

4. LANDSCAPE AND VISUAL EFFECTS

4.1 INTRODUCTION

- 4.1.1 This chapter of the ES assesses the likely significant environmental effects of the Proposed Development in respect of landscape and visual matters. In particular, this chapter describes the relevant landscape and visual policy context; the methods used for assessment and details of the criteria used to determine significance; the baseline landscape and visual conditions at and surrounding the site of the Proposed Development the potential impacts and effects as a result of the Proposed Development; any mitigation or control measures required to reduce or eliminate adverse effects; and the subsequent residual effects and likely significant effects associated with the Proposed Development.
- 4.1.2 This chapter is accompanied by a series of Figures and Technical Appendices.
- 4.1.3 Chapter 2 of the ES provides a detailed description of development and this Chapter does not repeat it, but that description and the associated Parameters Plan (Document 2.10) form the basis of this assessment.

4.2 METHODOLOGY

- 4.2.1 A Landscape and Visual Impact Assessment has been prepared based upon the Guidelines for Landscape and Visual Impact Assessment, third edition (GLVIA3), published by the Landscape Institute and the Institute of Environmental Management and Assessment, in 2013. The following summarises the approach adopted. Further details on the methodology criteria adopted can be found in Appendix 4.1.
- 4.2.2 In summary the Glossary of GVLIA3 – at page 157 - defines the meaning of Landscape and Visual Impact Assessment (LVIA) as:
- “A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people’s views and visual amenity.”
- 4.2.3 The guidance recognises a clear distinction between the impact, as the action being taken, and the effect, being the result of that action.
- 4.2.4 There are two components of LVIA;
- Assessment of landscape effects; assessing effects on the landscape as a resource in its own right;
 - Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people.
- 4.2.5 These two elements are described separately in this chapter.

Baseline

- 4.2.6 In terms of baseline studies the assessment provides an understanding of the landscape in the area to be affected, its constituent elements, character, condition and value. For the visual baseline this includes an understanding of the area in which the Proposed Development may be visible, the people who may experience views, and the nature of views.

4.2.7 The baseline landscape is described by reference to existing landscape character assessments and by a description of the Site and its context. For this assessment the following existing published landscape and green infrastructure studies have been reviewed;

- Natural England's National Character Areas (2013/ 2014)
- The East Midlands Regional Landscape Character Assessment (2010)
- The Current Landscape Character Assessment for Northamptonshire (2003)
- The Environmental Character Assessment and Key Issues report for Northamptonshire
- Northampton Green Infrastructure Plan (GIP) - A Green Infrastructure Toolkit for Northampton (May 2016)
- Northampton Landscape Sensitivity and Green Infrastructure Study (February 2009)
- The South Northamptonshire Review of Special Landscape Areas (June 2017)

Assessment of Landscape Effects

4.2.8 A range of landscape effects can arise through development. These can include:

- Change to, or loss of, elements, features, aesthetic or perceptual aspects that contribute to the character and distinctiveness of the landscape
- Addition of new elements that influence character and distinctiveness of the landscape
- Combined effects of these changes

4.2.9 The characteristics of the existing landscape resource are considered in respect of the susceptibility of the landscape resource to the change arising from this development. The value of the existing landscape is also considered.

4.2.10 Each effect on landscape receptors is assessed in terms of size or scale, geographical extent of the area influenced and its duration and reversibility. In terms of size or scale, the judgement takes account of the extent of the existing landscape elements that will be lost or changed, and the degree to which the aesthetic or perceptual aspects or key characteristics of the landscape will be altered by removal or, change to, or addition of new elements.

4.2.11 The overall landscape effect is determined by considering the sensitivity of the landscape receptors and the magnitude of effect on the landscape. Final conclusions on the overall landscape effects are drawn from the assessment components described.

Assessment of Visual Effects

4.2.12 An assessment of visual effects deals with the effects of change and development on the views available to people and their visual amenity.

Mapping Visibility

4.2.13 The first stage in the assessment is to map approximate visibility. This can be done by a computer generated Zone of Theoretical Visibility (ZTV) or by manual methods, using map study and field evaluation. A computer modelled ZTV may also be refined by field evaluation to take account of features (e.g. buildings and woodlands) that may not be included as part of the computer model. For the Proposed Development a computer modelled ZTV refined through field evaluation has informed the assessment of visual effects. The methodology employed for mapping visibility is included in Appendix 4.1.

Photo Viewpoints and Photomontages

- 4.2.14 A series of viewpoints are included within the assessment which generally represent views towards the Proposed Development from surrounding visual receptors. Other views of or towards the Proposed Development Site are also included where it supports the description and understanding of the area's landscape and visual characteristics. The views also typically represent what can be seen from a variety of distances and directions towards the Proposed Development Site.
- 4.2.15 In addition to the viewpoints, a series of photomontages have been prepared. The locations of the viewpoints and photomontages have been agreed with South Northamptonshire Council, with further viewpoints and photomontages agreed with Historic England. All are included within Figures 4.7 and 4.10. The photomontages aim to simulate the likely visual changes that will result from the Proposed Development. The photomontages have been prepared in accordance with good practice, as detailed in The Landscape Institute Advice Note 01/11 '*Photography and photomontage in landscape and visual impact assessment*' and outlined in Appendix 4.1.

Visual Receptors

- 4.2.16 It is important to remember that visual receptors are all people. For each affected viewpoint the assessment considers both susceptibility to change in views and the value attached to views. The visual receptors most susceptible to change are generally likely to include:
- residents at home
 - people engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focused on the landscape or particular views;
 - visitors to heritage assets or other attractions, if views of surroundings are an important contributor to the experience;
 - communities if views contribute to the landscape setting enjoyed by residents in the area.
- 4.2.17 Travellers on road, rail or other transport routes tend to fall into medium or low categories of susceptibility to change. Where travel involves recognised scenic routes awareness of views is likely to be higher.
- 4.2.18 Visual receptors likely to be less sensitive to change include:
- people engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape;
 - people at their place of work whose attention may be focused on their work or activity, not on their surroundings.
- 4.2.19 Each of the visual effects is evaluated in terms of its size or scale, the geographical extent of the area influenced and its duration or reversibility.
- 4.2.20 In terms of size or scale, the magnitude of visual effects takes account of:
- the scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including proportion of the view occupied by the proposed development;
 - the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line height, colour and texture;
 - the nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses.

4.2.21 The geographical extent of the visual effect in each viewpoint is likely to reflect:

- the angle of view in relation to the main activity of the receptor
- the distance of the viewpoint from the proposed development
- the extent of the area over which the changes would be visible.

4.2.22 As with landscape effects, the duration of the effect could be short to long term or permanent and the same definitions apply.

Assessment of Cumulative Effects

4.2.23 For the purposes of this landscape and visual cumulative effects assessment, the following definitions reflecting GLVIA3 apply:

- Cumulative landscape effects may arise from adding new types of change or from increasing or extending the effects of the main project. The concern is with the accumulation of effects upon landscape character and the components that contribute to it. Cumulative landscape effects are likely to include effects: on the fabric of the landscape; on the aesthetic aspects of the landscape; and, on the overall character of the landscape.
- Cumulative visual effects are the effects on views and visual amenity enjoyed by people, which may result either from adding the effects of the project being assessed to the effects of the other projects on the baseline conditions or from their combined effect. This may result from changes in the content and character of the views experienced in particular places.

4.2.24 GLVIA3 advises; *'In most cases the focus of the cumulative assessment will be on the additional effect of the project in conjunction with other developments of the same type'*. It does however acknowledge, *'In some cases, development of another type will be relevant and may help to give a more complete picture of the likely significant cumulative effects. For example, previous or planned road improvementsare likely to be relevant 'other developments' when assessing cumulative effects in relation to a major urban extension'* (GLVIA para 7.10, pg 122).

4.2.25 GLVIA3 sets out how development proposals at different stages in the planning process, whether of the same or different types, should be treated in assessing cumulative landscape and visual effects. It advises, *'Taking 'the project' to mean the main proposal that is being assessed, it is considered that existing schemes and those which are under construction should be included in the baseline for both landscape and visual effects assessments (the LVIA baseline). The baseline for assessing cumulative landscape and visual effects should then include those schemes considered in the LVIA and in addition potential schemes that are not yet present in the landscape but are at various stages in the development and consenting process:*

- schemes with planning consent;
 - schemes that are the subject of a valid planning application that has not yet been determined.'
- (GLVIA para 7.13, pg 122)

4.2.26 It further advises *'The emphasis must always remain on the main project being assessed and how or whether it adds to or combines with the others being considered to create a significant cumulative effect.'* (GLVIA para 7.28, pg 129)

4.2.27 In addition to the sites or schemes allocated in adopted local planning documents or with planning consent, the cumulative landscape and visual effects assessment also considers the emerging Rail Central SRFI development proposal as described elsewhere within this ES. See Section 7 of this Chapter.

- 4.2.28 The study area for the assessment of cumulative effects has been identified as the ZTV (Site Analysis) of the Proposed Development plus any overlapping ZTV (Zone of Theoretical Visibility) for the other relevant identified projects. This has been determined through desk top review of relevant plans and information included as part of the other development projects and/or from the review and use of existing baseline visual studies and fieldwork.

Significance Criteria

- 4.2.29 Conclusions on the level of effects, and whether these are adverse or beneficial, are drawn from separate judgements on the sensitivity of the receptors and the magnitude of the effects alongside professional qualitative judgment. Effects use a word scale of Major, Moderate, Minor or Negligible. Where it is determined that the assessment falls between, or encompasses, two of the defined thresholds, then the judgement is assessed to lie between the respective definitions or to encompass aspects of both. The criteria for the effects is outlined within Appendix 4.1

Landscape Effects

- 4.2.30 In terms of what constitutes a significant landscape effect, GLVIA3 makes it clear, at paragraph 5.56, that:

“There are no hard and fast rules about what makes a significant effect, and there cannot be a standard approach since circumstances vary with the location and landscape context and with the type of proposals. At opposite ends of a spectrum it is reasonable to say that:

- major loss or irreversible negative effects, over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of nationally valued landscapes are likely to be of the greatest significance;
- reversible negative effects of short duration, over a restricted area, on elements and/or aesthetic and perceptual aspects that contribute to but are not key characteristics of the character of the landscapes of community value are likely to be of the least significance and may, depending on circumstances, be judged as not significant;
- where assessments of significance place landscape effects between these extremes, judgements must be made about whether or not they are significant with full explanations of why these conclusions have been reached.” (para 5.56)

Visual Effects

- 4.2.31 In relation to what constitutes a significant visual effect, GLVIA3 states, at paragraph 6.44, that:

“There are no hard and fast rules about what makes a significant effect, and there cannot be a standard approach since circumstances vary with the location and context and with the type of proposal. In making a judgment about the significance of visual effects the following points should be noted:

- Effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant.
- Effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant.
- Large-scale changes which introduce new, non-characteristic or discordant or intrusive elements into the view are more likely to be significant than small changes or changes already involving features already present within the view” (para 6.44)

Likely Significant Effects

- 4.2.32 In accordance with the approach advocated in GLVIA3, the categories of Effects considered to represent a likely significant effect for this LVIA have been determined and are those effects that are stated as Major or Moderate/ Major. Where this occurs, this is identified within the LVIA.
- 4.2.33 It should be noted that there may be some changes resulting from the Proposed Development that will be notable and extensive, yet will encapsulate both adverse and beneficial change. In some of these instances, the resultant overall effect may not be Major or Moderate/ Major as there will be a degree of balancing out in the combined effect of the adverse and beneficial changes.

Assumptions and Limitations

- 4.2.34 The following assumptions are relevant to this Chapter:
- The Residual Landscape and Visual Effects of the Proposed Development take into account the growth of the proposed planting and in particular the proposed woodland and tree planting. Typical growth rates for this planting is drawn from published sources and assumes that the woodland and trees will be generally 8 – 12 metres high after 15 years.
- 4.2.35 The following limitations are relevant to this Chapter:
- Judgements on the likely visual effects for any 'private' receptors e.g. residential properties have been determined based upon publicly accessible or agreed access positions. For example in some situations it has not been possible to determine the detailed nature of some private views from residential properties, although the likely nature of the view has been appraised based upon a combination of views back towards the property from within the Site and from nearby publicly accessible locations. This has enabled the nature of the likely visual change to be sufficiently determined.

4.3 EXISTING BASELINE CONDITIONS

Planning Policy Context

- 4.3.1 This section considers the relevant planning framework in the context of landscape and visual issues. Not all policies are referred to or listed in full but those of most relevance to the Proposed Development Site and the nature of the Proposed Development are included. Figure 4.1 details these relevant policies and designations.

National Planning Policy

National Policy Statement (NPS) for National Networks, 2014

- 4.3.2 Chapter 5 of the NPS considers landscape and visual impacts and land use, including open space, green infrastructure and Green Belt. In the context of landscape and visual impacts the NPS advises that 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 assessment should include reference to any landscape character assessment and associated studies, as a means of assessing landscape impacts relevant to the proposed project.
- 4.3.3 It further advises that the 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). It should also assess the visibility and conspicuousness of the project during construction and the presence and operation of the project and potential impacts on views and visual amenity.

