typical descriptors of the significance levels in the matrix are provided in Table 9.9.

9.4.20 In general terms, a major magnitude of change on a highly sensitive receptor will produce an effect of high significance, and a minor magnitude of change on a less sensitive receptor will produce an effect of low or negligible significance. Major changes for less sensitive receptors and minor changes for more sensitive receptors can also produce significant levels of effect.

Table 9.8: Significance of Effect Categories (from IAN 135/10)

		Magnitude of Impact				
		No Change	Negligible	Minor	Moderate	Major
Visual Sensitivity	High	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/Very Large
	Moderate	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate

SOURCE: BASED ON GLVIA, IEMA AND LI, 2013 AND IAN 135/10

Table 9.9: Typical Descriptors of the Significance of Effect Categories (from IAN 135/10)

Magnitude of Impact	Typical Criteria Descriptors
Very Large Beneficial	The project would create an iconic new feature that would greatly enhance the view.
Large Beneficial	The project would lead to a major improvement in a view from a highly sensitive receptor.

Magnitude of Impact	Typical Criteria Descriptors
Moderate Beneficial	The proposals would cause obvious improvement to a view from a moderately sensitive receptor, or perceptible improvement to a view from a more sensitive receptor.
Slight Beneficial	The project would cause limited improvement to a view from a receptor of medium sensitivity or would cause greater improvement to a view from a receptor of low sensitivity.
Neutral Effect	No perceptible change in the view.
Slight Adverse	The project would cause limited deterioration to a view from a receptor of medium sensitivity or cause greater deterioration to a view from a receptor of low sensitivity.
Moderate Adverse	The project would cause obvious deterioration to a view from a moderately sensitive receptor, or perceptible damage to a view from a more sensitive receptor.
Large Adverse	The project would cause major deterioration to a view from a highly sensitive receptor and would constitute a major discordant element in the view.
Very Large Adverse	The project would cause the loss of views from a highly sensitive receptor and would constitute a dominant discordant feature in the view.

Source: Based on GLVIA, IEMA and LI, 2013 and IAN 135/10

Consultation

9.4.21 As part of this assessment engagement and discussions on the proposed Scheme, its effects and mitigation proposals have been undertaken with the Forestry Commission, Natural England, Surrey Wildlife Trust, Painshill Park Trust and RHS Wisley. Details of these are found in the Consultation Report (TR010030/APP/5.1).

9.5 Assessment assumptions and limitations

9.5.1 The landscape assessment has been based on the description of the Scheme as detailed in Chapter 2 of this ES.

9.5.2 Not every residential receptor has been addressed. Instead properties were captured as small groups in some instances where one viewpoint would be representative of the most severely affected of the group. In this way, although there is not a separate photographic view for each individual receptor, the assessment covers every receptor expected to be affected by the Scheme.

9.5.3 Photographs were taken to illustrate views from beyond the curtilage of properties, on the nearest publicly accessible roads and footpaths, and do not represent views from within the top floor of dwellings. The predicted influence of the Scheme on views from inaccessible areas are only reported in this assessment if the impacts are expected to differ noticeably from the representative view collected on site.

9.5.4 In this chapter, only landscape and visual elements are assessed. However, it should be noted that there are overlaps between landscape, biodiversity and cultural heritage elements and these are further discussed in Chapter 7 Biodiversity and Chapter 11, Cultural Heritage.

9.6 Study Area

Landscape

9.6.1 Desk top study and site visits were undertaken to inform the extents of the study area for both the landscape and visual effects.

9.6.2 Due to the extent of the works being undertaken which consists of alteration of existing infrastructure and the wooded nature of the surrounding area, it is expected that potentially significant landscape effects from the highway works would be restricted to the land close to the Scheme. The Scheme involves woodland clearance and thinning in the area surrounding the M25 and A3 which would extend the effects. Inn terms of landscape effects the study area has been defined as the area 1.5 km from the DCO Boundary, or further from the edge of the Scheme where deemed relevant. Any effects upon landscape receptors located outside the 1.5 km study area are unlikely to be significant and have been scoped out from further assessments.

Visual

9.6.3 The visibility towards the Scheme is largely restricted by the coniferous and deciduous woodland that surrounds the junction, M25 and A3. Planting of highway earthwork slopes also contribute to the screening of the M25 and A3 to some degree which combined with presence of the existing mature woodlands, creates a dense screen so that the visual impact is currently restricted. For this reason a computer generated Zone of Visual Influence (ZVI) was not prepared as it was felt that it would not provide a reliable and useful indication of the visibility of the Scheme.

9.6.4 When considering the Scheme in the context of the natural and man-made screening elements present around the junction, a study area of 1.5 km from the DCO boundary was considered to be sufficient to identify potentially significant visual effects. Any effects on visual receptors beyond the 1.5 km study area are unlikely to be significant and have been scoped out from further assessment.

9.6.5 Visual receptor groups that have been identified as being assessed are as follows:

- Residential receptors;
- Users of PROW's;
- Users of areas of open space;
- People in places of work; and
- Road users.

9.7 Baseline Conditions

Site Description

9.7.1 The M25/A3 transport corridor is a dominant feature within a wider mixed-use landscape. This landscape is composed of areas of common land and public open space consisting of heathland, woodland, horse paddocks and pasture. There is a network of Public Rights of Way PRoW within the wider study area including links over and under the M25 & A3. There is a network of local roads which link farms, small villages and houses within the study area.

9.7.2 Large residential areas are predominantly located to the north of the M25, these include Cobham and Byfleet. Smaller settlements of Wisley and Ripley lie to the south of the M25. The study area also includes smaller groups of houses, such as at Elm Corner and farms. The landscape context for the Scheme is shown on Figures 9.1 and 9.2.

Relevant Designations

9.7.3 Landscape relevant designations are shown on Figure 9.3. The Scheme is adjacent to Painshill Park, a Grade I registered park and garden (approximately 800m to the north east of junction 10) The main purpose behind this designation is to "celebrate designed landscapes of note and encourage appropriate protection." This designated Park and Garden provides a valuable and locally unique and nationally important designed landscape resource within the wider context of the study area and beyond.

9.7.4 RHS Wisley, a Grade II* registered park and garden is located to the south west of junction 10, adjacent to the northbound A3). The designated area includes the Royal Horticultural Society Gardens at Wisley, formal and informal decorative gardens, several glasshouses and an extensive arboretum and small-scale gardens. This designated Park and Garden provides a nationally important landscape resource.

9.7.5 The statutory designation for both of these Parks and Gardens is for their historic interest. Further detail is provided in Chapter 11, Cultural Heritage and related appendices.

Green Belt

9.7.6 The study area is wholly located within the Green Belt area for both Guildford and Elmbridge Borough Council's. Within Guildford Borough Council's Local Plan the following relevant objectives relating to the Green Belt policy RE1 are listed as:

- To protect the Green Belt from inappropriate development and maintain its openness; and
- To protect the Countryside Beyond the Green Belt from inappropriate development and maintain its openness.

9.7.7 Within Elmbridge Borough Council's Local Plan the following relevant objectives relating to the Green Belt policy CS1 are listed as:

- The Borough's green infrastructure network, including the Green Belt and other open spaces within the urban area, will continue to be a key determinant in shaping settlements and development patterns in the future; and
- The multi-functional role of the network will continue to be protected and enhanced and the Council will work with partners to manage and expand sustainable networks of accessible green space and corridors to, and through, the urban area.

Other areas of public access

9.7.8 There are two areas of Common Land located within the vicinity of the M25 junction 10, Wisley Common located immediately to the south west and Ockham

Common located immediately to the south east of the M25 junction 10 junction. These areas are discussed in detail in Appendix C to the Statement of Reasons (TR010030/APP/4.1).

9.7.9 These Commons are examples of lowland heath which is rare in the South East of England and are nationally important sites for dragonflies and damselflies. These sites also attract many rare birds, including the Dartford warbler, nightjar and woodlark. Further detail is provided in Chapter 7, Biodiversity.

9.7.10 These are large areas that offer recreational opportunities for public access, including formal public rights of way and informal open access areas. As such these areas deliver a valuable environmental resource and which as a landscape receptor is of high sensitivity to change. Visual receptors are users of the Commons, either through use of designated public rights of way or open access therefore both types of use result in a high sensitivity to change.

Woodland

9.7.11 There are extensive areas of woodland as shown on Figure 9.8 which form significant components of Wisley and Ockham Commons. These areas of woodlands extend beyond the boundaries of the Commons and contribute to the landscape character of the wider area. Further detail on these is included in Appendix 7.3.

9.7.12 Parts of these woodlands will be directly affected by the Scheme. The potential impact upon these areas will be discussed within the relevant Potential Impact section.

9.7.13 There are small areas of Ancient Woodland within the study area parts of two of which are located within the DCO boundary and will be directly affected by the Scheme. The potential impact upon these ancient woodland areas will be discussed within the relevant Potential Impact sections.

9.7.14 There are also a large number of veteran trees that lie within the study area, some of which will be lost to the Scheme and others which could potentially be affected but are likely to be retained following further design development work in the next stages of the project. Details of the veteran and other important trees within the study area are provided in Appendix 7.3

9.7.15 Within the study area individual and groups of TPOs are present, these are located both within and outside the DCO boundary. These have been assessed and the current Scheme design is aligned to minimise potential impact upon these. It may be necessary to apply for permission to carry out works to some of these trees. Details of the trees protected by a TPO within the study area are provided in Appendix 7.3

Landscape character

9.7.16 At a national level the Scheme lies on the border of the Thames Basin Heaths and Thames Basin Lowlands character areas with most of the Scheme lying within the Thames Basin Heaths area. As the Scheme is mostly an enlargement of an existing section of highway infrastructure it is not considered that it would noticeably affect these national character areas and assessment at a local level is more relevant. The characteristics identified at a local level are also likely to have more relevance when developing a scheme to respect the local environment.

9.7.17 A county wide Surrey Landscape Character Assessment, which describes various landscape character areas within the county was produced in 2015[16]. Elmbridge Borough Council have used this as the basis of the landscape character areas for their borough. Guildford Borough Council have prepared their own assessment of landscape character and this has been described in Guildford Landscape Character Assessment and Guidance (January 2007).

9.7.18 The following Guildford and Elmbridge Landscape Character Assessment areas lie within the study area:

- SS9 Weybridge Settled and Wooded Sandy Farmland – EBC;
- SW5 Wisley Sandy Woodland (SW5) – Elmbridge;
- LR2 Ockham and Clandon Wooded Rolling Clayland – Elmbridge;
- RF10 Lower Mole River Floodplain – Elmbridge;
- SW6 Fairmile to Esher Sandy Woodland – Elmbridge;
- G2 Wisley Wooded and Settled Heath – Guildford;
- H1 Sand Gravel Terrace - Guildford and; and
- E2 Ockham and Clandon Wooded Rolling Claylands – Guildford.

9.7.19 Of these G2, SS9 and SW5 are the areas most affected by the Scheme. G2 and SW5 largely overlap one another. The key characteristic, attributes and sensitivity of these landscape character areas are summarised in Table 9.10 below. The geographical extent of landscape character areas is shown on Figure 9.4 Local Authority Landscape Character Areas.

Table 9.10: Summary of relevant landscape character areas

Landscape Character Area	Key attributes and qualities of landscape character
G2 - Wisley Woodland and Settled Heath	• A secluded, enclosed landscape of heathland commons lying between the Mole and Wey Rivers, now largely overgrown by secondary woodland; • Substantial areas of mixed woodland and scrub are interspersed with heathland, open water bodies, pasture, parkland and gardens; • Wisley and Ockham Commons are Open Access Land with a network of footpaths and rides through the woodland; • There are few rural roads but the major transport corridors of the A3 and M25 cross the area fragmenting the commons and bringing noise and views of moving traffic; • Sparse settlement pattern of a few farmsteads and cottages plus large houses at Wisley and Foxwarren; • Presence of designed landscapes of Royal Horticultural Gardens at Wisley and Foxwarren Park to the north; • Intermittent views into and through the woodland to pastures, and Presence of heathland.

[16] https://www.surreycc.gov.uk/land-planning-and-development/countryside/strategies-action-plans-and-guidance/landscape-character-assessment

Landscape Character Area	Key attributes and qualities of landscape character
SS9 Weybridge South Settled and Wooded Sandy Farmland	• A largely wooded area, but with significant areas of golf course cut from the woodland to the north-west, north-east, and south-east; • In between the golf courses is a pattern of small, mainly pastoral, rectilinear fields with thick boundary vegetation. A number of these fields are subdivided for paddocks or horticultural uses; • There are a few small areas of ancient woodland, mainly towards the west of the character area, in particular to the north of Foxwarren Park; • Views across this relatively low-lying landscape are highly constrained by woodland and vegetation along boundaries and roads; • The A3 dual carriageway and A245 main road cross through the character area; • Painshill Park is located above the Mole Valley to the south, at the south-eastern end of the character area; and • Limited public access limits opportunity for public appreciation of the intimate landscape.
SW5 Wisley Sandy Woodland	• The character area consist of extensive tracts of mixed woodland and scrub, some areas of common land, open water bodies, and a pocket of small pastoral fields; • Includes a relatively large block of ancient woodland at the south-east corner of the character area; • The Royal Horticultural Society gardens at Wisley are within the south-west corner of the character area, and Foxwarren Park is to the north; • Tree cover confines views generally, however there are distinctive views through the woodland along tracks, clearings within the woodland and across Bolder Mere Lake; • Views of moving vehicles are possible within the vicinity of road corridors through the woodland; • The M25 motorway and A3 cut through the woodland, and form junction 10 of the M25 where they meet, towards the centre on the character area; • Wisley and Ockham Commons are Open Access Land, with a number of informal tracks through the woodland connecting to a network of public rights of way, there are small car parks and other basic facilities for recreational use of the woodlands; • There are a very limited number of isolated dwellings, including a few farmsteads, cottages and large houses at Wisley and Foxwarren, but the character area is mostly unsettled; • Large tracts of the character area are registered as Common Land and Wisley is noted as a historic garden and centre of horticulture; and • Busy roads, including the M25 motorway, fragment the character area and disturb the peace locally. But away from detracting activity, the majority of the wooded character area is peaceful, intimate, and has a sense of remoteness.

9.7.20 These character areas set the context for the landscape character of the area in which the Scheme is located. This assessment takes into consideration the combined characteristic of key qualities, and attributes of landscape character to judge its sensitivity in the assessment section of the report.

9.7.21 Whilst the Scheme is set within an attractive area of distinctive character and which includes areas that are extremely highly valued landscapes, notably Painshill Park and the RHS gardens at Wisley, the effect of the existing M25 and A3 has a significant bearing on the landscape character of the area. As described above the Scheme is surrounded for the most part by mature woodland and other vegetation that serves to enclose the major roads, effectively narrowing down the influence of the highways on the surrounding areas. The study area therefore comprises an attractive landscape of distinctive character which is adversely affected by the presence of major highway infrastructure within it. Based on the descriptors of landscape sensitivity in Table 9.2, and because of the effect of the existing roads, the area in which the Scheme is located can be said for the most part to have a moderate landscape sensitivity with some sections (Painshill Park, RHS Wisley, the commons and the pasture and woodlands away from the major roads) which are of high sensitivity and others where the influence of the M25 and A3 is strongest of low sensitivity. Overall the landscape where the Scheme is to be built could be considered to have moderate landscape sensitivity. The descriptor for moderate sensitivity is: *Landscapes which by nature of their character would be able to partly accommodate change of the type proposed.*

Visual receptors

9.7.22 Visual receptors were identified during the baseline study and include residential properties, PROWs, RHS Wisley RPG, Painshill Park RPG and users of the publicly accessible land (Wisley and Ockham Commons). Viewpoints that represent views from affected receptors were identified and photographs were taken from each representative viewpoint. The locations of these representative viewpoints are shown on Figure 9.9. The photographs from each location are presented on Figures 9.10 to 9.25.

9.7.23 The sensitivity of each receptor would influence the overall significance of effect of the Scheme as defined in Table 9.5. The sensitivity of the visual receptors is detailed in Appendix 9.1 Visual Baseline and Impact Schedules. In this assessment, only highly sensitive receptors have been reported as these represent those most likely to experience significant effects.

9.8 Potential Impacts

9.8.1 This section provides an overview of potential impacts that could result from the Scheme during construction and operation.

9.8.2 The Scheme has the potential to affect landscape and visual receptors, both during construction and during operation. Potential visual receptors are shown on Figure 9.9 Visual Receptors and Viewpoint Locations and detailed assessments of the effects on the them are given in Appendix 9.1.

Construction

Landscape

9.8.3 The key landscape effects are expected to occur during construction. These include the loss of vegetation, alteration to the landform, the presence of construction machinary as well as the introduction of man-made features.

9.8.4 The Scheme is set within a largely wooded area with heathland and farmland also present. Much of the existing woodland abuts the existing highway boundary and hence large areas of vegetation are expected to be to lost to accommodate the Scheme.

9.8.5 The landform around the Scheme has some variations in topography and the Scheme would require the need for some earthworks or retaining walls to accommodate widened or altered roads, new slip roads and PRoW which necessitate in alterations to the existing landform.

9.8.6 Temporary impacts to landscape character during construction could result from:

- The presence of construction plant, materials, machinery, construction compounds and the provision of construction lighting. There could change the local landscape character for a temporary period, being at odds with the existing setting; and
- The removal of vegetation where it is required to facilitate the works including the SPA enhancement works and the works to the replacement land, has the potential to alter the local landscape character within the study area.

9.8.7 The effects of the Scheme on the local landscape character measures has been considered. It is expected that the Scheme would not result in large magnitude of change in landscape character at the national level but there would be noticeable changes at a local level.

Visual effects

9.8.8 Temporary impacts to visual receptors during construction are likely to result from:

- The removal of trees and screening vegetation;
- The formation of temporary spoil areas;
- The formation/construction of roads and structures;
- Movements of construction vehicles;
- The creation of new earthworks and; and
- Creation and operation of site compounds.

9.8.9 The greatest construction impact will occur close to the M25 junction 10 because of the construction operations associated with the reconfigured junction works. Other improvements will be centred on the existing road corridors that currently benefit from a high level of vegetation screening. During construction gaps in the existing vegetation will be created resulting in increased visibility.

9.8.10 Construction operations associated with proposed overbridges or gantries would also be prominent. The alteration of existing views during the construction stage would also occur further away from the junction where, despite the main construction works associated with the M25 junction 10 junction being potentially screened, views of works along the local access roads will be apparent. There will also be effects associated with new planting both adjacent to the highways and also on the replacement and SPA compensation land areas.

Operation

Landscape

9.8.11 During operation, potential impacts to the landscape character are likely to include altered and enlarged highway infrastructure including the enlarged junction 10 roundabout, widened A3, new structures, altered side roads new lighting and traffic on altered roads. There will also be effects associated with environmental proposals associated with the Scheme including new planting, the SPA enhancement and compensation works and the replacement land works. These will develop over time and new planting will have greater effect with maturity. Within the SPA there will be less woodland due to the restoration of heathland but around the major highways and in the replacement land parcels the area of woodland in the long term would be maintained or increased which would restrict views and reduce the adverse effects of the highway improvements.

9.8.12 The impacts of the Scheme have been assessed in accordance with the methodology set out above. The findings take into consideration the potential overall residual effect of the Scheme during both the construction and operational stages. The following sections outline the likely effects of the component parts the Scheme on landscape and visual receptors.

Visual effects

9.8.13 The operational effects will be long term and permanent. The Scheme will introduce environmental design measures and mitigation measures as set out in section 9.9 below to help reduce the effects and provide landscape and visual enhancements. It is expected that the proposed mitigation planting will mature gradually following construction to offset these.

9.8.14 During operation, potential impacts to visual receptors are likely to include the removal of existing vegetation, the widening of the A3, A245 and parts of the M25, associated infrastructure, and passing traffic within a predominantly rural setting with sensitive visual receptors.

9.8.15 The effects of the Scheme during construction and operation on landscape character, on landform and land cover and on visual receptors is described in Section 9.10 below with detail provided in Appendix 9.1.

9.9 Design, mitigation and enhancement measures

9.9.1 The focus of the development of the Scheme has been to minimise the area of land taken for it and considerable effort has been out into designing out adverse impacts by careful alignment of the various elements of the Scheme. This is because the M25 and A3 are surrounded by land designated as Special Protection Area (SPA), Site of Special Scientific Interest (SSSI), registered park and garden common land or public open space as well as several other ecological and heritage designations including scheduled monuments. The Scheme is also largely surrounded by areas of mature woodland and other vegetation that does much to limit its impact on the local area and receptors. For these reasons the Scheme does not include, or in some cases need large areas of additional land for traditional landscape mitigation in the form of tree and shrub planting or earth shaping.

9.9.2 However, a comprehensive package of mitigation, compensation and enhancement measures have been developed for the Scheme to mitigate it's adverse effects. As the landscape, heritage and ecology of the area are closely

linked this package addresses the effects of the Scheme on both of these topic areas. This includes measures within and adjacent to the proposed highway boundary and also within the surrounding area in the Replacement Land, SPA Compensation and SPA Enhancement Areas. A detailed description of the environmental proposals in the latter two areas are described in Chapter 7 Biodiversity. The areas of landscape mitigation are shown on the Scheme Layout Plans (TR010030/APP/2.8).