- 4.3.4 In the context of nationally designated landscapes, that includes National Parks and Areas of Outstanding Natural Beauty, the NPS makes reference to *‘Developments proposed within nationally designated areas’* at paragraphs 5.150 – 5.153. The Proposed Development is not located within a nationally designated area. At paragraphs 5.154 – 5.155, the NPS makes reference to *‘Developments outside nationally designated areas which might affect them’*. The Site is not in proximity to any nationally designated landscapes and will have no indirect effect upon any such designated landscape.
- 4.3.5 Under the heading ‘Visual Impact’ at paragraph 5.158, the NPS 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...’*
- 4.3.6 This assessment has considered the potential and likely effects of the Proposed Development on sensitive visual receptors.
- 4.3.7 Under the heading ‘Mitigation’ at paragraph 5.160, the NPS 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.’*
- 4.3.8 The design of the Proposed Development and the embedded mitigation measures and landscape proposals have been considered and appraised as part of an iterative and comprehensive process to enable the landscape and visual effects to be minimised and mitigated.
- 4.3.9 Other related matters are referenced under the section on *‘Land use including open space, green infrastructure and Green Belt’*. This includes reference to the effects upon green infrastructure and public rights of way.
- 4.3.10 All of the landscape and visual matters raised in the NPS have been considered and where relevant appraised as part of the design and subsequent assessment of the Proposed Development and the results of this approach are detailed in this Chapter.

National Planning Policy Framework

- 4.3.11 Also of relevance to this assessment, the NPPF includes relevant planning principles at paragraph 17, including references to design, countryside and environmental value.
- 4.3.12 Section 11 is concerned with *“Conserving and enhancing the natural environment”*. The NPPF seeks to conserve and enhance the natural environment – protecting and enhancing valued landscapes, and affording great weight to the protection of areas of natural and scenic beauty.
- “The planning system should contribute to and enhance the natural and local environment by: Protecting and enhancing valued landscapes...”*
- 4.3.13 The NPPF seeks to conserve and enhance the natural environment – protecting and enhancing valued landscapes, and affording great weight to the protection areas of natural and scenic beauty. The landscape and green infrastructure proposals which form part of the Proposed Development stem from the landscape and visual assessments undertaken and any necessary mitigation measures identified, reflecting the principles of Good Design which the NPPF advocates.

National Planning Practice Guidance

- 4.3.14 The National Planning Practice Guidance (PPG) supports the use of landscape character assessment as a tool for understanding local distinctiveness and Natural England's guidance on landscape character assessment. It also provides a wide range of guidance on environmental and design matters. Under the 'Design' section of the guidance, paragraph 6 (Reference ID: 26-006-20140306) states:

"Design impacts on how people interact with places. Although design is only part of the planning process it can affect a range of economic, social and environmental objectives beyond the requirement for good design in its own right. Planning policies and decisions should seek to ensure the physical environment supports these objectives. The following issues should be considered:

- local character (including landscape setting)
- safe, connected and efficient streets
- a network of greenspaces (including parks) and public places
- crime prevention
- security measures
- access and inclusion
- efficient use of natural resources
- cohesive & vibrant neighbourhoods".

Local Planning Policy

- 4.3.15 The Main Site lies on land within the District of South Northamptonshire, and some of the proposed highways measures are also within South Northamptonshire but others are in Northampton Borough.

West Northamptonshire Joint Core Strategy Local Plan (Part 1)

- 4.3.16 This strategic document covers the whole of West Northamptonshire, including Northampton Borough and South Northamptonshire District.
- 4.3.17 Proposed Policy S1 (*Distribution of Development*) defines the strategy as being for development to be "concentrated primarily in and adjoining the principal urban area of Northampton".
- 4.3.18 Paragraph 10.7 of the JCS refers to Landscape Sensitivity and Green Infrastructure Studies which have been carried out for the towns in West Northamptonshire and notes (inter alia) that:-

"...These studies provide additional broad advice on the overall sensitivity of an area, including historic character, green infrastructure, biodiversity and overall landscape sensitivity. These studies have informed the selection of the areas for development identified in this plan. The development of areas highlighted as having High Landscape Sensitivity in the study is not precluded, but it does mean that additional care and appropriate mitigation will be required when planning for new development..."

- 4.3.19 Local Landscape Sensitivity and other studies are referred to in later sections of this chapter.

4.3.20 Policy BN1 - *Green Infrastructure Connections* seeks in general terms, to protect and enhance Green Infrastructure assets. The Policy notes (inter alia) that:

“Measures to enhance existing and provide new Green Infrastructure Provision will:

- a) Be designed and delivered sustainably with prudent use of natural resources;*
- b) Mitigate and adapt to the effects of climate change including through improved flood risk management and as a carbon store;*
- c) Be designed to the highest quality in terms of appearance, access provision and wildlife provision;*
- d) Reflect local character through the planting of native species and consideration of natural and cultural heritage features;*
- e) Be supported by a long term management strategy.”*

South Northamptonshire Local Plan (1997)

4.3.21 The South Northamptonshire development plan also comprises ‘saved’ policies of the South Northamptonshire Local Plan (1997). Several of the 1997 local plan policies have been superseded by the new policies in the West Northamptonshire Joint Core Strategy (Local Plan Part 1). The remainder are ‘saved’ and will continue to apply in determining planning applications until they are replaced by equivalent policies in Local Plan part 2 which is currently being prepared by South Northamptonshire Council (SNC).

Landscape Designations and Strategies

4.3.22 No national landscape designations have been identified within or in close proximity to the Proposed Development Site. However, a small part of the southern end of the Bypass Corridor extends into the locally designated Tove Valley Special Landscape Area (SLA) and a number of relevant ecological, conservation and historical based designations and features are located within the context of the Proposed Development Site as a whole. The Tove Valley SLA designation is dated and was contained within the South Northamptonshire Local Plan (1997).

4.3.23 As part of the emerging Local Plan Part 2 South Northants Council SNC has completed a review of the landscape of the district. This review considered a number of factors including the distinctiveness of landscapes, their scenic quality, natural and cultural character and function. The South Northamptonshire Review of Special Landscape Areas (June 2017) notes (*inter alia*) that:

“The Tove Valley is a ribbon of distinctive broad landscape plateau rich in scenic quality surrounded by hilltop settlements and woodland features. The watercourses and land feature of the Grand Union Canal, River Tove and its tributaries meander through the landform whilst forming the feature point of the landscape and giving the local landscape its character. The strong landscape views filter down towards the developed Towcester where the landform begins to change and become more undulating. This landscape enhances in historic value and the change gives residence to the distinctive parkland landscape of Easton Neston and the iconic Grade II grounds that accompanies it and the Towcester Racecourse. As the landscape changes towards Towcester the introduction of more dense woodland features form providing strong ecological and visual attraction as well as public recreation through the gardens and grounds of Easton Neston.”

4.3.24 The South Northamptonshire Local Plan Part 2: Pre Submission Draft for Consultation: Draft Policies and Proposals (excluding Settlement Confines) (September 2017) proposes that the Tove Valley SLA be retained with two small additional areas included,; one to the east of the A508 (- south west of Ashton) - and one to the west of the A508 (- north of Alderton).

- 4.3.25 The relevant designations are shown on Figure 4.1 and further details on these and the likely effects upon them are detailed in this chapter and the Ecology and Cultural Heritage chapters.

Northamptonshire's Environmental Character Strategy and Green Infrastructure Strategy

- 4.3.26 These Strategies form part of the Northamptonshire's Environmental Character and Green Infrastructure Suite (ECS). The ECS describes the physical environment of Northamptonshire and provides clear guidelines for each of the three major landscape components; the historical, ecological (biodiversity) and modern (current). Further details of these parts of the ECS are detailed in the section below titled 'Landscape Character and Context'.

- 4.3.27 The Green Infrastructure Strategy outlines a vision for Green Infrastructure (GI) in Northamptonshire and a strategic framework and masterplan for GI delivery across the county.

Northampton Green Infrastructure Plan (GIP) - A Green Infrastructure Toolkit for Northampton (May 2016)

- 4.3.28 The GIP is specific to the Northampton Related Development Area (NRDA); it forms the basis of a co-ordinated approach to the creation and sustained management of GI across the NRDA while establishing links for neighbouring local authorities. The GIP forms a natural progression from the more strategic GI guidance set out in Making the Connection (River Nene Regional Park, 2006) and the Northampton Landscape Sensitivity and Green Infrastructure Study (Living Landscapes Consultancy, 2009) (See below).

- 4.3.29 The NRDA includes the whole of Northampton Borough plus the areas allocated for eight Sustainable Urban Extensions (SUEs) which cross administrative boundaries into Daventry and South Northamptonshire. In the context of the total Proposed Development Site, the NRDA boundary extends up to the M1 motorway but does not encompass the land to the west. Consequently, it only includes those limited parts of the Proposed Development Site that lie to the east of the motorway.

Northampton Landscape Sensitivity and Green Infrastructure Study (February 2009)

- 4.3.30 The Northampton Landscape Sensitivity and Green Infrastructure Study (NLSGI) incorporates all land within Northampton Borough, plus one parish beyond in each direction. It encompasses the majority of the Proposed Development Site. Only the southern tip of the Bypass Corridor (on the southern side of Road) lies outside the boundary for this study. The remainder of the Proposed Development lies within Study Area 3: South, as described at Paragraph 8.4.16 of the NLSGI.
- 4.3.31 Figure 24 of the NLGIS illustrates the relative Landscape and Visual Sensitivity within Northampton Borough and its immediate surrounds. With reference to Study Area 3: South, the study states at Paragraphs 8.5.15 - 8.5.17;

"Within this Study Area there are three discrete areas of high-sensitivity landscape. These are 1) the ridge of land which runs from Cogenhoe to Hunsbury Hill, which is visually prominent and forms the southern setting to Northampton. 2) The area south and south-east of Hackleton and Piddington, due to the attractiveness of the countryside and strong visual links with the historic landscape of the surrounding wooded areas. 3) The Courteenhall estate, as an example of a traditional parkland estate. Delapre Abbey is also highly sensitive due to the size and openness of the site.

There are pockets of lower visual sensitivity land between the M1 and the existing southern edge of Northampton, and in the shallow "bowl" of land between Wootton and Grange Park.

The remainder of the Study Area is an open rural landscape of high-medium sensitivity, where medium or large scale development would appear incongruous."

4.3.32 Paragraphs 8.7.12 - 8.7.16 of the study provide the following Summary of Sensitivity for Study Area 3: South:-

“The majority of high-medium sensitivity Biodiversity sites are concentrated within the urban area of Northampton, and include the publicly-accessible sites of Hunsbury Hill and part of Barnes Meadow Local Nature Reserve. There are also high-medium sensitivity linear features, including the Grand Union Canal and the dismantled railway line, which runs through Great Houghton. There are extensive blocks of medium sensitivity land including the Courteenhall estate and a priority area for acid grassland habitat survey around Blisworth and Gayton...

High sensitivity Cultural Heritage sites in this Study Area include the designated sites of Courteenhall estate, Northampton Battlefield (around Delapre Abbey) and Hunsbury Hill Fort. There are also several villages with Conservation Areas....

Landscape and Visual sensitivity analysis shows that the high sensitivity areas are the ridge which runs between Whiston and Hunsbury Hill, the Courteenhall estate, and the area southeast of Hackleton, which is visually associated with Yardley Chase and Salcey Forest. The majority of this Study Area is of high-medium landscape and visual sensitivity.

Analysis of Flood Zones and Minerals sensitivity shows ribbons of high sensitivity land at risk of flooding from the Wootton Stream, and scattered Proposed Areas for Mineral Extraction Sites in the western part of the Study Area.

Cumulatively, the sites with the greatest concentration of high/high-medium sensitivity ratings are Hunsbury Hill, Courteenhall, the area south-east of Hackleton and the Grand Union Canal.”

4.3.33 Figure 31 of the study depicts the Combined Sensitivity of the GI study area. The majority of the area is shown as either High Sensitivity or High – Medium Sensitivity, with only relatively small areas of Medium Sensitivity or lower shown within and on the immediate fringes of Northampton's built up area.

4.3.34 Extracts of this study are included in Appendix 4.2

Topography

4.3.35 The following should be read in conjunction with Figure 4.2.

Context – Landform

4.3.36 The topography of the Proposed Development Site's context comprises the rolling slopes of a tributary valley to the River Nene to the north separated by a ridge of higher ground from the River Tove valley to the south. The tributary watercourse to the River Nene stretches in a broadly south east – north west direction across the landscape to the north of the Main Site and the M1 motorway at around 65 – 75 metres Above Ordnance Datum (AOD).

4.3.37 The middle and lower slopes to this tributary valley undulate across the landscape immediately to the north and south of the M1 motorway. The higher slopes rise more markedly and steeply in a southern direction towards a narrow plateau of higher ground upon which the ironstone villages of Roade and Blisworth are situated. The highest parts of this land lies at around 120 – 135m AOD.

4.3.38 From the higher land the landform then falls southwards through Roade into the Tove valley to the south. The southern part of the Proposed Development Site comprising the Bypass Corridor lies on the southern side of the highest land. The landform of the Proposed Development Site's context is characterised by the rolling nature of the slopes leading up to the more pronounced and prominent ridgeline that stretches east to west, broadly separating the Main Site from the Bypass Corridor.

Local – Landform

- 4.3.39 At a more localised level, the Main Site includes a shallow secondary ridge of ground that extends along the western side of this area at typically 95 – 102 m AOD. The general aspect of the Main Site is to the east and south east with the land generally falling back towards the existing urban edge and motorway junction. On this eastern edge of the Main Site the land is at approximately 80m AOD. The highest point within the Main Site lies close to the western boundary and two areas of existing woodland. These woodlands lie relatively elevated within the Main Site at approximately 95 – 98m AOD.
- 4.3.40 In the north western corner of the Main Site the land falls gently towards Milton Malsor, yet it is only this far north western corner of the Main Site that falls away from the motorway and existing urban edge. Milton Malsor lies at typically 75 – 85m AOD yet has a general aspect and fall away from the Main Site. Collingtree to the east and this stretch of the motorway similarly lie at around 75 – 85m AOD and also fall away from the Main Site.
- 4.3.41 The Main Site thus sits within a shallow but enclosed landform setting, with a general aspect towards the existing urban edge and the motorway junction. The relatively higher land along its western side and to the south (the Courteenhall – Blisworth ridge of higher ground) separate it in localised terms from the landscapes to the west and south. Blisworth lies at typically 95 – 120m AOD and occupies a semi enclosed position on the eastern side of a small valley that generally falls northwards from the higher ground. This settlement also generally has an aspect that falls away from the direction of the Main Site
- 4.3.42 The existing rail line (Northampton Loop Rail Line (NLRL)) along the western boundary of the Main Site rises from approximately 86m AOD at the northwest corner to approximately 98m AOD at the south west. From close to the south west corner of the Main Site the NLRL meets the West Coast Main Line and extends southwards in cutting towards and beyond Roade.
- 4.3.43 The landform of the Bypass Corridor is relatively more elevated and varied than the Main Site. Around the western side of Roade the land is typically between 105 – 125m AOD with varying slopes and falls, though most generally back towards the settlement edge and the south east. Despite being relatively more elevated the rolling nature of this landform means that the Bypass Corridor is also relatively enclosed where it lies closer to the settlement edge. This corridor stretches around and across two small dips and ridges in the landform to the north and west of Roade.
- 4.3.44 The landform at and around the location of the Highway Mitigation Measures varies yet forms part of the broader rolling landform. Some locations occupy relatively flatter and relatively lower lying positions. There are no distinctive or notable landform characteristics or features at these locations.

Landscape Character

- 4.3.45 Landscape Character Assessments have been prepared at national, regional and countywide scales covering the Proposed Development Site and its context. Relevant extracts of the published landscape character assessments and studies are included at Appendix 4.2 and the location and extent of the different areas are detailed on Figures 4.3 and 4.4.

National

Natural England National Character Areas (Figure 4.3)

- 4.3.46 National Character Area (NCA) profiles have prepared by Natural England for the 159 NCA's defined across England. These NCA profiles include a description of the natural and cultural features that shape the landscape, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area's characteristics.
- 4.3.47 At this very broad landscape scale, much of the Proposed Development (Main Site and most of the Highways Works) lies within NCA 89 'Northamptonshire Vales' and the Bypass Corridor (and the most southern of the Highways work) lies on the edge of NCA 91 'Yardley Whittlewood Ridge'.
- 4.3.48 The 'Northamptonshire Vales' NCA comprise an extensive tract of land extending from the 'Northamptonshire Uplands' NCA to the south-west and 'Rockingham Forest' NCA to the north-east, the latter forming the northern boundary of the Nene Valley.
- 4.3.49 The description of the Northamptonshire Vales NCA includes the following references;

"...a large, relatively open, uniform landscape composed of low-lying clay vales interrupted by varied river valleys. Its sense of place comes less from its overall landform and more from its visually dominant settlements and views of the surrounding higher ground. The area has many settlements within it, including the major urban area of Northampton..." (para 1, page 7)

...Despite the predominance of settlements and a general lack of tranquillity, this contrasts strongly with a distinctly rural feel to the landscape, particularly in the southern part of the area, which features a mixture of arable and pastoral farmland. Country houses, historic landscapes, designed parkland, and waterside trees and meadows add further variety..." (para 2, page 7)

- 4.3.50 The Key Characteristics of the Northamptonshire Vales as defined in the NCA profile include the following references:
- *"An open landscape of gently undulating clay ridges and valleys with occasional steep scarp slopes. There is an overall visual uniformity to the landscape and settlement pattern;*
 - *Diverse levels of tranquillity, from busy urban areas to some deeply rural parts;*
 - *Mixed agricultural regime of arable and pasture, with arable land tending to be on the broader, flat river terraces and smaller pastures on the slopes of many minor valleys and on more undulating ground;*
 - *Relatively little woodland cover but with a timbered character derived largely from spinneys and copses on the ridges and more undulating land, and from waterside and hedgerow trees and hedgerows, though the density, height and pattern of hedgerows are varied throughout;*
 - *Frequent large settlements that dominate the open character of the landscape, such as Northampton and Wellingborough, and associated infrastructure, including major roads, often visually dominant.*
 - *Relatively frequent, prominent historic parklands and country houses towards the outer edges and close to more wooded areas." (bullet points 1, 2, 3, 4, 7 & 9, page 6)*
- 4.3.51 The NCA profile includes Statements of Environmental Opportunity (SEO) which provide guidance for achieving sustainable growth. The SEO's for this NCA include;

"SEO 3: Plan ongoing strategic growth and development within the area so that it strengthens the sense of place and increases biodiversity, incorporating extended and restored hedgerow networks, open spaces and the conservation, management and promotion of geological features as part of green infrastructure planning.

For example by:

- *Ensuring that the location, form and design of the planned sustainable urban extensions around Northampton are guided by landscape character assessment objectives and incorporate large-scale landscaping measures that can link to the green infrastructure network. This would both counteract the dominance of new developments and contribute to climate change adaptation.*
- *Encouraging tree planting around settlement fringes to help to reduce visual impact, integrate new development into the landscape and contribute to an increase in the woodland resource.”* (para 1, and bullet points 1 & 2, page 17)

4.3.52 NCA 91 ‘Yardley Whittlewood Ridge’ also stretches across a broad landscape tract, from Brackley in the south west to Rushden and Raunds in the north east. It encompasses the settlement of Roade and parts of its immediate setting at a relatively narrow part of the NCA. The description of the NCA includes;

‘The Yardley Whittlewood Ridge National Character Area (NCA) is a low and gently undulating limestone plateau commonly referred to locally as the Ridge.... The Ridge is more distinct in the south-west where it rises from the adjacent low-lying claylands. From the top, the land slopes away gently in most directions, giving long views over the surrounding countryside...’ (Para 1, page 3)

The Ridge contains a variety of semi-natural habitats, including ancient woodland, wood pasture and parkland, hedgerows, lowland meadow and flood plain grazing marsh. It is a well-wooded landscape...’ (para 2, page 3)

4.3.53 These two relevant NCA’s set the broad national scale landscape context for the Proposed Development Site.

Regional

East Midlands Regional Landscape Character Assessment (2010) (Figure 4.3)

4.3.54 In the hierarchy of published character assessments, this study sits between the National Character Assessment, which identifies broad national character areas, and the county level assessment, which examines landscape character at a relatively finer grain. It is useful for projects which are based at a regional level such as strategic planning projects. The East Midlands Regional Landscape Character Assessment (EMRLCA) identifies 31 regional Landscape Character Types (LCT).

4.3.55 Within this assessment study, the Proposed Development Site lies within the ‘*Undulating Mixed Farmlands*’ LCT. The landscape character of the *Undulating Mixed Farmlands* LCT is described as;

“...an extensive landscape stretching from the Oxfordshire and Warwickshire borders, through Northamptonshire and into the heart of Leicestershire. Despite its scale, varied underlying geology and complex draining patterns that have created a landscape of hills, ridges and valleys, the landscape has a strong visual unity.

Of particular importance to creating this visual unity is the undulating nature of the landform, interspersed with relatively high hills and ridges, a mixed agricultural regime and areas of permanent pasture preserving widespread ridge and furrow, occasional woodlands and spinneys, and a network of well treed hedgerows....” (paras 1 & 2, page 168)

4.3.56 Under the heading ‘Physical Influences’ the study advises;

“...The agricultural landscape is punctuated by numerous small deciduous woodlands and spinneys and whilst these are generally not extensive, they are often prominent features when occupying steep slopes or elevated hills and ridges...

... Hedgerows and hedgerow trees also contribute to the well treed character of the landscape.

... in a landscape with relatively low semi-natural vegetation cover, trees and hedgerows provide important refuges and connective habitats for wildlife.” (paras 3 & 4, page 169)

4.3.57 Under the heading ‘Built Development’, it states;

“...modern mixed-use development is evident on the fringes of larger settlements such as Leicester, Northampton and Daventry and in and around those villages closest to the main towns. This creates visual intrusion and extends the urban fringe. Further expansion of Northampton and Daventry can be anticipated as these lie within the MKSM Growth Area...

...These areas are likely to experience considerable development pressure and high levels of growth with mixed use development on the fringes of the urban areas...” (para 5, page 171)

4.3.58 Under the heading ‘Infrastructure’ the study notes that:

“Localised road improvements are evident in the road network in order to better connect isolated villages with larger towns and cities. This has an urbanising effect and brings a degree of standardisation to the landscape.

The aim should be to manage road improvements, maintaining the existing character of the rural road network, whilst having regard to user and safety requirements. Any road improvements should be carefully planned and designed to provide positive environmental and landscape enhancements and strengthen prevailing character. This may include grassland, hedgerows and trees along road verges to enhance character and increase the occurrence of semi-natural habitats...” (paras 2 & 3, page 172)

4.3.59 This study supports the other published landscape character assessments covering the Proposed Development Site and its broader context.

County

The Current Landscape Character Assessment for Northamptonshire (2003) (Figure 4.4)

4.3.60 The ‘Current Landscape Character Assessment for Northamptonshire’ (24 November 2017) (CLCAN) subdivides Northamptonshire into 6 Landscape Types, which in turn divide into 20 broader landscape typologies resulting in 77 distinct Landscape Character Areas.

4.3.61 Within the CLCAN, the Proposed Development Site is situated principally within Landscape Character Area 6a: “The Tove Catchment” which in turn is part of the “Undulating Claylands” landscape typology as defined by the Northamptonshire CLCA. Those parts of the Proposed Development (namely parts of the highway related works) which lie to the north of the M1 lie within Landscape Character Area 6b: “Hackleton Claylands” which forms part of the “Undulating Claylands” landscape typology. The Main Site also includes part of Landscape Character Area 13b: “Bugbrooke and Daventry” which in turn is part of the “Undulating Hills and Valleys” typology. It is the northern third of the Main Site that lies within this Landscape Character Area and typology.

- 4.3.62 The *Tove Catchment* Landscape Character Area (LCA) comprises the largest of the Undulating Claylands areas lying to the south west of Northampton. The streams of the *Tove Catchment* LCA (6a) have eroded broad, gentle, convex sloped valleys, resulting in the distinctive undulating landform. Land cover is typically a combination of both arable and pasture farming with improved pasture largely located around villages. Woodland associated with estate parklands is particularly significant in the character area.
- 4.3.63 The 150ha Grade II registered landscaped park at Courteenhall, developed in 1791 by Humphrey Repton is a notable feature within the LCA. The park includes a significant number of predominantly broadleaved woodlands, although some have a mixed composition. This park lies to the south east of the A508 and the Main Site, though is effectively enclosed by the arrangement of existing mature woodland areas and tree belts.
- 4.3.64 Surrounding the southern boundary of the LCA are significant woodland blocks within the *Low Wooded Clay Ridge*, which although beyond the area, create a notable wooded horizon in many views to the south.
- 4.3.65 The *Bugbrooke and Daventry* LCA (13b) is the most extensive area of the Undulating Hills and Valleys character areas and occurs on the western and southern side the River Nene Broad River Valley Floodplain. It extends from the western county boundary, around the eastern edge of Daventry, to the southwestern edge of Northampton. Land cover in the area is a combination of both arable and pastoral farmland in fields of varying size.
- 4.3.66 Strong urbanising influences are evident in the landscape. Northampton and other settlements, the M1 motorway, A45 and other major 'A' roads and railways and a series of high voltage pylons all exert an influence. The undulating landform does, however in places, provide some screening of these elements.

The Environmental Character Assessment and Key Issues report

- 4.3.67 The '*Environmental Character Assessment and Key Issues*' report (ECAKI) subdivides the county into 16 Environmental Character Areas. The Proposed Development Site falls within Environmental Character Area number 13: '*The West Northamptonshire Uplands*' as defined by the ECAKI. The ECAKI identifies a number of key issues for '*The West Northamptonshire Uplands*' of which the following are considered to be relevant in the context of the Proposed Development Site:-
- "The Uplands are an expansive and elevated landscape with an arc of high rounded hills and valleys. A capping of ironstone bearing Marlstone Rock and Northampton Sand Formation has resulted in well defined landform features with steeply sloping prominent hills that contrast to softer landscapes where capping by a thick mantle of Boulder Clay has occurred. The local variations are an integral part of the wider character of the area and as such development and land management should be appropriate to local conditions.
 - The arc of hills marks a major watershed, draining to a number of juvenile rivers including the Nene, Warwickshire Avon, Leam and Cherwell to the west, the Welland to the north and to the Tove / Ouse to the south. Land management and development should consider the impact of run off and pollution in this area, given that numerous water courses could be affected.
 - Northampton and Daventry fringe these landscapes and opportunities exist to enhance the rural urban fringe by appropriate land management and new development, and limit the urbanising influence of the towns on the otherwise rural landscape. The M1 corridor is also a significant urbanising component of the landscape and measures should be taken to limit the visual and acoustic impact this has on the surrounding landscape."