Mitigation measures

Construction

9.9.3 An Outline Construction Environmental Management Plan (OCEMP) (document reference TR010030/APP/7.2) has been produced to support this Development Consent Order (DCO) application and would be developed into a full CEMP by the appointed contractor.

9.9.4 Impacts on landscape and visual amenity during construction would be reduced by keeping a well-managed and tidy site and compounds. Ensuring materials are delivered to site on an 'as and when' basis would avoid unnecessary stockpiles and would help to reduce construction impacts.

9.9.5 Temporary offices and welfare facilities within site compounds would of a recessive colour to blend in with the local surroundings. Construction lighting would be kept to the minimum luminosity necessary. Where appropriate, lighting would be activated by motion sensors to prevent unnecessary usage. The main site compounds would be lit as required during hours of darkness. Lighting would be directional, and positioned sympathetically, to minimise light spill and disturbance for highly sensitive receptors.

9.9.6 An arboricultural Method Statement would be produced to prevent damage to any vegetation to be retained, veteran trees, trees covered by Tree Preservation Orders and areas of ancient woodland. Topsoil storage areas would be grass seeded to prevent erosion and reduce their impact. At this stage there would be no mitigation planting until the construction works were complete and the possibility of damage by construction activities was past.

Operation

9.9.7 Mitigation for operational effects would include the replacement of planting lost during construction. Swathes of predominantly native tree and shrub species would be introduced along the road corridor helping to reinforce the landscape setting to the linear road corridor. Over time, this vegetation would mature to offer effective screening where required as well as reintegration of the roads into the landscape integration and amelioration of the effects of highway infrastructure.

9.9.8 The following general types of planting are proposed for the Scheme:

- Tree and shrub planting –mixtures of locally native species the proportion of which will vary depending on location within the Scheme. Typical species would include scots pine, silver birch, English oak and sweet chestnut (not native but widely occurring at junction 10) as the climax tree species with an understorey including holly, goat willow, hazel, hawthorn and elder;

- Wood pasture planting – blocks of larger, locally native tree species intended to develop into mature trees forming 20% tree canopy cover. A limited range of species intended to grow into specimen trees would be chosen including English oak, sweet chestnut (see above) and scots pine;
- Scrub planting – a mixture of low growing locally native shrubs and small trees that can be easily managed to maintain a low height vegetated buffer close to the A3 and M25. Typically, this would include holly, goat willow, hazel, hawthorn and elder;
- Heathland establishment – planting and management of local heathland plant types such as common heather and gorse;
- Open grassland – areas of grass established from seed to provide a robust, easily manged ground cover, potentially including a range of wildflower species; and
- Marginal and emergent planting – a mixture of aquatic and water's edge planting on the fringes of existing and proposed ponds and waterbodies. Typical species would include lesser ponds sedge, floating sweat-grass, flag iris, purple loosestrife and marsh marigold.

9.9.9 Further detail on these planting types will be developed in the detailed design stage.

Ockham Park to junction 10

9.9.10 In this section of the route the A3 is close to grade with limited earthworks necessary to accommodate the widening. The highway boundary is therefore close to the edge of the highway kerbs and other elements such as attenuation ponds so the landscape mitigation consists of grassed areas with limited areas of new planting where earthworks and space allow. There would be new areas of tree and shrub planting by the ancient woodland, to the south of the new Wisley Lane overbridge along the RHS Wisley boundary, by the attenuation pond opposite Bolder Mere and near the Bell Barrow scheduled monument by junction 10.

9.9.11 Near the replacement Cockcrow overbridge there would be new areas of low scrub planting along the earthworks for the new restricted byway, between Bolder Mere and Old Lane on land temporarily taken for the Scheme, alongside the new restricted byway near Sandpit Hill and on the area used as a construction compound for the replacement Cockcrow overbridge. These areas will be managed to reintegrate them into the SPA after the construction works are complete.

9.9.12 On the earthworks for the replacement Cockcrow overbridge and adjacent areas the soils would be sown with species rich grasses and heather brash to re-establish heathland on the approaches to the bridge. In combination with measures to enhance the SPA on either side this would provide a suitable habitat for reptiles to access and cross the bridge which includes a ten metre wide strip on the north side where heathland species would be established as a 'green bridge' subject to further design and funding work. Further details on this element of the Scheme are included in Chapter 9 Biodiversity.

9.9.13 Along the Wisley Lane diversion and realignment sections the earthworks would be planted with trees and shrubs to help screen traffic on it and integrate it into

the surrounding area. This would provide a buffer between the new road and the ancient woodland and integrate it into the other sections of the wood designated as common land and also the wooded edge of RHS Wisley. The proposals for landscape mitigation on the west of the A3 would be developed in close consultation with RHS Wisley so that an appropriate entrance to the gardens can be provided.

9.9.14 At the Ockham Bites café the earthworks slopes of the new restricted byway facing the car park would be planted with trees and shrubs to create a more attractive setting for the café.

9.9.15 The construction compound areas would be restored and returned to their original owners as part of the works at the end of the construction phase. The exact nature of the restoration of these areas would be agreed with the owners but as a minimum it would replicate or be capable of leading to the replication of the pre-existing conditions before construction started.

Junction 10

9.9.16 At junction it is expected that much of the existing vegetation within the interchange and all of it around it would be lost to the construction of the Scheme. Replacement of the lost planting would take place on the earthwork slopes within and around the junction as well as on an area of land taken temporarily to the north west. The new restricted byway and attenuation pond earthworks to the east of junction 10 would also be planted and combined these will help to reduce the visual and noise impact of the M25 in this area.

Junction 10 to Painshill

9.9.17 North of junction 10 new tree and shrub planting would take place on available earthworks slopes along the A3. These would serve to reintegrate the A3 with the surrounding vegetation and restore screening over time. The planting would help to reduce the impact of the new Red Hill overbridge, would provide an attractive wooded corridor for the new Long Orchard private access road and Seven Hills Road South extension and provide a buffer between the A3 and the ancient woodland by the Heyswood Girl Guides site.

9.9.18 Further tree and shrub planting would be carried out for landscape integration and screening on the earthworks for the attenuation pond by New Farm, the new Heyswood private access and alongside Feltonfleet school grounds. On either side of the A245 vegetation lost to the widening of the road here would be replaced with new planting.

M25 west of junction 10

9.9.19 West of the junction the proposals the landscape mitigation would predominantly consist of tree and shrub planting on new earthwork slopes to replace the planting lost through the construction of the new slip roads and replacement Clearmount overbridge. Along the westbound carriageway nearest the junction land taken temporarily outside the highway boundary will be planted with small trees and shrubs to form a scrubby edge. This is to compliment the SPA and enable future management for biodiversity. Beyond the replacement Clearmount overbridge the temporarily taken land which was used for topsoil storage would be planted with trees and shrubs to restore a vegetation screen to the M25.

9.9.20 The topsoil storage area north of the M25 taken temporarily would be restored with 'wood pasture' planting which would compensate for the loss of woodland elsewhere in the Scheme whilst allowing continued grazing by the SWT herd.

M25 east of junction 10

9.9.21 East of the junction replacement tree and shrub planting would be carried out on the mainline earthworks slopes to replace the existing planting lost to the widening and new slip roads. The construction compound set up for the new Sandpit Hill overbridge would be restored to form part of the Chatley Wood replacement land area. This would comprise new tree and shrub planting with the aim of creating a new, ecologically diverse woodland to screen the motorway, provide amenity for users of the replacement land. The existing woodland here consists of dense, over mature pines with little ecological value so this would be an enhancement on the current situation in the long term.

Replacement land areas

9.9.22 The environmental proposals within the replacement land area vary according to the level of work needed to facilitate public access, the existing vegetation types and the underlying ground conditions. Native tree and shrub planting in these land parcels will also provide compensation for the small loss of existing ancient woodland required for the construction of the Scheme and will be a major contributor to the overall outcome of limited woodland loss for the Scheme.

9.9.23 For the three parcels at Park Barn Farm

- The damp meadow west of the farm and close to the River Wey will be developed into an informal pattern of native species woodland planting and glades, to enhance the visual interest and variety within the parcel and create habitat links with the adjacent Buxton Wood;
- The large dry meadow to the south of the farm will have some native species tree and shrub planting to create visual and habitat connection to and between the adjacent areas of wooded common land, to the planting in the meadow parcel above and to the ancient woodland in the parcel below. The grassland will be managed to reduce the nutrient levels in the soil and encourage dry grassland and, in time, heathland species to become established; and
- The deciduous woodland parcel east of the farm is covered by a TPO, but will have some selective thinning of a dense stand of birch in the southern part to create openings to link the existing grassland glade through the potential Scots pine clearance areas in the adjacent common land. There is some ancient woodland in the northern part that will be managed carefully to enhance its biodiversity. There will be some native species tree and shrub planting the grassy area within the parcel to enhance habitat and visual links and the remainder of the grassland will be managed as in the parcel above.

9.9.24 For the four parcels at Chatley Farm:

- Chatley Wood Scots pine plantation will have considerable selective tree thinning and some replanting with deciduous woodland species, to create an informal patchwork of woodland with dry and damp glades, whilst being mindful not to disturb the existing [redacted] and to maintain the

remnants of the former dam within the wood. Openings will be created to allow views out across the Mole valley from the higher parts of the wood;

- The Breach Hill Wood parcel will be completely cleared in its western part because of being used for a construction compound; the rest will have considerable selective tree thinning and the whole parcel will have some replanting with deciduous woodland species, to create an informal patchwork of woodland with glades;
- The parcel north of Pointers Road will be managed carefully to enhance the condition of the ancient woodland and adjacent damp meadow; this will include substantial clearance of rhododendron and other non-native species. Some deciduous tree and shrub planting may be needed to maintain the health of the woodland and some planting will be provided in the adjacent field; and
- The parcel south of Pointers Road will have considerable selective thinning of the mature mixed woodland alongside the M25, including removal of non-native species and some replanting with deciduous woodland species, to create an informal patchwork of woodland with glades.

9.9.25 For the two parcels at Hatchford End:

- The overgrown meadow with dense hedgerows will have selective thinning of the overgrown areas to create habitat variety and connections to the adjacent Hatchford Wood, along with some native species woodland planting; and
- The grazing field alongside Old Lane will have new interest provided by areas of native species woodland planting to define the boundary and create glades with a range of habitat types.

Other areas of new planting

9.9.26 The two areas of SPA compensation land would be planted up as wood pasture to provide biodiversity benefits. The long term aim is to provide areas of grazing land with widely spaced large trees to giving an overall canopy cover of around 20% of the area. This type of planting would also be used on the land taken for topsoil storage adjacent to Buxton Wood, north of the M25. Further opportunities for landscape mitigation by agreement with landowners will be explored during the detailed design phase. These are works that are desirable but not essential for the mitigation of the impacts of the Scheme. Exploratory discussions have been held with Surrey Wildlife Trust, Painshill Park and RHS Wisley on potential areas for this type of planting.

Summary

9.9.27 This assessment takes into consideration the potential for reduction of adverse effects through the introduction of environmental design or mitigation measures. Table 9.11 below lists the potential mitigation measures that are proposed for the Scheme:

Table 9.11: Summary of potential mitigation opportunities

Potential Impact	Mitigation Opportunity

Loss of trees, hedgerows and woodland	Selection and refinement of chosen option has reduced these potential impacts. Areas of Ancient Woodland, TPO's and veteran trees have been identified during the assessment and consideration has been given to minimise impacts.
Introduced earthworks for proposed slip roads and overbridges	Profiles will be modelled to fit with the local landscape character. The shallow gradients of slopes and shallow crests of embankments and cuttings would be generally preferred.
Proposed mitigation planting	Including species appropriate to the locations favouring tree species that are suited to the local soil conditions.
Introduction of built elements	Considering the use of appropriate materials and the detailed design that fits the local vernacular.
Impacts upon Registered Parks and Gardens	Providing sensitive solutions to sensitive receptors such as the Listed Registered Parks and Gardens (Painshill and RHS Wisley), this will include, where appropriate, screening planting and/or environmental barriers.

9.9.28 The proposed mitigation for the Scheme is illustrated on the Scheme Layout Plans and the Proposed Scheme Layout Plans.

9.10 Assessment of likely significant effects

Construction

Landscape

9.10.1 The following section provides a description of the likely effects upon the landscape within the study area during the construction period. The majority of direct effects on landscape character, landform and landcover (trees, woodland and other vegetation) would happen during the construction phase of the Scheme. The effects, although occurring during the three-year construction period would be long term or permanent with replacement of mature vegetation by new planting (where possible) taking many decades to achieve a similar level of maturity. The effects on landform and landcover are described below. Further detail is provided in Appendix 9.1 and in Appendix 7.3 which deals with veteran and other important trees. Effects on veteran trees and ancient woodland are also reported in Chapter 7 Biodiversity.

9.10.2 Due to the scale of the Scheme the landscape has been divided into areas which cover the Scheme extents. Landscape character applies to the Scheme as a whole and the effect of the Scheme on landscape character overall is described separately at the end of this section.

Ockham Park to junction 10

9.10.3 At the start of the construction phase site clearance would be undertaken and there would be an immediate effect on landcover along the A3 corridor. The widening of the A3 would require the clearance of a swathe of existing vegetation alongside most of the north and south bound carriageways. The vegetation here is predominantly mature mixed woodland of oak, birch and pine. Although this would immediately widen the road corridor through this area the depth of the woodland here would mean that the current setting of the A3 in a wooded corridor would be maintained.

9.10.4 The clearance for widening would require the loss of a narrow strip of ancient woodland totalling 250m^2 at the southern end of this section alongside the southbound carriageway, just to the south of the new Wisley Lane overbridge. Due to the requirement to connect the widening to the southbound off slip to the Ockham Park junction it has not been possible to align the widening to avoid the ancient woodland and the loss here is unavoidable.

9.10.5 At the Ockham Park junction the main construction compound would be located on an area of farmland used for car boot sales. Within these fields there are areas of scrubby vegetation but also some veteran trees to the western end of the compound and one adjacent to the junction. The scrubby vegetation would be lost to enable the construction of the compound, but the veteran trees would all be retained with the compound facilities being set back from them. Adjacent to the compound there would be loss of scrubby vegetation by the entrance to Mill Lane to accommodate the new attenuation pond. The compound on the former Wisley Airfield would be on existing hard standing and there would be no loss of vegetation. All the existing highway planting at the junction and in the central reservation along the A3 would be retained.

9.10.6 Also at the southern end of this section the widening of the A3 on the northbound carriageway would be achieved without earthworks by the use of a retaining wall within the existing highway boundary. This would ensure that there would be no physical encroachment into the RHS Wisley grounds in this section. Although the existing fairly sparse vegetation on the highway land would be lost, the trees within the RHS Wisley boundary would not be directly affected. A tree condition survey has been undertaken on the trees along this boundary and the results are recorded in Appendix 7.3. The survey indicates the likely effect on the trees here to assess whether they would survive of the changes in ground level in the long term. It is estimated that seven of the trees could be susceptible to changes in ground level either through loss of roots or alterations in soil moisture levels and may need to be removed for long term safety reasons. Further investigations into the root spread of these trees using a technique know as sonic tomography along with further work on the design of the retaining solutions and a more detailed survey of ground levels would be carried out in the detailed design phase to definitively establish the effect on the trees. The trees would be retained if at all possible but if they were deemed unsafe and had to be removed replacement tree planting would be undertaken by agreement with RHS Wisley to compensate for these losses and maintain a screen for views of the A3 in the long term.

9.10.7 The new Wisley Lane diversion itself would pass through an area of mature woodland east of the A3 where it swings round and rises on embankment to cross the A3 so losses here would be unavoidable including one veteran tree. West of the A3 a number of mature trees would be lost where the road descends on embankment adjacent to RHS Wisley to rejoin the existing Wisley Lane and where new access arrangements for the gardens are required.

9.10.8 North of Wisley Lane along the north bound carriageway the widening would initially be achieved without vegetation loss by using the existing layby to accommodate the additional lane. Going further north a strip of the existing vegetation outside the existing highway boundary would be lost all the way up to just south of the Cockcrow overbridge. Here the clearance would increase to accommodate two new drainage attenuation ponds, the forward visibility sightline

on the curve of the A3 and the Hut Hill retaining wall. At the replacement Cockcrow overbridge further losses would be required to accommodate the earthworks for the bridge, the NMU route and access road earthworks, a further attenuation pond and the compound required to build the new bridge. Combined with the thinning associated with the SPA enhancement area here there will be a noticeable change in landcover and landform around the bridge which would make the new structure more visible in the landscape. Also in this section of the route the new Wisley Common restricted byway would be constructed parallel to and approximately xm from the A3 carriageway. It would be built over the proposed gas main diversion would follow an existing track in this area to maintain existing routes for pedestrians and reduce the need for vegetation clearance. Apart from near Hut Hill and Cockcrow it would follow existing landform closely so would entail minimal change to the existing landform.

9.10.9 Along the southbound carriageway two new attenuation ponds either side of the new Wisley Lane overbridge would necessitate the loss of mature woodland and beyond the bridge a narrow strip pf existing woodland would be lost between the new Wisley Lane overbridge and Bolder Mere. At Bolder Mere there would be further losses associated with new drainage outfall and works to the existing dam needed by the widening. The fringe of trees and reeds along the western edge of the waterbody would all be lost where the widened A3 would encroach into the Mere. At the new Cockcrow overbridge there would be significant losses of mature woodland associated with its earthworks, those of the new access road up to it and the new NMU route from the bridge round to the new Sandpit Hill overbridge. Together with the SPA enhancement works this would noticeably alter the landcover and land form here making the new bridge more visible in the landscape. North of the bridge an area of mature pine woodland would be retained between the restricted byway and the new M25 westbound to A3 southbound off slip to help maintain the setting of the junction and screen views of the road and traffic.

Junction 10

9.10.10 The junction is set within an area of mature vegetation. In the south east quadrant this is predominantly mature scots pine, to the north east there is an area of recently thinned birch and oak, to the north west it is mainly birch and to the south west there is a relatively narrow strip of mixed pine and birch with restored heathland beyond. There are veteran trees within the DCO boundary in the south east, north west and north west quadrants. The Scheme requires the construction of temporary slip roads to enable the permanent Scheme to be built whilst the junction is constructed. In the permanent solution the area of temporary slip roads would be reused to accommodate the NMU route, Sandpit Hill earthworks and attenuation ponds/drainage features. This will entail the loss of large areas of the woodland in all quadrants. Within the highway boundary it is expected that the vegetation on the A3 earthworks would be retained but that the vegetation on the M25 earthworks within the roundabout and slip roads would be lost. The combination of earthworks and vegetation removal would have a significant effect on landform and landcover around the junction.

Junction 10 to Painshill

9.10.11 North of the junction the A3 would be widened to 4 lanes in each direction and would require the loss of vegetation on either side all the way up to Painshill but

retaining walls would be built to reduce the encroachment into land on either side and retain vegetation. Retaining walls would be built near the Gothic Tower to reduce the impact on the setting of the listed building, on the opposite side of the A3 here to enable the retention of the existing access road to Long Orchard Farm. There would also be a retaining wall along the southbound carriageway past the ancient woodland near the Heyswood Guides camp which would minimise the loss of woodland here. There are several veteran trees within the woodland and it is expected that these would be retained as a result of introducing the retaining wall but this would need to be confirmed during the detailed design and construction phase. Other retaining walls are proposed to retain vegetation along the southbound A3 on slip where there is an existing Christmas tree plantation.

9.10.12 The new Red Hill overbridge approach embankments and gas main diversion on the west side will not directly affect but have the potential to affect two veteran trees through the effect on their root zones. This will be confirmed during the detailed design and construction phases when it is expected that these will be retained. To the west of the A3 the existing access to Long Orchard would be kept as it is with a retaining wall used to prevent the widened A3 encroaching and taking the existing roadside vegetation here. Further north the widening and extension of the local access road would result in the loss of roadside vegetation and existing woodland near Long Orchard, the former San Domenico site and past the Feltonfleet school grounds. Two veteran trees would be lost here and several others could potentially be affected.

9.10.13 To the east of the A3 a local access road has been aligned along existing tracks and around existing vegetation to minimise tree loss but some losses are unavoidable where this route cuts through the Christmas tree plantation to link to the A3 southbound on slip. The NMU route from this access, back to the Painshill junction would require earthworks to achieve the correct gradient which would entail the loss of part of the Christmas tree plantation. Two mature trees which are covered by a TPO are not directly affected but could potentially be affected through impact on their root zones but this will be confirmed during the detailed design and construction phases when it is expected that these will be retained. A new drainage attenuation pond is proposed near the existing gas compound, adjacent to the ancient woodland. The ancient woodland would be unaffected by the pond but a veteran tree within the ponds footprint on its northern edge could potentially be lost. It is expected that this tree can be retained after further Scheme development in the detailed design phase. The fields at New Farm would be used for topsoil storage during the construction phase but no existing trees would be affected and the field would be restored to its original condition at the end of the construction phase.