Local Landscape

- 4.3.68 The specific characteristics of the Proposed Development Site and the surrounding area are described below and should be read in conjunction with the Aerial Photograph (Figure 4.5). This provides a site specific and finer level of assessment than those set out within the national, regional and county tiers of landscape character assessment.

Proposed Development Site Landscape – Local Context and Character

- 4.3.69 The landscape context of the Proposed Development Site is varied in character and encompasses the southern urban extents of Northampton including Wootton, Collingtree and the extensive Grange Park housing and industrial estate to the north east and more open mixed and rolling farmland around and to the south west of Roade. Large transport infrastructure features prominently within this local context and includes the M1 motorway and Junction 15 of the motorway (connecting with the A45 and the A508), together with the West Coast Main Line (WCML) and the Northampton Loop Railway Line (NLRL). The latter connects to the WCML close to the south west corner of the Main Site.
- 4.3.70 The villages of Milton Malsor and Blisworth lie respectively to the north west and west of the Main Site, with other scattered properties within the farmland landscape to the west. Blisworth occupies a relatively elevated position on the rising land to the west. The A43 also lies in this direction. Collingtree lies on the urban edge of Northampton on the opposite side of the motorway to the Main Site area. Courteenhall House and associated landscape parkland (Registered, Grade II) lies to the south east of the Main Site. This parkland includes some significant mature woodlands and tree belts which enclose the House and other buildings and separate them and the associated parkland from the Main Site, the Bypass Corridor and the landscape to the west.
- 4.3.71 Roade lies along the A508, approximately 2.5 km south of Junction 15 of the M1 motorway. The landscape context of the Bypass Corridor around the western side of the settlement is influenced by a combination of the varying topography, farmland and built up edge. This part of the Proposed Development Site stretches across the WCML (in relatively deep cutting at this point), a small watercourse, a public bridleway (The Midshires Way), a number of other Public Rights of Way (PROW), Blisworth Road and a further disused rail corridor to the south of Roade.
- 4.3.72 The rolling nature of the topography and general aspect of the land towards the south west for much of this area provides a degree of enclosure to the lower parts of this area that lie closer to the existing urban edge.
- 4.3.73 The Main Site comprises predominantly arable farmland and is contained to the north east by the M1 Motorway, to the west by the NLRL, to the north by Collingtree Road, to the south east by the A508; and to the south by field boundaries. It has a general aspect towards the west and back towards the major road corridors and existing urban edge. A gentle ridge of higher land stretches along the western side of the Main Site and provides some visual separation to the more rural landscape to the west of the NLRL.
- 4.3.74 Towards the central western part of the Main Site is a farm (Rectory Farm), two mature woodlands (Highgate Wood and Churchill's Wood) and some further mature trees and vegetation. Other mature trees and tree belts are predominantly located in the central and southern parts of the Main Site. A small watercourse falls west to east across the southern part of the Main Site, with the land to the south of this watercourse steadily rising towards the Main Site boundary. The land continues to rise beyond towards Courteenhall Rd.
- 4.3.75 Two Public Rights of Way (PROW) cross the Main Site and continue across the M1 motorway on the eastern edge of the Main Site via an overbridge. These routes provide links between Collingtree (and the area north east of the motorway) and the landscape to the west (via a rail overbridge on the western boundary of the Main Site) and the landscape and A508 to the south.

4.3.76 The landscape character and influences of the Proposed Development Site varies. The Main Site comprises predominantly arable farmland yet is influenced by the existing nearby urban edge and large scale infrastructure (M1 motorway, Junction 15, A508 and NLRL). The nature of the local landform and general aspect of the Main Site towards the east, coupled with the existing mature woodland reduce the Main Site's relationship with and influence from the more rural landscape and smaller settlements to the west. This is a relatively simple landscape that is reasonably well defined and contained within its localised context. The landscape character and influences of the Bypass Corridor to the west of Roade is also varied and encompasses built up uses and rolling farmland. This area is relatively more varied in local landform terms due to its more rolling nature.

Proposed Development Site - Landscape Features

Main Site

- 4.3.77 *Landform:* Please refer to the earlier sub section titled Local – Landform.
- 4.3.78 *Land Use and Open Space:* The Main Site is predominantly arable farmland comprising a number of fields bounded by hedgerows and hedgerow trees together with surrounding and nearby major road corridors (M1 and A508/A45). Other uses include woodland and farm buildings. There are no areas of public open space, although there is public access in the form of PROW.
- 4.3.79 *Woodland, Trees and other Vegetation:* The Main Site includes various areas of woodland, tree belts, individual trees, hedgerows and other vegetation. The Arboricultural Assessment provides details of the trees and woodlands across this area and further ecological details and information on the woodland, trees and other vegetation are included within the Ecology chapter.
- 4.3.80 The principal woodland areas within the Main Site comprise Highgate Wood and Churchill's Wood, which both lie on relatively higher ground in the western part of the area. These two woodlands are relatively prominent within the local landscape and are visible from more elevated locations to the south and west. Other smaller woodland copses and belts of mature trees exist within the Main Site, including on the southern boundary, along the watercourse and around Junction 15 and along the boundary with the motorway.
- 4.3.81 The existing M1 motorway, A508 and A45 road corridors include mature hedgerows (occasionally tall where they occur), tree belts and other scattered scrub and trees. This road corridor planting is considered to be fairly typical of highway planting and does not include any particularly notable or distinctive groups of trees.
- 4.3.82 Hedgerows also occur throughout the Main Site and are typically variable with some well maintained and continuous and other fragmented and displaying a lack of positive management.
- 4.3.83 *Water Features and Watercourses:* A small watercourse falls west to east through the southern part of the Main Site and is lined by some trees and vegetation. A number of other drainage ditches associated with existing hedgerows also exist within the Main Site area and a pond exists near Rectory Farm towards the centre of the area. The Ecology and Drainage chapters include further details of the water features and watercourses within the Main Site.
- 4.3.84 *Public Rights of Way (PROW):* Two public footpaths (Refs. KX13 and KX17) cross the Main Site providing links between the landscape to the west (via a rail overbridge to the NLRL); Collingtree and the urban area east of the motorway; and the A508 to the south east.
- 4.3.85 Further details of the existing and wider provision of PROW and other publicly accessible routes are detailed in the Transport Assessment.

4.3.86 *Built Development and Infrastructure*: Built development within the Main Site includes a cluster of derelict farm buildings in the west (accessed from the A508) and Rectory Farm located on relatively higher ground in the western central part of the Main Site. The latter is currently used as a shooting school. Two communication masts are located adjacent to Junction 15/ A508 and adjacent to the pedestrian access bridge over the motorway. Low voltage overhead electricity lines on telegraph poles traverse the northern and western parts of the Main Site.

Bypass Corridor

4.3.87 *Landform*: Please refer to the earlier sub section titled Local – Landform.

4.3.88 *Land Use and Open Space*: This area comprises predominantly mixed arable and pasture farmland, yet also crosses a number of other features; namely the WCML (in cutting at this point); Blisworth Road, a small watercourse, a disused rail corridor and a number of field boundaries. There are no defined areas of public open space within the Bypass Corridor, although there is public access in the form of six PROW (including the 'Midshires Way').

4.3.89 *Woodland, Trees and other Vegetation*: The Arboricultural Assessment provides details of the trees and woodlands along the Bypass Corridor and further ecological details and information on the woodland, trees and other vegetation are included within the Ecology chapter.

4.3.90 There is relatively limited woodland or trees within the Bypass Corridor. Mature hedgerows and trees exist along the A508 in the north and south of the area and other mature hedgerows and trees bound some of the fields. Other mature trees and vegetation exist within the WCML cutting and along the disused rail line in the south of the area. There is limited existing vegetation along the watercourse.

4.3.91 *Water Features and Watercourses*: A small watercourse falls northwest to south east through the central part of the Bypass Corridor. This watercourse flows around the south western side of Roade. The Ecology and Drainage chapters include further details of the water features and watercourses.

4.3.92 *Public Rights of Way (PROW)*: There are six PROW (including the 'Midshires Way') within the Bypass Corridor. Most of these cross the area for relatively short distances rather than extend around the corridor and the settlement edge. Further details of the existing and wider provision of PROW and other publicly accessible routes are detailed in the Transport Assessment.

4.3.93 *Built Development and Infrastructure*: There is no existing built development within the Bypass Corridor, although existing housing on the western fringes of Roade does exist close to the periphery of the corridor. A small number of farming properties and a business centre also lie close to the corridor boundary on Blisworth Road and at the southern extent of the corridor, off the A508.

Highway Mitigation Measures – Existing Landscape

4.3.94 The Highway Mitigation Measures are situated in a number of locations in the context of the main Site and Bypass Corridor. The landscape characteristics and features at these locations are:

- **M1 Junction 15 and north east of the junction along the A45**
This landscape is dominated by the major roads and associated infrastructure with other uses and influences comprising Grange Park, the logistics buildings close to junction 15 and the hotel and golf course on the western side of the A45 either side of Watering Lane. Mature trees and planting is most evident around the golf course yet it also extends along both sides of the A45.
- **A508, alongside the Main Site**
This landscape corridor adjoins the Main Site and is covered by the description of the Main Site landscape. The existing road corridor includes mature hedgerows and hedgerow trees to both sides of the road.

- **M1 Junction 15A**

The location of these mitigation measures is to the east of the service areas and dominated by an elevated section of the motorway, two roundabout junctions and immediately surrounding mature trees and vegetation. The Grand Union Canal also lies close to the west of the proposed works. It is a relatively enclosed location.

- **A508/ Blisworth Road (Courteenhall Road) junction – between the main Site and Bypass Corridor**

Courteenhall Park lies to the east of the A508 and this junction with farmland to the west. The land rises gradually from north to south and a war memorial and access to the Courteenhall Estate are situated close to the south of the junction. It is a relatively enclosed stretch of road with the mature trees and tree belts dominating and limiting any views eastwards across the park. Hedgerows and mature trees and the rising land also limit views out towards the west and north west.

- **A508 junctions with Rookery Lane and Ashton Road – south of Roade/ the Bypass Corridor**

This location comprises farmland immediately surrounding the junctions with mature hedgerows and trees to the roadside, particularly on the eastern side around the Ashton road junction.

- **A508/ Pury Road junction – south of Roade/ the Bypass Corridor**

This location is relatively open and dominated by farmland with hedgerows, trees and fenced boundaries to the roadside and junction surrounds. The open and more distant views are generally towards the rising ground to the north and north east.

- **A508 at Grafton Regis – south of Roade/ the Bypass Corridor**

The small settlement area of Grafton Regis and Church lane lie immediately to the east of the A508 at this location. Existing residential properties and a public house front towards the road, with tall mature trees and a hedgerow lining the western side of the road and restricting views towards the farmland beyond. This stretch of the road is enclosed by the trees and hedgerow to the west and the properties to the east. It includes existing bus stops and roadside pavements.

- **Knock Lane / Blisworth Road – west of Roade/ the Bypass Corridor**

This location is dominated by farmland with hedgerows and hedgerow trees situated relatively close to the roadside in places. The road is relatively narrow with Tunnel Hill Cottages located close to the junction with Stoke Road and a solar farm located south of Knock Lane. It is relatively elevated and open landscape context.

Landscape Value

4.3.95 The baseline landscape assessment also includes consideration of the landscape value of the Proposed Development Site and its surrounding context. This has been considered in line with the methodology outlined at the beginning of this chapter and in Appendix 4.1 and follows the approach advocated in the Guidelines for Landscape and Visual Impact Assessment (3rd Edition) (GLVIA3).