9.10.14 The existing highway vegetation between the slip roads south of the Painshill junction would be lost but the trees and shrubs within the roundabout would not be affected. The A245 would be widened to three lanes in each direction and despite the use of retaining walls on either side a narrow belt of woodland and mature trees would be lost here.

M25 either side of junction 10

9.10.15 West of the junction the new slip roads, through junction running works, drainage measures and the replacement Clearmount overbridge would require the

removal of vegetation along this section as far the existing Buxton Wood bridge westbound and from a point between Buxton Wood and Clearmount bridges eastbound. Existing highway vegetation and mature woodland outside the highway boundary would be lost. This would include one veteran tree due to the Clearmount bridge works and a small section of Buxton Wood south of the M25. The topsoil storage compound adjacent to Buxton Wood would be on an existing grassed field and there would be no tree loss. After construction this would be restored and planted as wood pasture to offset losses elsewhere. East of the junction limited earthworks on either side of the M25 would entail the loss of small areas of existing highway planting. The construction compound for the new Sandpit Hill overbridge would require the complete clearance of an area of existing dense mature pine woodland which would be replanted with native trees on completion of construction to form part of the Chatley Wood Replacement Land.

Replacement Land and SPA Enhancement areas

9.10.16 As part of the works to compensate for the loss of common land and public open space three areas of replacement land have been included within the DCO boundary at Park Barn Farm, Chatley Farm and Poynters Farm. Within the first two areas of existing woodland that have not been managed for many years will be subject to a programme of thinning or clearance to restore and enhance ecological value. The Scheme also includes a programme of heathland restoration and habitat enhancement in several parcels of woodland in the Special Protection Area either side of the A3 south of the M25. This SPA enhancement will entail some woodland being completely clear felled and other woodlands being thinned by removal of some trees and shrubs. These works are described in detail in Chapter 9 Biodiversity but they will require significant loss of landcover with approximately 22.5 hectares (ha) of woodland being lost. After the works are complete the landscape and visual impacts of the replacement land and the SPA compensation and enhancement areas would be negligible with these areas being used only by people using the land for walking and horse riding.

Summary of Vegetation Loss

9.10.17 As has been described above there would be a considerable but unavoidable loss of vegetation with the Scheme. This includes a relatively small amount of vegetation of approximately 8 ha within the existing highway boundary and a much larger area of trees and woodland of approximately 48 ha in the surrounding area. Approximately 22.5 ha of the loss is due to the SPA enhancement works described in Chapter 7. This includes two parcels of ancient woodland totalling 0.4 ha and two veteran trees. .As well as the two veteran trees that will definitely be felled a further nine are at risk but are expected to be able to be retained through careful design in later stages of the project. The Scheme has been designed to limit the amount of vegetation loss as far as possible and further reductions in losses may be possible through detailed design later in the project programme.

9.10.18 To offset these losses the Scheme includes approximately 39 ha of new tree and shrub planting. This change must also be considered in the light of the relative maturity of the woodland lost and that of the new planting. Further details of the

type and extent of replacement and new planting is provided in Section 9.9 above.

9.10.19 As noted above some of the losses of woodland are associated with the SPA enhancement works and these are described in Section 7.9 of this ES. These works are required to compensate for the loss of Special Protection Area land to the Scheme and comprise approximately 22.5 ha of felling of mature woodland with restoration to heathland. A further approximately 25 ha of woodland within the SPA would be enhanced by thinning and other management operations with another approximately 20 ha in areas outside the SPA being enhanced in this way. Although this represents a considerable loss of trees and woodland these operations are supported by the relevant statutory environmental and other bodies as these works will enhance the Thames Basins Heaths SPA and increase the biodiversity of land outside the SPA. The losses of vegetation, despite the extensive replacement planting and because of the time taken to reach maturity represent a significant adverse effect of the Scheme.

Summary of Effects on Landscape during Construction

9.10.20 The Scheme, although it has been developed to minimise effects on the surrounding landscape would unavoidably result in the loss of large areas of mature woodland and other vegetation to accommodate the enlarged highways and other infrastructure during the construction phase. There are also other large losses of woodland associated with the SPA enhancement works. The Scheme does include large areas of new planting, heathland creation and woodland management as part of a comprehensive mitigation package but these would not become effective for many years. Further detail on proposed management operations and durations are given in Appendix 7.19 and 7.20 During construction there would be a range of discordant activities and features such as construction compounds and machinery.

9.10.21 Overall, the magnitude of impact on the landscape during construction derived from Table 9.3 above is considered to be **Moderate Adverse** which is described as *'Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic noticeable features and elements'.* Using the matrix in Table 9.4 above the combination of **Moderate Sensitivity** of the landscape as noted in paragraph 9.7.20 above with a **Moderate Adverse** impact this would give a **Moderate Effect** during the construction phase and in the opening year which is considered to be **Significant.**

Visual Effects

9.10.22 Effects during the construction of the Scheme have been assessed for each visual receptor identified in the assessment process or where receptors are so close together that a view can be a reasonably approximated for collection of receptors. The location of each receptor is shown on Figure 9.9 with a description of the existing view from each receptor and the change in that view during construction set out in Table 9.12 below. The Visual Baseline and Impact Schedules contained in Appendix 9.1 provides a further, more detailed description of the change in view and the associated magnitude of impact and significance of effect during construction.

9.10.23 Of the 27 receptors identified, 17 would experience Significant Adverse effects during construction. Of these receptors 17 would experience Moderate Adverse effects, 9 would experience Slight Adverse effects. A summary of effects upon visual receptors, grouped by type is outlined below.

Residential receptors

9.10.24 Of the 11 residential receptors identified, 6 would experience Moderate Adverse impacts resulting in all 6 experiencing Significant adverse effects. The remaining 5 receptors would experience a Slight adverse effect. All the residential receptors affected are within a close proximity to the Scheme, typically 150 metres from the works. The largest impacts during the construction phase would be due to the removal of screening vegetation and the presence of construction plant and machinery within the view. Due to the proximity of the Scheme, the erection of hoarding or screening fencing would not remove impacts to a degree that would further reduce the significance of effect.

Public Rights of Way (including Public Open Space and Designated Common area)

9.10.25 Of the 9 PROW receptors identified, a total of 9 PRoW would experience Significant Adverse effects during construction, all 9 of these would experience Moderate Adverse effects. The largest impacts during the construction phase would be due to the removal of screening vegetation and the presence of construction plant and machinery within the view. Due to the proximity of the Scheme, the erection of hoarding or screening fencing would not remove impacts to a degree that would further reduce the significance of effect.

Registered Parks and Gardens (Wisley Gardens & Painshill Park)

9.10.26 Neither of the Registered Parks and Gardens receptors would experience Significant Adverse effects during construction with both experiencing a Slight Adverse effect. The largest impacts during the construction phase would be due to the removal of screening vegetation and the presence of construction plant and machinery within the views from them. Due to the proximity of these receptors to the proposed Scheme, mitigation would not further reduce the significance of effect.

Places of work

9.10.27 Of the 4 workplace receptors identified, with all 4 experiencing a Slight adverse effect. The largest impacts during the construction phase would be due to the removal of screening vegetation and the presence of construction plant and machinery within the view. Due to the distance of these receptors from the proposed Scheme mitigation options would not further reduce the significance of effect.

Table 9.12: Summary of significant visual effects during construction

Visual receptor number	Visual receptor	Existing view	Proposed view during construction	Effects on visual receptors
1	Users of Wisley Common south west (open access) Located to the south west of junction 10, looking north east. (High sensitivity)	Characteristic existing views from this location are over the open common/ scrub land with mature woodland (mix of birch and pine) in the middle distance. The ground level varies with mounds and Tumulus (Scheduled Ancient Monument) providing elevated positions.	During construction, some elements of the construction activity may be discernible where environmental barriers are removed as part of the construction activities. The magnitude of change of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**
2	Users of Ockham Common (open access) Located to the south east of junction 10, looking north west. (High sensitivity)	Characteristic existing views from this location are over the open common/ scrub land with mature woodland (mix of birch and pine) in the middle distance.	During construction, some elements of the construction activity may be discernible particularly where environmental barriers are removed, resulting in partial views of construction activities. The magnitude of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**
3	Users of Footpath numbers 11 & 12 to the north east of junction 10, looking south/south east. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	During construction of the overbridge some elements of the construction activity may be discernible particularly from users of nearby footpath. Construction activities would form a small component within the wider landscape. The magnitude of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**
4	Users of Bridleway number 544 to the south west of Elm Corner, looking north west. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	During the construction of the local access road some elements of the construction may be discernible, partial and filtered through intervening vegetation. Where views will be available, they would be prominent within landscape. The magnitude of any	**Moderate adverse (Significant)**

Visual receptor number	Visual receptor	Existing view	Proposed view during construction	Effects on visual receptors
			temporary impacts is likely to be **Moderate**.	
5	Users of footpath number 17, looking north east. (High sensitivity)	Existing views are from an elevated position over the road corridor.	During construction the views of construction activities would be prominent as new uncharacteristic features will be introduced including construction machinery, compounds and earthmoving operations. Views will be partial but considerably altered resulting in **Moderate** magnitude of change.	**Moderate adverse (Significant)**
6	Users of footpath number 13, looking west. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	During the construction of the local access road some elements of the construction activities will be prominent in the view. These views would be prominent within an open landscape view. The magnitude of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**
9	Users of Bridleway number 12 to the south west of junction 10. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	During construction, some elements of the construction activities will occupy large part of the view. The visibility would be increased through removal of existing vegetation and widening of the existing highway alignment with associated earthworks. The magnitude of any temporary impacts is expected to be **Moderate**.	**Moderate adverse (Significant)**
10	Receptors are residential users – Elm Lane (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	During the construction of the upgraded byway some elements of the construction may be perceptible to the residents or Elm Corner. The views would be filtered through belt of trees. The magnitude of any temporary impacts is likely to be **Minor**.	**Moderate adverse (Significant)**