4.3.96 In addition to a review of existing landscape designations and information contained in the relevant published landscape character assessments, the following criteria have been used to assess the value of the Proposed Development Site landscape. Both the Main Site and Bypass Corridor of the Proposed Development Site have been considered along with the immediate landscape contexts to these areas. The landscapes relevant to the Highway Mitigation Measures have also been assessed in determining the effects of these works on the landscapes at these respective locations as detailed later in this chapter:

- 4.3.97 Landscape quality (condition): The Northamptonshire CLCA advises for the ‘*Undulating Claylands*’ Landscape Character Type, within which the majority of the Proposed Development Site and surroundings are situated; ‘*On the whole the Undulating Claylands are a well maintained and managed landscape of moderate scenic quality. Local variations in condition are apparent, however, and frequently depend on the extent to which hedgerows are managed.*’
- 4.3.98 The landscape of the Proposed Development Site (encompassing both the Main Site and Bypass Corridor) and its immediate context is reasonably well intact. The Main Site includes woodland areas, trees and hedgerows that are all generally in good or reasonable condition. The two main woodland blocks within the Main Site area (Highgate and Churchill’s Woods) are in good condition. The majority of the trees within the Site are of Moderate quality in arboricultural terms, yet there are also other High and Low Quality trees and tree groups.
- 4.3.99 Post and wire fencing is evident in places but not to a significant extent. Existing hedgerows are generally continuous although a number include some gaps and are more outgrown within the Bypass Corridor. The Main Site includes some relatively younger and maturing tree planting which provides a relatively broader age structure to the existing planting.
- 4.3.100 The Courteenhall parkland to the south east of the Main Site is intact and in good condition. This parkland is however enclosed and effectively separated in landscape terms from the Proposed Development Site. The landscape context to the east of the Main Site (north and east of the motorway corridor) is less intact due to the changes that have arisen from the various developments on the edge of Northampton.
- 4.3.101 Scenic quality: The combination of gently rolling arable farmland, characterised by visually prominent woodland blocks and large fields bounded by hedgerows and hedgerow trees, together with urbanising influences such as built development on the edges of Northampton, the M1, other major ‘A’ roads and railways present a rather typical landscape for this part of the ‘*Undulating Claylands*’ and ‘*West Northamptonshire Uplands*’ landscape types.
- 4.3.102 Within the Main Site, the two larger and more elevated woodland areas form locally positive visual features and are visible from the immediate surroundings. The influence of the motorway, other major roads and the existing urban edge detract to varying extents from the scenic quality of this part of the Proposed Development Site landscape.
- 4.3.103 The Courteenhall parkland lies outside the Proposed Development Site yet does contribute to the positive scenic quality of the local area through the framework of mature woodland and tree belts that are visible to the south east of the Main Site. This parkland is however enclosed in visual terms, so most views are limited to the outer parts of the wooded park.
- 4.3.104 Around Roade the scenic quality is rather ordinary and unremarkable. This part of the Proposed Development Site is relatively more interrupted and enclosed in visual character, influenced by the existing edge of Roade and the underlying rolling landform. The majority of the corridor is dominated by mixed farmland yet with the influence of the existing built up edge of the settlement.
- 4.3.105 Rarity: The Proposed Development Site includes no rare landscape elements or features and it does not form part of a rare landscape character type or area. As stated in the Northamptonshire CLCA, the broader landscape context (predominantly the ‘*Undulating Claylands*’ type) of the Proposed Development Site is ‘*generally unremarkable although occasional estate houses and associated parkland are of note and the wooded horizon of the surrounding Low Wooded Clay Ridge are distinctive.*’

- 4.3.106 Representativeness: The ‘*Undulating Farmlands*’ is an extensive landscape tract. Both areas of the Proposed Development Site are generally representative of this wider landscape character type. Principally, it includes a mix of arable and pasture fields and a network of largely hedged field boundaries, with occasional woodlands and tree belts. Whilst these are typical of the wider area the Proposed Development Site does not contain any particular characteristics or features which are considered to be important examples. The most notable feature at a more localised scale is the parkland that lies beyond the Main Site to the south east.
- 4.3.107 Conservation interest: The Proposed Development Site includes some ecological, archaeological and cultural heritage interest as outlined in the relevant ES chapters. The Collingtree Conservation Area lies in close proximity to the north of the Main Site, although the M1 forms a physical boundary and area of separation between the Main Site and this Conservation Area. Other Conservation Areas lies more distant to the Main Site at Milton Malsor and Blisworth to the north west and west of the Main Site respectively.
- 4.3.108 As set out above, Courteenhall Park is situated to the south east of the Main Site and the Courteenhall Conservation Area lies immediately to the east of this parkland, yet both are visually enclosed and separated from the wider landscape.
- 4.3.109 Recreation value: Two Public Rights of Way (PROW) extend through and beyond the Main Site and establish connections between the existing urban area to the east of the motorway (at Collingtree) and the wider countryside to the west and south.
- 4.3.110 The Bypass Corridor includes six PROW which largely provide routes east – west across the landscape with some providing links into and out of Roade. Both areas of the Proposed Development Site do not include any other specific recreational activities, although a playing field at Roade lies close to the south of the Bypass Corridor.
- 4.3.111 Perceptual aspects: The Proposed Development Site and its immediate context do not possess any notable perceptual qualities. It is perceived as an agricultural landscape locally influenced by major transport infrastructure routes (the M1, A508 and NLRL) and the urban edge of Northampton to the east. It is not a tranquil or ‘wild’ landscape.
- 4.3.112 Associations: There are no known associations with the Proposed Development Site landscape.
- 4.3.113 The overall landscape value of the Main Site has been assessed as Low/Medium and for the Bypass Corridor the landscape value has been assessed as Medium. The Bypass Corridor landscape is however at the lower end of this Medium value assessment. is also on the boundary between Low and Medium but

Landscape Receptors

- 4.3.114 There will be a number of landscape receptors potentially affected by the Proposed Development, as follows:
- The character and appearance of the landscape, including aesthetic and perceptual dimensions – at a Proposed Development Site wide and broader contextual basis;
 - Courteenhall Park Landscape
 - Landscape features or components of the Proposed Development Site, including:
 - Landform;
 - Woodland and Trees;
 - Hedgerows;
 - Water features
- 4.3.115 All of these receptors have been assessed by the impact assessment process.

Existing Views and Visual Receptors

4.3.116 A detailed baseline visual appraisal has been undertaken for the Proposed Development. The baseline appraisal has explored the nature of the existing visual amenity of the area and the approximate visibility of the Proposed Development Site from surrounding receptors. Figure 4.6 details the location of a series of the representative photo viewpoints and Figure 4.7 contains the photo viewpoints.

4.3.117 The location of the representative Viewpoints included within the assessment have been agreed in advance with South Northamptonshire Council.

4.3.118 The main Visual Receptors identified as potentially experiencing some likely visual effects arising from the Proposed Development are summarised below:

- Residents - principally those in properties surrounding the Proposed Development Site areas. This will potentially include some residents at the following locations:
 - Milton Malsor;
 - Blisworth;
 - Collingtree;
 - Roade;
 - Other settlements and scattered and individual properties surrounding the Proposed Development Site;
- Users of Public Rights of Way (PROW), including those located within the Proposed Development Site and others in the vicinity;
- Users of Roads, including the A508, M1 motorway, A45, Collingtree Rd, Blisworth Road, Courteenhall Rd, Northampton Rd, Watering Lane and Barn Lane;
- Users of existing employment and commercial premises; and
- Users of playing fields/ recreational areas/ school at Roade.

4.4 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

Construction

- 4.4.1 Construction phasing details of the project are included at Chapter 2 of this ES and within the Construction Environmental Management Plan (CEMP) and this includes details of the anticipated phasing of the works.
- 4.4.2 Throughout the course of the construction process, the approaches and methodologies adopted will seek to avoid or minimise any unnecessary effects upon the landscape and surrounding visual receptors. For example, the location and design of temporary site compounds, lighting, signage and perimeter mounding take these considerations into account. Combined with effective project management and liaison with the relevant authorities and stakeholders, the potential landscape and visual effects of construction will be mitigated and minimised as far as practicable during the construction stage.
- 4.4.3 The phasing and sequencing of the proposed works has taken into account landscape and visual considerations. The earthworks strategy and formation of the development plateaus and mounding and the timing of the planting and landscape proposals is important in these terms. The earthworks strategy will balance cut and fill material across both the Main Site and the Bypass Corridor Site and as a result the mitigation mounding proposals will generally be formed using material and soils from the adjoining or other nearby development plots. The relationship between the earthworks and the creation of mounding means that the screening earthworks will be provided in phases as the earthworks progress, with the associated planting implemented soon afterwards. The plans relevant to the phasing of works are appended to Chapter 2 of this ES.
- 4.4.4 Formation of the perimeter mounding and associated planting will be undertaken to the western, southern and part of the eastern Main Site perimeter as part of the initial phase of the Proposed Development. Once in place, the mounding and planting to the western perimeter of the Main Site will visually screen much of the subsequent construction activity on the Main Site, particularly from the lower lying areas further to the west. Mounding and planting to the south and south east (close to junction 15) of the Main Site, will also enable these areas to be implemented as part of the first overall phase of construction.
- 4.4.5 The subsequent construction phase will comprise formation of the more northerly development plateaus and associated mounding to the northern perimeter of the Main Site and along the north eastern perimeter with the M1 motorway corridor. Once this mounding is in place, it will form an effective visual screen to much of the subsequent Main Site construction activity from visual receptors beyond.
- 4.4.6 This approach seeks to balance the earthworks material and where this occurs the mounding will be formed in advance of the built development works, with planting to follow soon afterwards. Where planting and habitat creation proposals are not linked to other earthworks and drainage works, there may be opportunities to undertake some of these works in advance or early in a particular phase of development.
- 4.4.7 The demolition and construction stage of the Proposed Development is expected to generate some potentially significant direct and indirect landscape and visual impacts, with temporary effects.

Landscape

- 4.4.8 The predicted construction effects are considered with reference to the published landscape character assessments, designated landscapes, local landscape character and Site specific landscape features and components.
- 4.4.9 The construction effects of the Proposed Development upon landscape receptors are detailed in the Landscape Effects Table (Appendix 4.4).

Published Landscape Character Assessment Studies:

National, Regional and County

- 4.4.10 In the context of the national scale landscape character assessment study covering extensive landscape tracts as defined by the National Character Areas (NCA's), the construction of the Proposed Development will have relatively contained implications and effects on the identified NCA's. At the regional and county scales of assessment the effects will be relatively greater, yet these will still occur over relatively localised parts of the more extensive landscape character areas or types. In these terms and at these scales, the wider and indirect construction effects of the Proposed Development will generally dissipate with distance from the Site.
- 4.4.11 The progressive nature of the construction works will have a direct effect upon a relatively limited southerly part of the *Northamptonshire Vales* National Character Area (NCA 89) and central northern part of the *Yardley Whittlewood Ridge* (NCA 91). The construction works will also have a direct effect upon a limited part of the *Undulating Mixed Farmlands* Landscape Character Type (5c).
- 4.4.12 The landscape effects arising during the construction period upon all of these national and regional scale character areas and types will be largely concentrated across and around the Site areas. The existing presence of urban and other active infrastructure and influences (eg M1 Motorway, A508, edge of Northampton, Roade) within these landscapes will also moderate to some degree the construction landscape effects of the Proposed Development, at these scales.
- 4.4.13 The construction effect of the Proposed Development upon these published Landscape Character Types and Areas will vary, yet at these scales will be at most **Minor Adverse** for those directly affected.
- 4.4.14 At a County scale, the construction of the Proposed Development will directly affect *The Tove Catchment* (6a) and *Bugbrooke and Daventry* (13b) character areas. Construction landscape changes will initially include removal of trees and other planting and changes to the landform to form the development plateaus, perimeter and roadside mounding and the bypass corridor. Subsequent construction of the road(s), buildings, intermodal area and associated infrastructure will result in direct effects upon the character and features of the landscape.
- 4.4.15 The magnitude of landscape change upon *The Tove Catchment* (LCA 6a) during the construction period will be Low/ Medium, resulting in a **Minor/Moderate Adverse** effect during construction of the Proposed Development.
- 4.4.16 The magnitude of landscape change upon the *Bugbrooke and Daventry* (LCA 13b) during the construction period will be Low/Negligible, resulting in a **Minor Adverse** effect during construction of the Proposed Development.

Other Landscape Areas

Courteenhall Registered Park and Garden

- 4.4.17 Construction activity will have a very limited effect upon the landscape of Courteenhall Registered Park and Garden which lies to the south east of the Main Site and south of the Courteenhall Road junction. Any effects will be indirect and will essentially result from a very slight change in outlook when looking north and westwards from this area. Views of this nature are considered to be of negligible or minor adverse significance. The nature of the existing landform and existing woodland within and surrounding the Registered Park and Garden will substantially limit any direct or indirect influences from construction on this landscape.
- 4.4.18 The most notable effect upon this landscape during construction is likely to arise as a result of the nearest highways works; - including a new roundabout on the A508 and associated landscaping - at the northern end of the Bypass Corridor and for construction of the nearest warehouse unit

in the south of the Main Site, yet even these works would have a very limited influence, given the mature, enclosed and inward looking nature of the Registered Park and Garden.

- 4.4.19 The magnitude of landscape change upon this landscape during the construction period will be Low/ Negligible, resulting in a **Minor Adverse** effect during construction of the Proposed Development.

Special Landscape Area

- 4.4.20 A Special Landscape Area (SLA) (Tove Valley SLA) extends across part of the landscape to the south east of Road. The southern extent of the proposed bypass works where it junctions with the existing A508 and nearby highway mitigation measures lie in the very far north east corner of the SLA (as depicted on Figure 4.1). At this point, the SLA extends west of the A508 and south of the disused rail line. Any direct or indirect effects of construction of the proposed bypass and highway mitigation measures upon this landscape will be very limited and the resulting landscape effect during construction will be **Negligible/Minor Adverse**. This is as a result of the very small area within the SLA to be affected, where the distinctiveness and special qualities of the SLA are lessnot apparent.

Local and Site Landscape

- 4.4.21 The landscape character of the Main Site and its more immediate context will change significantly during the construction period. The construction works will entail the active presence of plant and machinery, site compounds, temporary access routes and the increasing presence of the employment units and highways and other infrastructure.
- 4.4.22 The effect upon the Main Site landscape will be direct and notable. The existing farmland and other land areas within the Site boundary will be progressively affected, although some other areas and features will be retained and suitably protected and conserved during the course of the construction process, such as the existing woodlands known as Highgate and Churchill's. The conservation of these woodland areas and other woodland, trees and hedgerows largely around the Main Site perimeter will moderate to some degree the direct effects upon the landscape features.
- 4.4.23 The landscape character of the Main Site will change from one dominated by intensively managed arable farmland yet including existing notable surrounding major infrastructure and urbanising influences; to one dominated by the presence of large scale employment units, and additional rail and road infrastructure. The modified landscape character will include a substantial perimeter landscape, which will become increasingly apparent and visible during the construction period. This will assist in mitigating the visual influence of the emerging built development proposals over the surrounding landscape.
- 4.4.24 Beyond the Main Site boundary, the construction effects upon local landscape character will generally dissipate as the perimeter mounding and associated planting proposals are completed and the construction activity becomes less visible beyond the Main Site boundary. The indirect effects upon the local landscape character will be limited to the north, east and south of the Main Site but relatively greater to the west. The proposed mounding and the associated planting along the western Main Site boundary will however reduce the localised influence of the construction activity over the immediate landscape to the west once it has been formed.
- 4.4.25 The magnitude of the change arising from construction of the Proposed Development upon the character of the Main Site landscape will be High, resulting in a **Major Adverse** effect during construction of the Proposed Development.
- 4.4.26 Construction of the highway works associated with the M1 motorway, A508 and A45 will not be significant in landscape character terms. The character of the local landscapes along these particular routes is already dominated by these major roads and junctions and the associated

highway activity. Whilst landscape change and disruption will occur during the construction process, the character of these particular existing road corridor landscapes will not change significantly. Some areas of existing roadside planting and trees will be removed, yet this will be relatively limited in terms of the numbers and effects upon any areas of large trees and mature vegetation. The resultant construction effects upon the landscape character of these areas will not be significant.

- 4.4.27 The landscape character of the Bypass Corridor will change significantly during the construction phase. This change will arise from the progressive formation of the road corridor around the northern and western side of the settlement. This will entail the removal of stretches of hedgerows and a generally limited number of trees and the replacement of existing farmland with the new road, road junctions and associated structures and mounding, ponds and other planting and landscape features. The proposed road will also bridge across the Road Rail Cutting to the north west of the settlement.
- 4.4.28 The magnitude of the change arising from construction of the Bypass upon the character of the Bypass Corridor landscape will be High resulting in a **Moderate/Major Adverse** effect during construction of the Proposed Development.
- 4.4.29 Construction of the Highway Mitigation Measures will result in the removal of some existing trees, sections of hedgerows and grassed verges. The extent of these losses are detailed with the Arboricultural Assessment (Appendix 4.3) and Ecological Chapter. The effects upon the landscape both in terms of character and features (eg trees and hedgerows) will be limited and localised at each of these locations resulting in a **Negligible or Negligible/Minor Adverse** landscape effect at this scale of assessment.

Landscape Features

- 4.4.30 Landform: As part of the construction process, the Site landform will be progressively altered to create the required development plateau's, perimeter mounds and earthworks and SuDS balancing ponds and features. These works will be phased in accordance with the details provided (see Chapter 2 of this ES), and also relevant details contained in the Construction Environment Management Plan (CEMP) (Appendix 2.1).
- 4.4.31 The scale of the earthworks and the nature of the change to the existing landform will be significant. The existing landform and slopes within the Main Site generally fall from the west and north towards Junction 15 of the M1. The proposed construction will 're-model' this underlying landform to create a series of generally flat plateaus for the proposed employment buildings, associated areas of hardstanding/ parking and the rail intermodal area. Around these areas and principally to the north, west and east of the Main Site substantial perimeter mounding will be formed to enclose the built development components.
- 4.4.32 The earthworks proposals within the Main Site will combine "cut" and "fill" operations as part of a balanced and sustainable strategy. The development plateau areas will in general, include more "cut" areas, with much of the "fill" utilised to form the perimeter mounding. As a result, on balance, the development plateaus will generally sit lower than the existing ground levels. At the northern most extent of the Main Site, close to the south of Collingtree Road, the built development plateau will be formed at up to around 8 - 10 metres below existing ground levels. The more southerly of the development plateaus will include more "fill" areas and will thus be raised at least in part above the existing ground levels.
- 4.4.33 The earthworks proposals will constitute large scale operations, resulting in notable changes to and the creation of new landform characteristics across the Main Site area. The magnitude of landscape change upon the Main Site's landform will be High, resulting in a **Major Adverse** effect in landscape terms during construction of the Proposed Development.

- 4.4.34 Other landform changes will occur along the Bypass Corridor with the proposed road being sited on slightly higher and lower levels along its route around Road. There will also be proposed mounding located alongside the proposed bypass as part of the mitigation strategy to address potential visual and noise effects. The significance of the highway related construction effects on landform will be relatively more limited and localised. The magnitude of landscape change upon the Bypass Corridor landform will be Medium, resulting in a **Moderate Adverse** effect in landscape terms during construction of the Proposed Development.
- 4.4.35 The construction effect of the Highway Mitigation Measures upon the landform will be **Negligible** in landscape terms.
- 4.4.36 Woodland, Trees and other Vegetation: Details of those to be removed or retained are included within the Arboricultural Assessment.
- 4.4.37 Given the scale of the development and the Site, the numbers of trees and areas of planting to be removed to enable construction of the Proposed Development is considered to be relatively contained and not significant in more than local landscape terms. Importantly, Highgate Wood and the vast majority (approx. 84%) of Churchill's Wood, will be conserved and protected during the course of construction. In addition, some trees and planting between these woods; in the southern part of the Main Site and around the Main Site's perimeter will also be conserved and protected. Existing tree planting along the course of the M1 road corridor will also be suitably protected where necessary.
- 4.4.38 Existing woodland, tree belts and hedgerows will however also be removed across large areas of the Main Site as part of the construction activities. These losses are detailed in the Arboricultural Assessment (Appendix 4.3) and Ecology Chapter of this ES.
- 4.4.39 The resultant significance of the construction landscape effect upon the existing woodland, trees and vegetation on the Main Site has been assessed as **Moderate/Major Adverse**.
- 4.4.40 Existing trees, hedgerows and other planting to be removed along the Bypass Corridor will be relatively more limited. The most notable planting losses in landscape terms will arise at the Road Cutting crossing and in the south where some existing planting along the disused rail corridor will be removed. Other hedgerow and planting losses occur around the Bypass Corridor as detailed in the Arboricultural Assessment (Appendix 4.3) and Ecology Chapter of this ES.
- 4.4.41 The resultant significance of the construction landscape effect upon the existing woodland, trees and vegetation around the Bypass Corridor has been assessed as **Minor/ Moderate Adverse**.
- 4.4.42 Construction of the Highway Mitigation Measures will result in the removal of some existing trees, sections of hedgerows and grassed verges. The extent of these losses are detailed with the Arboricultural Assessments (Appendix 4.3) and Ecological Chapter. The resultant significance of the construction landscape effect upon the existing woodland, trees and vegetation at the Highway Mitigation Measures Sites has been assessed as **Negligible to Minor Adverse**.
- 4.4.43 Water Features and Watercourses: The Proposed Development will result in the loss of and some changes to existing drainage ditches within the Site area, although the small watercourse which runs through the south of the Main Site will be conserved. The pond at Rectory Farm will also remain undisturbed.
- 4.4.44 As part of the construction process and drainage strategy, modifications will be made to the watercourse and ponds in some locations yet this will not be significant in landscape terms. The construction process will also include the formation of a series of SuDS features, including around the proposed Bypass Corridor.

- 4.4.45 The magnitude of landscape change upon the Site's water features and watercourses (Main Site and Bypass Corridor) will be Low, resulting in at most a **Minor Adverse** landscape effect during construction of the Proposed Development.

Visual

- 4.4.46 A comprehensive visual impact assessment of the Proposed Development has been undertaken to determine the potential effects upon surrounding receptors. This has considered the specific effects arising during the construction stage and as a result of the likely phasing of the Proposed Development. A series of photo viewpoints, photomontages (for the completed development), related plans and a Visual Effects Table are included and collectively detail and support the description of the likely visual effects arising from construction of the Proposed Development.

Zone of Theoretical Visibility (ZTV)

- 4.4.47 The ZTV of the Proposed Development is described fully under the Operational Development section. During the construction stage, the visible extent of the Proposed Development will vary quite considerably subject to the nature of the construction works and the location of these within the respective Site areas. The ZTV for the completed development is illustrated on Figure 4.9.
- 4.4.48 The ZTV for the construction works associated with the Main Site and that of the construction works for the Bypass Corridor proposals will stretch over different areas as illustrated by the ZTV for the completed development at Figure 4.9. The visible extent of the higher parts of the buildings (including the rail gantry cranes) under construction will generally reflect the ZTV for the completed Proposed Development as detailed on Figure 4.9. However, the ZTV may be temporarily extended during the construction period by any use of cranes that are likely to extend to heights above the maximum building heights.
- 4.4.49 Once the construction of the perimeter mounding is in place around the Main Site, views towards construction activities will be greatly reduced, particularly for visual receptors close to the north, west and east of the Main Site. These visual receptors will include properties at Collingtree and Milton Malsor and Public Rights of Way (PROW) largely to the west of the Main Site. Once the perimeter mounding is formed, there will generally be very limited views from these directions towards any lower level construction activities. Construction of the buildings and in particular the higher parts of the buildings will however remain relatively more visible from the south (eg A508 users).

Effects upon Visual Receptors

- 4.4.50 The construction effects of the Proposed Development upon visual receptors are detailed in the Visual Effects Table (Appendix 4.5).
- 4.4.51 Given the nature and phasing of the Proposed Development, the visual effects arising from its construction will vary throughout this stage. Construction activities and plant movements within the Main Site and along the Bypass Corridor will be visible at times from all of those receptors with views towards the completed and operational development.
- 4.4.52 In general, the clearest views towards the construction activities and plant movements etc. will be experienced by residents and users of those properties, roads, rights of way and other receptors in closest proximity and with the clearest existing views towards the Site areas. More distant views will also be possible to construction activity, although in many instances these views will be limited to the construction of the perimeter mounding and to the frames and higher parts of the proposed buildings.

4.4.53 The significance of the visual effects for all of the receptors will vary during the course of construction and will generally be most notable during construction of those works closest to the respective receptor, including the formation of some of the mounding proposals. At these times, the significance of the visual effects arising for some receptors may exceed those resulting from the completed and operational development, although these construction visual effects will only occur for a temporary period. The formation and planting of the perimeter mounding, once completed and particularly to the north and west of the Site will help to restrict and screen some of the views towards the construction activities.

4.4.54 Overall, the construction effects on the surrounding visual receptors will vary **from Negligible Adverse to Major Adverse** (as detailed within the Visual Effects Table), with the receptors with the closest and clearest views towards the construction activity generally experiencing the most significant visual effects at the peak of construction activity.

Operational Effects

4.4.55 The Proposed Development is expected to generate a range of potential significant direct and indirect landscape and visual impacts, with likely permanent effects. The stated operational effects are based upon the full completion of the Proposed Development and do not take into account the subsequent management and maturing of the existing and new landscape and planting proposals. These effects which take into account the growth of the trees over 15 years are considered and outlined in the subsequent Residual Effects section.

4.4.56 Landscape and visual effects will result from the introduction of permanent changes to the landscape and within views as a result of the completed development. Key changes to the landscape and to views will occur due to the introduction of the following proposed elements:

- New employment units and associated offices;
- New rail related features and activities including the intermodal facility with gantry cranes and storage areas including container stacking area;
- Highway improvements at and around Junction 15 of the M1 and elsewhere within the locality;
- New road access into the Main Site from the A508;
- New Bypass to Roade;
- External operational areas and HGV/Car Parking;
- Regrading and remodelling of the Site landscape to accommodate the development and new landscaping proposals;
- Other new infrastructure (roads and paths);
- New tree, shrub and woodland planting;
- New wetland habitats associated with the formation of a Sustainable Drainage System (SuDS);

Landscape

- 4.4.57 The predicted operational effects are considered with reference to the published landscape character assessments, designated landscapes, local landscape character and Site specific landscape features and components.

Published Landscape Character Assessment Studies

National, Regional and County

- 4.4.58 In the context of the national scale landscape character assessment study covering extensive landscape tracts as defined by the National Character Areas (NCA's), the completed and operational development will have relatively contained implications and effects on the identified NCA's. At the regional and county scales of assessment the effects will be relatively greater, yet these will still occur over relatively localised parts of the more extensive landscape character areas or types. In these terms and at these scales, the wider and indirect operational effects of the Proposed Development will generally dissipate with distance from the Site.
- 4.4.59 The Proposed Development will have a direct effect upon a relatively limited southerly part of the *Northamptonshire Vales* National Character Area (NCA 89) and central northern part of the *Yardley Whittlewood Ridge* (NCA 91). The construction works will also have a direct effect upon a limited part of the *Undulating Mixed Farmlands* Landscape Character Type (5c).
- 4.4.60 The landscape effects upon all of these national and regional scale character areas and types will be largely concentrated across and around the Site areas. The existing presence of urban and other active infrastructure and influences (eg M1 Motorway, A508, edge of Northampton, Roade) within these landscapes will also moderate to some degree the resulting landscape effects of the Proposed Development, at these scales.
- 4.4.61 The operational effect of the Proposed Development upon these published Landscape Character Types and Areas will vary yet at these scales will be at most **Minor Adverse** for those directly affected.
- 4.4.62 At a County scale, the Proposed Development will directly affect *The Tove Catchment* (6a) and *Bugbrooke and Daventry* (13b) character areas. Landscape changes will include the replacement of an area of arable farmland with new large scale rail terminal and related employment development and a road bypass to Roade. Extensive landscape proposals including the conservation of mature woodlands and other tree belts and tress will also form an important component of the scheme. Collectively all of these elements will constitute a Low/ Medium magnitude of change to *The Tove Catchment* (LCA 6a), resulting in a **Minor/Moderate** Adverse effect upon completion of the Proposed Development.
- 4.4.63 The magnitude of landscape change upon the *Bugbrooke and Daventry* (LCA 13b) will be Low/ Negligible, resulting in a **Minor Adverse** effect upon completion of the Proposed Development.