Visual receptor number	Visual receptor	Existing view	Proposed view during construction	Effects on visual receptors
15	Receptors are residential users – Pond Farm (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	Partial views of construction operations taking part along the existing alignment of the M25 and the A3 are expected during the construction stage. These will be filtered by intervening woodland and undulating landform, however due to their scale the views will be temporarily altered including views of earthworks formation, progressing works along the highway with potential views of compounds and access tracks resulting in **Moderate**.	**Moderate adverse (Significant)**
16	Receptors are residential users. Views from Bramley Hedge Farm, Long Orchard Farm, Firtree Cottage.	Existing views from this location are filtered through existing mature vegetation.	During construction filtered views of construction works along a short section of the A3 widening are likely to be expected. The views would be partial, short term and filtered by existing vegetation. Most of the Proposed Scheme would be blocked by woodland between Redhill Road and the M25 junction 10 Therefore, a **Moderate** magnitude of change is expected.	**Moderate adverse (Significant)**
20	Views from residential properties at peripheries of Church End and Ockham village	Existing views from this location are filtered through existing mature vegetation.	During construction, partially filtered views are expected from residential properties at Church End. The views will be filtered through dense tree cover around the village and intervening vegetation, however it is expected that construction activities will be noticeable in the view due to the extent of the Proposed Scheme located on raised land in comparison to the receptor location but also through creation of the	**Moderate adverse (Significant)**

Visual receptor number	Visual receptor	Existing view	Proposed view during construction	Effects on visual receptors
			link to the A3 Ockham Park junction resulting in **Moderate** magnitude of change.	
22	Receptors are residential users Views from properties on Hatch Lane	Existing views from this location are filtered through existing mature vegetation.	During the construction of the upgraded byway some elements of the construction may be perceptible to the residents or Elm Corner. The views would be filtered through belt of trees. The magnitude of any temporary impacts is likely to be **Minor**.	**Moderate adverse (Significant)**
23	Gothic tower (Painshill Park)	Existing views from this location are elevated and filtered through existing mature vegetation.	During construction of the overbridge some elements of the construction activity may be discernible from users of within the Registered Parks and Gardens. The construction activities would form a small component within the view. The magnitude of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**
25	Views from public right of way (footpath)	Existing views from this location are filtered through existing mature vegetation.	During construction of the overbridge some elements of the construction activity may be discernible particularly from users of nearby footpath. Construction activities would form a small component within the wider landscape. The magnitude of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**
26	Views from public right of way (footpath)	Existing views from this location are filtered through existing mature vegetation.	During construction of the overbridge some elements of the construction activity may be discernible particularly from users of nearby footpath. Construction activities would form a small component within the wider landscape. The magnitude of any	**Moderate adverse (Significant)**

Visual receptor number	Visual receptor	Existing view	Proposed view during construction	Effects on visual receptors
			temporary impacts is likely to be **Moderate**.	
27	Views from residential receptor Murrays Lane	Existing views from this location are filtered through existing mature vegetation and environmental barrier.	During construction of the gantry elements the construction activity may be discernible. Construction activities would form a small component within the wider landscape. The magnitude of any temporary impacts is likely to be **Moderate**.	**Moderate adverse (Significant)**

Operation

9.10.28 The following paragraphs provide a description of the likely effects upon the landscape within the study area during operation. During operation the Scheme is assessed at Year 1 and Year 15 after the competition of the proposed works and includes the environmental mitigation works detailed on the Scheme Layout Plans and described in Section 9.9 above.

Landscape

Ockham Park to junction 10

9.10.29 Once construction was complete the Scheme would be fully opened to traffic and there would be an additional lane of the A3 in each direction which, with traffic moving on it would bring the effects of the road closer to the surrounding area. It would take some years until the mitigation planting becomes effective in restoring the screening and lessen the impact on the local area. The impact of the Scheme and traffic on it would be largely confined to the existing road corridor, but new effects would be felt from the Wisley Lane diversion which would bring traffic to the eastern side of the woodland here. This impact would be reduced where it passes through the wooded common land but where it crosses the A3 traffic would be more visible again, particularly for users of the A3. This effect would be lessened over time as new planting along the road matures.

9.10.30 Along the A3 the existing central reserve lighting would be replaced by lighting in the verge. The number of light units would be similar to the existing situation but there would be twice the number of light columns than at present. Again, this would slightly increase the effect of the road corridor in the immediate surrounding area and because of the height of the lighting columns this would take many years to reduce. Similarly, the introduction of new gantries along the A3 would increase the impact of the road with five new gantries spanning the whole of the A3 between Ockham Park junction and junction10 and three new cantilever gantries over one carriageway of the A3. Two existing gantries on the northbound carriageway would be retained. The users of the bridleway between Ockham Park junction and junction 10 would have negligible effect and this route would not be lit. The deep belts of woodland that line much of the A3 here would still serve to limit the effect of the road on the surrounding area.

Junction 10

9.10.31 The completed junction 10 will be significantly larger than the current layout and in operation the effect of traffic on the immediately surrounding area will be increased. The provision of new environmental barriers to mitigate noise effects around the junction will also serve to mitigate this landscape effect by screening views of vehicles at the junction to some extent. As the replacement planting matures the impact of the enlargement of the junction will reduce further. The belts of existing woodland will still serve to limit the effect of the enlarged junction from the wider area but the existing A3 flyover crossing over the roundabout will still be the dominant feature in the landscape and this is unchanged from the present situation.

Junction 10 to Painshill

9.10.32 The widening of the A3 will bring road infrastructure and traffic closer to receptors on either side of this section of the route. The central reserve lighting columns would be replaced with verge mounted lights so there will be approximately twice the number of columns as existing. Five new gantries that will span both carriageways of the A3 will be installed as well as new roadside direction signs. Despite the retention of much of the surrounding vegetation, which is helped by the use of retaining walls to restrict the widening needed, together these will lead to increased landscape impact this area. The new Red Hill overbridge would also be a new element in views in the area and would potentially be visible (through trees) from the Gothic Tower and Foxwarren Cottage. The operational effects of the local access roads provided on either side of the A3 is expected to be very limited as they would not be lit and the number of vehicles using them is expected to be very small. Although the A245 would be widened and the traffic on it would increase the surrounding woodland vegetation limits the impact on the surrounding landscape.

M25 either side of junction 10

Although the extent of the M25 carriageways and slip roads would be extended the increased impact of this infrastructure and traffic is limited. Replacement environmental barriers would screen views of cars immediately and new planting would screen and integrate the road in the longer term. The existing central reserve lighting would be replaced by verge mounted units so there would be an increase in columns, if not light units themselves. To the east of the junction two existing superspan gantries (over both carriageways) would be removed but two new ones installed so there would be no net change in impact. On other gantries signage would be altered but this would have negligible effect. These works would not extend beyond the highway boundary or require any noticeable vegetation loss. West of junction 10, three new superspan gantries would be installed but an existing superspan gantry and a gantry over the eastbound carriageway near the junction would be removed. The replacement Clearmount overbridge would have a similar impact as the existing structure whilst the new Sand Pit Hill overbridge is in a location surrounded by mature woodland so would have little impact on the surrounding area.

Summary of Effects on Landscape Character

Highway corridor

9.10.33 As described in section 9.7 above the character of the area is heavily influenced by the presence of the M25 and A3 particularly through the noise levels associated with the traffic using them but also visually, with moving vehicles and the infrastructure of bridges, signs and lighting. However, the setting of these roads within a woodland, heathland and farmland environment does much to mitigate these effects and the visual effect on landscape character is contained by the mature vegetation surrounding much of the Scheme. Noise barriers along much of the M25 through this section also mitigate some of the worst visual effects of traffic and noise on the surrounding area.

9.10.34 The design of the Scheme has sought to limit wherever possible the physical extent of the alterations to the roads and junction. The junction itself has been enlarged in its existing location with the gyratory being increased by building new bridges over the M25. The A3 has been widened on its existing alignment and the new free flow slip roads are as in close proximity to the junction as possible. Alterations to side roads and accesses have been designed to minimise landtake and loss of vegetation. Through this approach it was intended to restrict the influence of the Scheme on the surrounding area.

9.10.35 Losses of the mature vegetation that helps to screen the highways from much of the surrounding area is unavoidable and inevitably the impact of the Scheme on the surrounding area will be increased. This is exacerbated by the introduction of new gantries, signs and bridges on the M25 and A3 which will increase the effect on the surrounding landscape. The Scheme itself does not however introduce a new discordant element into the landscape, which is already heavily influenced by both major roads and junction. The character of the area is therefore not fundamentally changed by the Scheme but it is worsened by it. This is particularly true in the short to medium term when the vegetation clearance necessary to construct the Scheme has not been mitigated by replacement

planting. The Scheme will for many years leave a wider, more open road corridor.

Replacement land and SPA enhancement areas.

9.10.36 A further influence of the Scheme on the area is the works to enhance the Special Protection Area which will entail clearance and thinning of woodland parcels in the area south of the M25. Around 45ha of woodland would be thinned or managed with the Scheme and approximately twenty two ha would be clear felled as part of the SPA enhancement works. This will have a significant effect on the character of the area in which the Scheme is set making it more heathland rather than woodland in character. The SPA works would take place away from the immediate road corridor to ensure that the wooded setting of the roads themselves is largely unaffected and the visual screening by trees is maintained.

9.10.37 Historically the area has been heathland in character with the John Roque map of 1768 (an extract of which is included on Figure 9.6) showing the area largely dominated by heath with Ockham Heath noted in the area now occupied by Ockham Commom. The 1816 OS map (Figure 9.7) also shows the area indicated as heathland with relatively few pockets of woodland shown. It is said that Thomas Hamilton took advantage of the Inclosure Acts that allowed common land (often heathland or other “waste”) to be privatised to acquire the land needed to build Painshill Park. The commons have been places with poor soil fertility and their uses by commoners for grazing and gathering materials such as heather, bracken and firewood for domestic purposes maintained it as heathland. It is only in recent times with the demise of commoner’s activities that the character of the area has begun to change. Mapping produced by Surrey Wildlife Trust shown on Figure 9.5 Wisley and Ockham Commons – Vegetation Comparison Between 1948 and 2011 illustrates how the original open heathland that was present in 1948 has slowly changed with the introduction of plantation woodlands with open heathland remaining only in the western part of Wisley Common and the southern part of Ockham Common by 1999.

9.10.38 In recent years SWT, the body responsible for managing the Thames Basin Heaths SPA in Surrey, have undertaken measures to restore and maintain the heathland by clearing trees but much of the woodland remains in place. The changes to landscape character with the Scheme would be at odds with the character that has developed over many decades since the second World War but it can be seen as re-establishing the historically existing landscape character type which has been in decline for many years. Although this change may be seen as a negative impact by some users of the area who have become accustomed to the attractive blocks of mature woodland within the landscape, the restored heathland is attractive in a different way. Much of the existing woodland will be retained and much of the SPA enhancement will only entail thinning of the existing woodland so some elements of the wooded character will remain.

9.10.39 The Scheme includes parcels of land in three areas totalling approximately 40 ha in all (at Park Barn Farm, Chatley Farm and Hatchford End) which are provided to replace the common land and open space that would be lost. These lie outside the boundary of the Thames Basin Heath SPA and are currently privately owned and manged as partly agricultural, partly amenity land for the benefit of

the landowner. These will be developed and manged primarily to provide benefit for users of the common land and will include new tree planting and management of existing woodlands. As such the character of these areas will alter somewhat from their existing condition which is largely pasture or grazing land. Although much of the land under grass would remain and be maintained as grass the proposals include significant areas of tree planting to offset the losses elsewhere in the Scheme and to provide amenity and habitat benefits. This change to a more wooded landcover is entirely in keeping with the character of the non-heathland parts of the area and although it would be a change it is not expected to alter the character of the area.

Summary of Effect on Landscape during Operation

9.10.40 In the operational phase the vegetation losses and discordant construction activities would be complete and the mitigation and restoration works will have been put in place. The tree felling and thinning as part of the SPA enhancement works would have taken place and heathland management operations would begin to take place. The landscape around the highways would begin to recover and the SPA enhancement and compensation areas and the replacement land would begin to develop. The restoration and development of the heathland landscape would be seen as a beneficial by some users of the commons and open space with a moderate beneficial effect. The adverse impact of the Scheme from the activities during the operational phase would diminish and the magnitude of impact, taking account of the beneficial effects of heathland restoration for some users would reduce to **Minor Adverse** by Year 15 after opening and would continue to reduce thereafter. Together with the **Moderate Sensitivity** of the landscape as noted in paragraph 9.7.20 above and using the matrix in Table 9.4 this would indicate a **Slight Adverse** effect which is considered to be **Not Significant.**

Visual

9.10.41 Effects during operation of the Scheme have been detailed for each visual receptor identified in the assessment process or where receptors are so close together that a view can be a reasonably approximated for collection of receptors. The location of each receptor is shown on Figure 9.9 with a description of the existing view from each receptor and the change in that view during operation set out in Table 9.13 below. The Visual Baseline and Impact Schedules contained in Appendix 9.1 provides a further, more detailed description of the change in view and the associated magnitude of impact and significance of effect during construction.

9.10.42 Of the 27 receptors identified, 9 would experience Significant Adverse effects during Year 1 of operation. Of these all 9 would experience a Moderate Adverse significance of effect. 17 would experience Slight Adverse effects, 1 would experience Neutral effects. By Year 15 of operation, mitigation planting would have matured to aid the integration and screening of the Scheme and the surrounding area. This would result none of the 27 receptors experiencing Significant Adverse effects, with 18 experiencing Slight Adverse and 9 Neutral effects. A summary of effects upon visual receptors, grouped by type is outlined below.

Residential receptors

9.10.43 Of the 11 residential receptors identified none would report significant effects during the Year 1 operational phase, 10 would experience a Slight Adverse effect and 1 would experience a Neutral effect. By Year 15 of operation 4 would experience Slight Adverse effects and 7 would experience Neutral effects. All the residential receptors affected are within a close proximity to the Scheme, typically 150 metres from the works.

Public Rights of Way (including Public Open Space and Designated Common area)

9.10.44 Of the 9 receptors identified, 7 would experience Moderate Adverse effects during Year 1 of operation, with 2 experiencing Slight Adverse effects. By Year 15 of operation all 9 would experience Slight Adverse effects, none would report significant effects during the Year 15 operational phase.

Registered Parks and Gardens (Wisley Gardens & Painshill Park)

9.10.45 Of the 3 receptors identified 2 would experience a Moderate Adverse significance of effect resulting in a Significant effect, 1 would experience a Slight Adverse significance of effect. By Year 15 of operation all 3 would experience a Slight Adverse significance of effect and none would report significant effects.

Places of work

9.10.46 Of the 4 receptors identified none would report significant effects during the Year 1 operational phase with all 4 experiencing a Slight Adverse significance of effect. By Year 15 2 would experience a Slight Adverse significance of effect and the remaining 2 would experience a Neutral significance of effect.

Road Users

9.10.47 The Scheme would have a Moderate Adverse effect to road users around junction 10, A3 and M25 during the construction phase due to the loss of amenity planting and the changes to the landscape. The replacement planting in year 1 would not have matured to reduce the likely effect. By the time the planting has matured in year 15 this will partially mitigate the impacts resulting from the construction phase. Introduced elements such as gantries and overbridges will remain visible components to road users. The mitigation would reduce the likely reduce to Slight Adverse effect.

9.10.48 The users of the associated side roads will experience a Slight Adverse effect due to the presence of construction vehicles and access routes. The replacement planting in year 1 would not have matured to reduce the likely effect. By the time the planting has matured in year 15 this will partially mitigate the impacts resulting from the construction phase. The mitigation would reduce the likely reduce to a Neutral effect.

Table 9.13: Summary of significant visual effects during operation

Visual receptor number	Visual receptor	Existing view	Proposed view during operation	Effects on visual receptors
1	Users of Wisley Common south west (open access) Located to the south west of junction 10, looking north east. (High sensitivity)	Characteristic existing views from this location are over the open common/ scrub land with mature woodland (mix of birch and pine) in the middle distance. The ground level varies with mounds and Tumulus (Scheduled Ancient Monument) providing elevated positions.	Year 1 It is expected that views would be similar to those currently experienced, however the motorway corridor would encroach onto the Wisley Common area. The access track may be wider than the current layout including passing places. The magnitude is likely to be **Minor**. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor. The magnitude is likely to be **Minor**.	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**
2	Users of Ockham Common (open access) Located to the south east of junction 10, looking north west. (High sensitivity)	Characteristic existing views from this location are over the open common/ scrub land with mature woodland (mix of birch and pine) in the middle distance.	Year 1 It is expected that views would be slightly altered as a result of the motorway corridor being widened and encroaching into Ockham Common. The magnitude is likely to be **Minor**. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor. The magnitude is likely to be **Minor**.	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**
3	Users of Footpath numbers 11 & 12 to the north east of junction 10, looking south/south east. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	Year 1 It is expected that views would be changed as a result of the introduction of the overbridge, however this would form a small component within the wider landscape, that cannot be easily mitigated. The magnitude is likely to be **Minor**. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**

Visual receptor number	Visual receptor	Existing view	Proposed view during operation	Effects on visual receptors
			of the proposed encroachment of the road corridor and associated components. The magnitude is likely to be **Minor**.	
4	Users of Bridleway number 544 to the south west of Elm Corner, looking north west. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	Year 1 It is expected that the introduction of the local access road would introduce a new component into the landscape, however as majority of the road would follow the existing road alignment which combined with the introduced environmental design measures would result in **Minor** magnitude of change. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor and associated components. The magnitude is likely to be **Minor**.	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**
5	Users of footpath number 17, looking north east. (High sensitivity)	Existing views are from an elevated position over the road corridor.	Year 1 It is expected that the introduction of the Proposed Scheme would increase the size of the existing highway component of the view within the landscape. Although views would be prominent the effects will be reduced through the introduction of environmental design measures. The magnitude of change is likely to be **Minor**. Year 15 It is expected that the proposed mitigation planting will have matured and reduced the impact from the proposed changes to the views. The magnitude is likely to be **Minor**.	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**
6	Users of footpath number 13, looking west. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	Year 1 It is expected that the introduction of the local access road would introduce a new component into the landscape. As some of the Scheme elements will be elevated to create a	Year 1 **Moderate adverse (Significant)**

Visual receptor number	Visual receptor	Existing view	Proposed view during operation	Effects on visual receptors
			links with the A3 Ockham Park junction, the effects will only be partially reduced through the introduction of the environmental design measures resulting in **Minor**. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor and associated components. The magnitude is likely to be **Minor**.	Year 15 **Slight adverse**
8	Users of the gardens within Painshill Park, views south and west within the gardens. (High sensitivity)	Existing views from this location are filtered through existing mature boundary vegetation.	Year 1 It is expected that views would be changed as a result of introduced overbridge; which would form a small component within the wider landscape resulting in **Minor** magnitude of change. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor and associated components. The magnitude is likely to be **Negligible**.	Year 1 **Slight adverse** Year 15 **Slight adverse**
9	Users of Bridleway number 12 to the south west of junction 10. (High sensitivity)	Existing views from this location are filtered through existing mature vegetation.	Year 1 It is expected that views would be similar to those currently experienced, however the motorway corridor would encroach the lower parts of Red Hill resulting in **Minor** magnitude of change. Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor and associated components. The magnitude is likely to be **Negligible**.	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**

Visual receptor number	Visual receptor	Existing view	Proposed view during operation	Effects on visual receptors
23	Gothic tower (Painshill Park)	Existing views from this location are elevated and filtered through existing mature vegetation.	Year 1 It is expected that views would be changed as a result of introduced overbridge; which would form a small component within the wider landscape resulting in **Moderate** magnitude of change Year 15 It is expected that mitigation planting would have matured by year 15, this will have the effect of reducing the likely impact of the proposed encroachment of the road corridor and associated components. The magnitude is likely to be **Negligible**.	Year 1 **Moderate adverse (Significant)** Year 15 **Slight adverse**

Residual effects

9.10.49 Residual effects have been defined as those environmental effects predicted to remain after the application of any necessary mitigation. Significant effects are those that have an irreversible effect and that cannot be altered once operational.

9.10.50 In relation to this Scheme and identified mitigation measures, there should be no significant residual effects upon the identified receptors by Year 15 of the operational period.

9.11 Cumulative effects

9.11.1 The cumulative effects are those that result from the additive impacts of both the Scheme's components, and any past, present or future developments within the surrounding landscape. These effects should be considered both during the construction and operation stages. Following a programme of landscape and visual evaluation undertaken to further understand the impact of the Scheme, assessment of cumulative effects has been undertaken in this section.