Other Landscape Areas

Courteenhall Registered Park and Garden

- 4.4.64 There will be limited operational landscape effects upon the landscape of Courteenhall Registered Park and Garden. Any effects will be indirect and will result from the limited and contained influence of the operational Proposed Development. The nature of the existing landform and in particular the existing woodland within and surrounding the Registered Park and Garden will notably limit any indirect influences from the Proposed Development on this landscape.
- 4.4.65 The magnitude of landscape change upon this landscape will be Low/ Negligible, resulting in a **Minor Adverse** effect upon completion of the Proposed Development.

Special Landscape Area

- 4.4.66 The Special Landscape Area (SLA) extends across part of the landscape to the south east of Roade. The southern extent of the proposed bypass works where it junctions with the existing A508 lies in the very far north east corner of the SLA as depicted on Figure 4.1. At this point the SLA extends west of the A508 and south of the disused rail line. Any direct or indirect effects of the proposed bypass upon this landscape will be extremely limited and the resulting landscape effect upon completion of the Proposed Development will be **Negligible/ Minor Adverse**.

Local and Site Landscape

- 4.4.67 The Proposed Development will change the character of the Main Site from one dominated by intensively managed arable farmland including woodland and farm buildings to one dominated by the presence of large scale employment units, rail infrastructure and related components and infrastructure.
- 4.4.68 The loss of the existing farmland use would be permanent and irreversible. The new landscape will however, also include a substantial landscape and green infrastructure component, which will become increasingly apparent and visible as it matures. Notably, the two mature woodlands (Highgate and Churchill's) within the relatively more elevated western part of the Main Site will be conserved and substantial new woodland areas and habitats will extend largely around the broad perimeter of the Main Site.
- 4.4.69 The magnitude of the landscape change arising at this localised scale will be Medium/ High, yet it will not all be adverse. The conservation of the two woodlands in the west and the creation of the extensive new woodland areas and belts of native planting will offer some mitigation and beneficial change in landscape terms.
- 4.4.70 The resultant landscape effect of the Proposed Development upon the Main Site landscape upon completion will be **Moderate/ Major Adverse**. However, this will reduce in the medium to longer term to a **Moderate Adverse** effect as the existing and new planting matures and is appropriately managed.
- 4.4.71 The landscape character of the Bypass Corridor will similarly undergo a notable change to the local landscape as a result of the proposed bypass. This proposed road will extend across farmland to the north and west of Roade and will form a new feature within this settlement edge landscape. The proposed road corridor will include new mounding and planting that has been designed to effectively assimilate and mitigate the potential effects of the road corridor within this local landscape.
- 4.4.72 New woodland, trees and hedgerow planting associated with the Bypass Corridor proposals will connect with and provide links to existing habitats adjoining or close to the new road. There will be an overall net gain in number of native trees and hedgerows along the Bypass Corridor.
- 4.4.73 The magnitude of the change arising from the proposed bypass upon the character of the Bypass Corridor landscape will be Medium resulting in a **Moderate Adverse** effect upon completion of the Proposed Development. This will reduce in the medium to longer term to a **Minor/ Moderate Adverse** effect as the existing and new planting matures and is appropriately managed.

Landscape Features

- 4.4.74 Landform: Upon completion of the Proposed Development, the landform of the Main Site will have been substantially modified by the construction works (as outlined in the preceding Construction Effects section). The resultant landform within the Site will include changes arising from the formation of the broadly flat development plots and rail area from the formation of some significant perimeter mounding. Proposed woodland and tree planting along and across many of these mounds will assist in integrating these changes.
- 4.4.75 The resultant changes to the landform will result in extensive yet largely localised and contained changes to the landform characteristics across the Main Site. The magnitude of landscape change upon the Site's landform will be High at this more localised scale, resulting in a **Moderate/Major Adverse** landscape effect upon completion of the Proposed Development.
- 4.4.76 The proposed mounding located alongside the proposed bypass will represent localised changes to the underlying rolling landform, yet the associated woodland and tree planting will assist in integrating these changes over time. The magnitude of landscape change upon the Bypass Corridor landform will be Low/ Medium, resulting in a **Minor/ Moderate Adverse** landscape effect upon completion of the Proposed Development.
- 4.4.77 The effect of the Highway Mitigation Measures upon the landform will be **Negligible** in landscape terms.
- 4.4.78 Woodland, Trees and other Vegetation: Details of those woodlands, trees and other planting to be removed or retained are included within the Arboricultural Assessment (Appendix 4.3)
- 4.4.79 Careful attention has been paid throughout the design process to minimise the potential effects upon woodland, trees and hedgerows as part of a balanced and well considered development solution. Highgate Wood and the vast majority (approx. 84%) of Churchill's Wood, will be conserved. In addition, some trees, hedgerows and other habitats between these woods; in the southern part of the Main Site and around the Main Site's perimeter will also be conserved as part of the future proposed Site wide Green Infrastructure (GI).
- 4.4.80 A significant number of new woodland areas, tree belts, other trees and tree groups, hedgerows and planting will be implemented as part of the Proposed Development. All of this new and existing planting will form an extensive and well connected framework of planted corridors and green spaces stretching around the new built development plots. This new planting will comprise predominantly native and indigenous species that is appropriate to the Site's location and landscape characteristics and will satisfy other biodiversity aims.
- 4.4.81 The proposed GI, encompassing the new woodland, trees, hedgerows and other planting, habitats and open space will extend across a significant proportion of the Main Site area. Upon completion of the Proposed Development there will be an overall net gain in the areas of woodland/ tree groups/ trees and lengths of hedgerow across the Site. Whilst this does not directly replace for the loss of existing mature woodland, trees and hedgerows, it will nevertheless extend the age profile of the site wide planting and will be supported by a comprehensive and long term management regime that will include the existing conserved woodlands, trees and hedgerows.
- 4.4.82 The loss of existing woodland, trees and hedgerows along the Bypass Corridor will be relatively limited as detailed under the Construction Effects and there will be new native woodland, hedgerows and other tree belts planted along this corridor to assist in assimilating and mitigating the road proposals. This proposed planting will also represent an overall net gain in the numbers and areas of woodland, trees and hedgerows along the Bypass Corridor.

- 4.4.83 The magnitude of landscape change upon the Site's (Main Site and Bypass Corridor) woodland, trees and hedgerows will be Low, resulting in a **Minor Adverse** effect upon completion of the Proposed Development. In the medium to longer term this change to a neutral and subsequently **Minor Beneficial** effect as the existing and new planting matures and is appropriately managed.
- 4.4.84 Water Features and Watercourses: The Proposed Development will include the formation of a number of water features and wetland areas largely as part of a Sustainable Drainage Strategy. These features will be designed to maximise their contribution in landscape and biodiversity terms alongside the drainage requirements. Many of these features will be sited in the south of the Main Site and will contribute towards the landscape frontage of the Main Site. Other drainage features as part of the proposed Bypass Corridor will also contribute positively at a localised scale.
- 4.4.85 The magnitude of landscape change upon the Site's water features and watercourses will be Negligible/ Low Beneficial, resulting in a **Negligible/ Minor Beneficial** landscape effect upon completion of the Proposed Development (Main Site and Bypass Corridor).

Visual

- 4.4.86 A comprehensive visual impact assessment of the Proposed Development has been undertaken to determine the potential effects upon surrounding receptors. This has considered the specific effects arising during the operational stage. Two assessments have been conducted for receptors during the operational stage of the Proposed Development. The first considers the effects upon full completion of the development and in the winter period (i.e. the screening effects of any deciduous foliage in the summer is not taken into account) and the second predicts the residual effects 15 years after completion and in the summer period (thus enabling the effectiveness of any planting to be evaluated).
- 4.4.87 A series of Photo Viewpoints, Photomontages, related plans and a Visual Effects Table are included and collectively detail and support the description of the likely visual effects arising from the Proposed Development.

Zone of Theoretical Visibility (ZTV)

- 4.4.88 The ZTV of the Proposed Development is the theoretical area from within which the Proposed Development will be visible. It is representative and is not an indicator of the significance of the visual effect. Two ZTV's are detailed on Figure 4.9. Firstly a ZTV based upon a computer model and Ordnance Survey landform data, taking no account of existing woodland, buildings or other structures, and secondly a ZTV that has refined and 'tested' the computer model version on site and by other desk based analysis e.g. cross sections. It is the latter, ZTV (Site Analysis) that is considered to be most representative of the areas from within which the Proposed Development is likely to be visible. Further details on the ZTV and methodology employed is included at Appendix 4.1.
- 4.4.89 The ZTV of this Proposed Development is primarily defined by the topography surrounding the Site, with existing woodland, hedgerows and trees and settlement areas also interrupting and screening potential views. The ZTV of the Main Site Proposed Development extends to varying degrees to the north, south, east and west of the Site. It extends over the relatively broadest area to the west, with more distant ZTV areas situated to the north and north east. Visibility of the Main Site Proposed Development is relatively more contained to the south and south east.
- 4.4.90 The ZTV of the Bypass Corridor is relatively contained and interrupted. This ZTV does not stretch significantly from the Bypass corridor or over a large area and it is largely defined by the undulating nature of the local landform and to a lesser degree by the existing settlement edge and surrounding trees and hedgerows.

Photomontages

- 4.4.91 In addition to the Photo Viewpoints (Figure 4.7) that support the baseline description of the landscape and visual amenity of the Site and its surroundings, a number of Photomontages for the Proposed Development have been prepared and are included at Figure 4.10. – Figure 4.454
- 4.4.92 The Photomontages aim to simulate the likely visual changes that will result from the Proposed Development. They have been prepared in accordance with accepted guidance, as set out in The Landscape Institute Advice Note 01/11 '*Photography and photomontage in landscape and visual impact assessment*' and detailed in Appendix 4.1.
- 4.4.93 The Proposed Development illustrated within the Photomontages is based upon the Illustrative Masterplan and depicts the proposed maximum height of the buildings and rail infrastructure on the maximum height (ie maximum finished floor levels (FFL`s)) for the respective development plots/ zones, as detailed on the Proposed Development Parameters Plan. In this regard, the results present the potentially worst case scenario in terms of the visible extent of the proposals within the views.
- 4.4.94 At this stage, the design and elevational treatments of the proposed buildings is illustrative only and the subsequent design and detailing of the buildings and other structures (elevational treatments, colours, rooflines etc.) will be subject to subsequent approvals under the requirements in the DCO, following approval of the order.
- 4.4.95 The photomontages depict the scheme upon full completion of all the earthworks, buildings, rail and road infrastructure and landscape proposals etc. Two photomontages are included for each viewpoint, namely;
- Upon full completion; and
 - 15 years post full completion.
- 4.4.96 The 15 years post full completion photomontage is used to convey the residual effect of the landscape and planting proposals after 15 years of growth and appropriate management.

Effects upon Visual Receptors

- 4.4.97 The effects of the Proposed Development upon visual receptors are set out in full in the Visual Effects Table (Appendix 4.5). The following summarises the visual effects of the Proposed Development upon full completion and prior to the growth and management of the proposed planting and habitats. This includes landscape mitigation which is implemented as an integralherent part of the Proposed Development. The assessment does not however take into account the subsequent management and maturing of the existing and new landscape and planting proposals which is covered in the residual effects section. Receptor references are included in brackets and refer to the Visual Effects Table and the location of the Visual Receptors as shown on Figure 4.8.

Settlement and Properties

- 4.4.98 Views towards the completed Development will be possible from settlement areas and properties surrounding the Site and will range from close and clear views to distant and restricted views.
- 4.4.99 Views towards the Proposed Development from Milton Malsor (Visual Receptor Reference P1) will be limited due largely to the existing restricted nature of views towards the Main Site. The land gently falls through this settlement from the south east towards the north west and away from the Main Site. The south easterly edge of the settlement also includes some mature trees and planting areas that also limited the potential views in the direction of the Proposed Development.