Table 9.14: Cumulative effects

Other Scheme	Cumulative impact on assets affected by Scheme	Additional significant construction effects	Additional significant operation effects
M25 Junction 10 - 16 Smart Motorway Programme (SMP) - M25 junction 10 to junction 16 includes upgrading the M25 between junction 10 (A3) and junction 16 (M40) through a mixture of enhancements, including hard shoulder running between junctions 15 and 16, as well as four-lane through-junction running between junction 10 and junction 12	None anticipated. Work will be within the existing motorway footprint and have limited potential to impact known landscape and visual receptors, either directly or indirectly.	None anticipated	None anticipated
Former San Domenico Restaurant (Planning Ref. 2017/0524) (validated 21st March 2017)	The Scheme may impact road users (visual receptors) this would be seen within the context of the highway corridor. No cumulative impacts are anticipated.	None anticipated	None anticipated
The former Wisley Airfield (Planning Ref. 15/P/00012	The Scheme may create impacts upon landscape and visual receptors including road and PROW users (visual receptors). This scheme would form a major component within the wider landscape.	Potentially significant adverse effects	Potentially non-significant adverse effects
Nutberry Fruit Farm (Planning Ref. 17/W/00068)	None anticipated, proposed works would be of a sufficient distance	None anticipated	None anticipated

Other Scheme	Cumulative impact on assets affected by Scheme	Additional significant construction effects	Additional significant operation effects
	away from the Scheme and of a small scale to not have any potential impacts on receptors either directly or indirectly.		
Royal Horticultural Society Gardens – Wisley (Planning Ref. 16/P/01080)	The Scheme would involve the demolition of existing buildings and the erection of proposed buildings. This scheme may create impacts upon visual receptors including road users accessing Wisley Lane, the majority of these impacts would occur during the construction phase.	Potentially non-significant adverse effects	None anticipated
Royal Horticultural Society Gardens – Wisley (Planning Ref. 16/P/00976)	The Scheme would involve the demolition of existing buildings and the erection of proposed buildings. None anticipated, proposed works would be of a sufficient distance away from the Scheme and of a small scale to not have any potential impacts on receptors either directly or indirectly.	None anticipated	None anticipated
Painshill Farm, Portsmouth Road (Planning Ref. 2016/4204	The Scheme would involve the demolition of existing housing and erection of a 70 bed care home. This scheme may create impacts upon visual receptors including road users accessing A245, the majority of these impacts would occur during the construction phase.	Potentially non-significant adverse effects	None anticipated
Feltonfleet School, Byfleet Road (Planning Ref. 2017/2106	The Scheme would involve the demolition of existing buildings and erection of proposed school buildings. This scheme may create impacts upon visual receptors including road users accessing A3 & A245, the majority of these impacts would	Potentially non-significant adverse effects	None anticipated

Other Scheme	Cumulative impact on assets affected by Scheme	Additional significant construction effects	Additional significant operation effects
	occur during the construction phase.		

9.12 NPSNN compliance

9.12.1 The following sections 5.143, 5.144, 5.145, 5.146, 5.149, 5.158, 5.159, 5.160, 5.161, 5.162, 5.163, 5.164, 5.184 & 5.185 are relevant to this assessment and listed below:

- 5.143 ‘The landscape and visual effects of proposed projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development. In this context, references to landscape should be taken as covering seascape and townscape, where appropriate’.
- 5.144 ‘Where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts in the environmental impact assessment and describe these in the environmental assessment. A number of guides have been produced to assist in addressing landscape issues.102 The landscape and visual assessment should include reference to any landscape character assessment and associated studies, as a means of assessing landscape impacts relevant to the proposed project. The applicant’s assessment should also take account of any relevant policies based on these assessments in local development documents in England’.
- 5.145 ‘The applicant’s assessment should include any significant effects during construction of the project and/or the significant effects of the completed development and its operation on landscape components and landscape character (including historic landscape characterisation)’.
- 5.146 ‘The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation’.
- 5.149 ‘Landscape effects depend on the nature of the existing landscape likely to be affected and nature of the effect likely to occur. Both of these factors need to be considered in judging the impact of a project on landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints, the aim should be to avoid or minimise harm to the landscape, providing reasonable mitigation where possible and appropriate’.

- 5.158 ‘The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development. Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast, especially those defined as Heritage Coast.
- 5.159 ‘Reducing the scale of a project or making changes to its operation can help to avoid or mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design or changing the operation of a proposed development may result in a significant operational constraint and reduction in function. There may, be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in scale or function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape effects outweigh the marginal loss of scale or function.
- 5.160 ‘Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure, design (including choice of materials), and landscaping schemes, depending on the size and type of proposed project. Materials and designs for infrastructure should always be given careful consideration’.
- 5.161 ‘Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site, although if such landscaping was proposed to be consented by the development consent order, it would have to be included within the order limits for that application. For example, filling in gaps in existing tree and hedge lines would mitigate the impact when viewed from a more distant vista.
- 5.162 ‘Access to high quality open spaces and the countryside and opportunities for sport and recreation can be a means of providing necessary mitigation and/or compensation requirements. Green infrastructure can also enable developments to provide positive environmental and economic benefits’.
- 5.163 ‘The re-use of previously developed land for new development can make a major contribution to sustainable development by reducing the amount of countryside and undeveloped greenfield land that needs to be used. However, this may not be possible for some forms of infrastructure, particularly linear infrastructure such as roads and railway lines. Similarly for SRFIs, brownfield land may not be economically or commercially feasible’.
- 5.164 ‘Green Belts, defined in a development plan, are situated around certain cities and large built-up areas. The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence. For further information on the purposes and protection of Green Belt see the National Planning Policy Framework’.

- 5.184 ‘Public rights of way, National Trails, and other rights of access to land (e.g. open access land) are important recreational facilities for walkers, cyclists and equestrians. Applicants are expected to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other public rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve access. In considering revisions to an existing right of way consideration needs to be given to the use, character, attractiveness and convenience of the right of way. The Secretary of State should consider whether the mitigation measures put forward by an applicant are acceptable and whether requirements in respect of these measures might be attached to any grant of development consent’.
- 5.185 ‘Public rights of way can be extinguished under Section 136 of the Act if the Secretary of State is satisfied that an alternative has been or will be provided or is not required’.

9.13 Monitoring

Construction

9.13.1 The CEMP (document reference TR010030/APP/7.2) sets out the monitoring requirements and procedures to reduce or eliminate impacts on the environment during the construction phase of works. An Environmental Clerk of Works or Site Environmental Manager would be appointed to ensure that objectives of the CEMP are achieved. The Environmental Clerk of Works or Site Environmental manager would be required to monitor construction activities that would cause likely significant effects including:

- The effectiveness and suitability of root protection fencing ensuring no impacts to trees that are to be retained. The areas of most concern are Areas of Ancient Woodland, areas covered by TPO’s and Veteran trees;
- Working hours of operation of the main works and in site compounds which may produce visual, noise or lighting impacts in particular on adjacent residential receptors and users of Wisley and Painshill Registered Parks and Gardens; and
- The angle and direction of night time lighting, to ensure that it is not directly focussed on adjacent residential receptors.

Operation

9.13.2 In order to enable the proposed planting regime to establish and mature to fulfil its environmental, landscape and visual function it is necessary to ensure that an appropriate management regime is undertaken. The specification for this Scheme identifies a 5-year maintenance regime to ensure the establishment and maintenance of the Scheme. A further period of management is proposed to ensure the continued successful establishment of the proposals with details are set out in the Landscape and Ecological Management Plan (LEMP) in Appendix 7.20 and in the SPA Management and Monitoring Plan Appendix 7.19. These would be funded by Highways England as part of the Scheme. A programme of monitoring visits and reports would be carried out during the maintenance and management periods. Remedial operations identified by the monitoring required to ensure the success of the planting and management proposals would be

carried out. The results of the monitoring and any remedial operations would be shared with Surrey Wildlife Trust, Natural England, Forestry Commission and the Woodland Trust. Agreement on successful establishment with these bodies would be confirmed before handover to the body responsible for future management of the works.

9.13.3 A Handover Environmental Management Plan (HEMP) forms part of Highways England's package of documents required for every project and is noted in DCO Requirement 3. It would be prepared at the end of the maintenance and management periods set out in Appendices 7.19 and 7.20 to identify and stipulate the appropriate long-term management goals and requirements for the planting and managed woodlands to achieve the objectives.

9.14 Summary

9.14.1 The Scheme is surrounded by areas of woodland, heathland and agricultural land. The published landscape character assessments by Guildford and Elmbridge reflect these features. The land around the Scheme is designated as common or access land and so is well used by the public for informal recreation. There are two Registered Parks and Gardens at either end of the A3 at Painshill Park and RHS Wisley both of which attract many visitors.

9.14.2 The A3 and M25 are dominant elements in the landscape which detract from the attractiveness of the area. They create significant visual impact on the area, although this is ameliorated to some degree by the surrounding vegetation and the noise impacts also make the area less appealing for visitors and residents.

9.14.3 The Scheme has been designed to avoid or reduce as far as practicable the adverse effects associated with improvements to this major highway interchange. Adverse effects are however unavoidable, and the Scheme would require the loss of extensive areas of woodland and other vegetation to enable the Scheme to be built with approximately 56ha of woodland around the M25 and A3 needing to be felled. This would include the loss of 0.40 ha of ancient woodland and two veteran trees. haThese losses would lead to a significant adverse impact on the existing landcover which would only be mitigated or compensated for in the medium to long term as new planting establishes. There would be relatively little impact on the landform of the area with mostly small scale earthworks and extensive use of retaining walls to limit the extent of land take and impact on the surrounding area.

9.14.4 The losses of planting and the construction of the Scheme would affect the character of the area. Existing landscape character studies have identified that the area has great value with parts that are very sensitive to change, notably RHS Gardens at Wisley and Painshill Park but also the attractive commons that surround much of the Scheme. The influence of the M25 and A3 does notably detract from the area both visually and audibly and these highways now form an intrinsic part of the character of the area. As such the effects of the highway works on landscape character would not be as significant as they would if there were no existing highways in the location.

9.14.5 The Scheme includes extensive areas of land to offset the loss of parts of the Thames Basin Heath Special Protection Area. As part of the proposals, extensive areas of existing, mostly mature pine woodland that have developed since 1945 would be felled to restore heathland and enhance the SPA. This

would cause a notable change to the current landscape character of the area. However, the change can be seen as restoring the historical landscape character that existed before the middle of the 20th century. As such this change is seen as a neutral effect, being considered adverse by some and beneficial by others.

9.14.6 The Scheme also includes extensive areas of land to replace common land and public open space that would be lost. Approximately 39 ha of replacement land would be provided, and this would be managed for public access and amenity. The proposals would include large areas of new planting as well as management of existing woodland, including ancient woodland that has been neglected for many years. These measures would help to offset some of the losses described above and together with new planting on land within the DCO boundary would provide approximately 39ha of new or replacement planting.

9.14.7 The adverse effects of the Scheme on the landscape during the operational phase and on opening would be **Significant**. With implantation and establishment of the mitigation and compensation measures that form an integral part of the Scheme these adverse effects would reduce and from the fifteenth year after opening and thereafter they would be **Not Significant**.

9.14.8 The Scheme comprises widening and enlargement of existing highway infrastructure together with new or replacement lighting, signage and gantries. Together with the loss of vegetation this would have a **Significant** visual effect in the construction period and in the years after completion of the works. Over time these visual effects would diminish as new and replacement planting matures and screens the Scheme. It is expected that after fifteen years the visual effects as a result of the Scheme would be **Not Significant**.

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