- 4.4.100 Where any views towards the Proposed Development are possible they will be limited to the outer mounding and associated planting proposals principally in the northwest corner of the Main Site and along the western perimeter (Refer to Photomontage Viewpoint 16 at Figures 4.1018 – 4.20). Notwithstanding the absence of views of the new built development, the significance of the visual effects upon those properties at Milton Malsor with any available views will be **Moderate Adverse** upon completion of the Proposed Development. It should be noted however that the majority of properties at Milton Malsor will have no views towards any element of the Proposed Development.
- 4.4.101 A very small number of properties to the east of Milton Malsor on the Collingtree Rd (P2/ P3) will have views towards the northern perimeter of the Main Site. The visible extent of the proposals along this edge of the Main Site will be effectively and predominantly limited to the perimeter mounding and landscape proposals. The proposed employment units and operational areas will be effectively screened by the rising ground and mounding. The significance of the visual effects upon these three properties will be **Moderate Adverse** upon completion of the Proposed Development.
- 4.4.102 From Collingtree (P4) to the east of the Main Site and immediately east of the M1 motorway, potential views towards the Proposed Development will be limited to a very small proportion of properties principally on the western side of the settlement. For the very small number of properties with the clearest views it will be the eastern perimeter mounding and associated landscape proposals in the north east part of the Main Site area and the upper parts of the nearest building units that will be visible (Photomontage Viewpoint 19). Operational activities and the lower parts of the built developments will not be visible as they will be effectively screened by the combination of existing trees and planting and new mounding and planting.
- 4.4.103 The significance of the visual effects upon the small numbers of properties at Collingtree with any available views will be **Minor/ Moderate Adverse** upon completion of the Proposed Development.
- 4.4.104 To the south of the Main Site are a small number of scattered properties (P5/ P6) that will have varying views towards the Proposed Development. The clearest views will include restricted views towards the built development in the southern part of the Main Site and towards the mounding and proposed planting on the southern boundary. The significance of the visual effects upon this small number of properties will be **Moderate Adverse** (and **Moderate/ Major Adverse** for Courteenhall West Lodge Farm) upon completion of the Proposed Development.
- 4.4.105 Potential views from Courteenhall House and other buildings or properties within the estate (P7) are very effectively screened by existing mature woodland and tree belts within and around the estate (Photomontage Viewpoint 26). No direct views towards the Proposed Development have been identified from the House. Glimpsed views may however be possible most likely in winter from within the grounds, yet these would be very limited and any visual effects are unlikely to be any more than **Minor Adverse**, and more likely to be **Negligible**. From the vast majority of the grounds no views towards the Proposed Development are likely. No views towards the proposed Development have been identified from Courteenhall (P8)
- 4.4.106 Views towards the Proposed Development from Blisworth to the west of the Main Site are limited due to the nature of the landform underlying this settlement, which generally limits the opportunities for views in the direction of the Main Site. Those properties with any potential views towards the Proposed Development are limited to a small number of properties on the north eastern edge of the settlement, on the Courteenhall Rd (P9/ P10).
- 4.4.107 From these properties, distant views primarily from first floor windows will be possible towards the Proposed Development. In these existing expansive and varied views, it will be the perimeter mounding and planting on the western side of the Main Site that will be most visible, although views towards the higher parts of the buildings and gantry cranes within the intermodal area will also be possible. The significance of the visual effects upon the limited number of properties with any available views at this location will be **Minor/ Moderate Adverse** upon completion of the Proposed Development.

- 4.4.108 Other distant and limited views from west of the Main Site towards the Proposed Development will be potentially possible from a small number of properties north and north west of Blisworth (P11/ P12). The significance of the visual effects upon this small number of properties will be **Minor Adverse** upon completion of the Proposed Development.
- 4.4.109 Views towards the proposed Development from properties within Northampton will be limited and restricted. Very restricted views may be possible from a very limited number of properties at Grange Park (P13). The highest parts of the Proposed Development will also be seen beyond the existing urban area from limited locations north of Collingtree (P14) and from other limited yet more elevated properties at or close to Wootton (P15) (Photomontage 24). There will be no views towards the Proposed Development from the vast majority of properties within these southern parts of Northampton. The significance of the visual effects upon those properties with any available views will be up to **Minor Adverse** upon completion of the Proposed Development.
- 4.4.110 From Lodge Farm, Lathvilly Farm and a further property on Barn Lane (P16), a mix of restricted and more open views towards the western edge of the Main Site will be possible, with some existing planting and structures, largely within the grounds of the respective properties, limiting some views towards the Main Site. Where views are possible, it will be the perimeter mounding and associated planting that will form the main development components in the views. The built development and intermodal rail terminal area will be effectively screened by the perimeter mounding and planting. The significance of the visual effects upon these properties will be up to **Moderate Adverse** upon completion of the Proposed Development.
- 4.4.111 The proposed bypass may be glimpsed beyond intervening trees and a hedgerow by a small number of properties on the northern edge of Roade at and close to Bailey Brooks Lane (P17) (Photomontage 29). The rising ground and the existing intervening hedgerow planting/ trees around the playing fields will however screen any clear views towards the bypass corridor. Proposed mounding and planting along the southern side of this stretch of the bypass will reinforce this existing screening from the settlement edge. Generally, there will be no views towards the Bypass Corridor proposals or any vehicles on the road from most properties in the northern part of Roade. Where any restricted views are possible the resultant visual effects are likely to be no more than **Minor Adverse**.
- 4.4.112 Properties on the northern side of Dovecote Rd, Roade (P18) have relatively clear views northwards across the immediate landscape. The proposed bypass will extend across this view, although proposed mounding, screen fencing and planting will partially screen and mitigate the effects of the road/ traffic in these views. There will nevertheless be a notable change to the view for those properties with the clearest views northwards. The significance of the visual effects upon these properties will be **Moderate/ Major Adverse** upon completion of the Proposed Development.
- 4.4.113 Nearby properties on Blisworth Rd on the western edge of Roade (P19) (Photomontage 33) will also have views towards the proposed bypass as it extends around the settlement edge landscape. Proposed intervening mounding and planting, together with screen fencing will effectively screen most views towards traffic on the road. Where visible the road/ traffic is most likely to be seen over a short distance gradually rising on the slopes to the west, yet will be effectively screened from views to the north west and south west and other directions. The significance of the visual effects upon these properties with views will be up to **Moderate Adverse** upon completion of the Proposed Development.
- 4.4.114 To the west of Blisworth Rd, two properties (Dovecote Farm and nearby property) (P20) are likely to have varying yet close views to at least part of the bypass proposals. The proposed mounding, planting and screen fencing will mitigate and screen views towards the east and south, although due to the proximity of the proposals, the clearest views are likely to result in a **Moderate/ Major Adverse** visual effect upon completion of the Proposed Development.

- 4.4.115 A relatively limited number of other properties on the western edge of Roade on Wallwin Close and Hoe Way (P21) will also have potential views westwards towards the proposed bypass. These views will however be restricted by intervening hedgerows and planting and other existing buildings and features to the west and south will limit the potential field/ extent of the available views. Vehicles using the proposed road are likely to be visible from some of these properties yet overall these will be limited and the existing and proposed planning and mounding will be effective in mitigating the resulting effects. The significance of the visual effects upon any of the properties with available views will be up to **Minor/ Moderate Adverse** upon completion of the Proposed Development.
- 4.4.116 Two other properties (Netherwood and Hyde Farm) (P22/ P23) situated to the west and southern extent of the Bypass Corridor will have restricted and limited views towards the proposed road resulting in respectively **Minor/ Moderate Adverse** and **Moderate Adverse** visual effects.

Public Rights of Way (PROW) / Footpaths

- 4.4.117 Views from this public footpath (F1) will change significantly as the existing route will be diverted around the Main Site as part of the Proposed Development. The diverted route will be sited within the perimeter landscape framework and largely on the outer mid slopes of the proposed mounding to the north and west of the Main Site area. Two proposed viewpoints from positions on the higher ground along the western perimeter of the site are proposed and would be accessed by permissive footpath connections from this diverted footpath. Views from this diverted footpath will inevitably alter significantly and will be dominated by the new planting and habitat proposals and mounding. Opportunities for more expansive and elevated views across the landscape to the west of the site will be possible.
- 4.4.118 Whilst the nature of the views will inevitably change significantly as a result of the diversion, the effective visual screening of the built development from much of the diverted route by the mounding and landscape proposals will mitigate to some degree the visual effects. The significance of the visual effect upon users of this footpath will be **Moderate/ Major Adverse** upon completion of the Proposed Development. However, this will reduce in the short to medium term as the existing and new planting matures and is appropriately managed.
- 4.4.119 Views from the public footpath (F2) that extends through the central part of the Main Site in a north westerly direction from the A508 will also change markedly as a result of the necessary diversion of this footpath. The nature of the views from this diverted stretch of footpath will include the new large scale employment units and associated infrastructure and landscape proposals. The footpath (will be combined with a cycleway) will still maintain a direct link between the A508 and the footbridge over the M1 into Collingtree. The significance of the visual effect upon users of this footpath will be **Moderate/ Major Adverse** upon completion of the Proposed Development. However, this will reduce in the short to medium term to as the new landscape and planting matures and is appropriately managed.
- 4.4.120 Public footpath (F3) lies to the west of the Main Site and extends north towards Milton Malsor connecting with Barn Lane (Photomontage 7). Views eastwards from this route to the north of Milton Crossing will include existing arable farmland in the foreground with views towards the perimeter mounding and landscape proposals beyond the NLRL. Views towards the built development will be notably restricted by this perimeter mounding and planting although there will be some limited and largely glimpsed views beyond to the higher parts of the building and gantry cranes within the intermodal area. The significance of the visual effect upon users of this footpath will be **Moderate Adverse** upon completion of the Proposed Development.
- 4.4.121 From public footpath (F4) views towards the Proposed Development will be possible to the east of Blisworth playing field, although from the playing field itself and lower lying stretches near the WCMLR views will be more limited. Where views are possible, the highest parts of some of the employment units and rail gantry cranes will be visible beyond the perimeter mounding and

planting to the western boundary of the Main Site. The significance of the visual effect upon users of this footpath will be **Moderate Adverse** for the clearest views upon completion of the Proposed Development, with other views of lesser significance.

- 4.4.122 There will be restricted views towards the Proposed Development from stretches of Public Rights of Way (PROW) (F5 – F8) (Photomontage 10) close to Courteenhall Rd to the south west of the Main Site. North easterly views towards the Proposed Development will be possible from some stretches of these PROW across intervening farmland. In these views the higher parts of limited parts of the building units will be visible beyond intervening woodland and trees. The proposed mounding and planting along the western perimeter of the Main Site will also be effective in screening views towards the majority of the built development, including the intermodal area and other active parts of the Proposed Development. The significance of the visual effect upon users of these stretches of PROW will be **Minor/Moderate or Moderate Adverse** upon completion of the Proposed Development.
- 4.4.123 Limited and restricted views towards the Proposed Development will be possible from the public footpath (F9), which forms part of the Grand Union Canal Walk, between the A43 underpass at Blisworth Junction and the WCMLR underpass (north of Station Road). In any available views, the highest parts of the proposed units may be distantly visible beyond the perimeter mounding and planting although the majority of the proposed built development will be very effectively screened from view. Some restricted and filtered views will be possible towards the outer mounding and landscape proposals on the western edge of the development. The significance of the visual effect upon users of this footpath will be **Minor Adverse** where any available views exist, upon completion of the Proposed Development. From most of this localised stretch of canalside there will be no views towards the Proposed Development.
- 4.4.124 Other limited, distant and restricted views towards part of the Proposed Development may be possible from short stretches of PROW (F10/ F11) to the west and northwest of Blisworth, resulting in at most a **Minor Adverse** visual effect upon completion of the Proposed Development.
- 4.4.125 Public footpath (F12) extends eastwards from Milton Malsor to Maple Farm before crossing the M1 towards Collingtree Golf Course. Views south eastwards from this route will include existing farmland in the foreground with the perimeter mounding and landscape proposals seen beyond Collingtree Road. The built development and associated activity will be very effectively screened from view, with little or no opportunity to see the built development. The significance of the visual effect upon users of this footpath will up to **Minor/ Moderate Adverse** upon completion of the Proposed Development.
- 4.4.126 Other more distant and limited views towards the Proposed Development will be possible from short stretches of PROW to the north east of the M1 and east of Wootton (F13/ F14/ F15). The significance of the visual effect upon users of these footpaths will be **Minor Adverse/ Negligible** upon completion of the Proposed Development.
- 4.4.127 North of Roade, there will be relatively close and clear views from existing footpaths (F16/ F17) (Photomontage 31) toward the proposed bypass. Relatively close and open views southwards from these routes will be possible towards the bypass as it extends around to the north of Roade (to both the east and immediate west of the rail line). The new road will form a notable element in these views, although new planting and mounding proposals will offer some visual filtering and mitigation of views. The significance of the visual effect upon users of these stretches of footpaths will be **Moderate/ Major Adverse** upon completion of the Proposed Development.

- 4.4.128 From the Public Bridleway ('Midshires Way') (F18) to the west of Roade, close and clear views towards the proposed bypass will be possible over a short stretch of the bridleway. Views towards the road and associated traffic will vary subject to the position along the route. Where the bridleway is close to and crosses (via an underpass) the proposed road, the visual change will be most significant. From further to the east and west, the visual effects will be reduced and from a relatively short distance to the west, there will be no available views towards the proposed road. The significance of the visual effect upon users of this bridleway will be up to **Major Adverse** where the closest and clearest views are available, upon completion of the Proposed Development. However, this will reduce in the short to medium term to as the existing and new planting matures and is appropriately managed.
- 4.4.129 Other views towards the proposed bypass will be possible from a footpath (F19) and bridleway (F20) towards the southern end of the Bypass Corridor. Views from these routes will vary along those stretches that allow any views towards the proposed bypass. The significance of the visual effect upon users of these routes will be **Moderate** or **Minor/ Moderate Adverse** upon completion of the Proposed Development.

Roads

- 4.4.130 Views towards the Proposed Development will be possible from a number of roads within the vicinity of the Site. Views towards the Proposed Development will be possible for users of the M1 motorway (R1). Views of new built development (predominantly Units immediately to the west of the motorway corridor) will occur over a relatively short stretch of the motorway. Immediately to the north east of the main built development area the motorway lies partially within a cutting and includes some continuous mature tree belt planting on either side. This effectively limits the opportunity for views out from the road corridor towards the Main Site. The combination of existing cutting and planting plus new mounding and planting will however effectively screen the built development and operational activity. The significance of the visual effect upon users of the M1 motorway will be **Minor Adverse** upon completion of the Proposed Development.
- 4.4.131 From the approximately 1.0 km stretch of the A508 (R2) (Photomontage 5) immediately to the south east of the main built development area, there will be close and direct views towards the built development, and operational areas together with the road frontage landscape. In general, the proposed buildings will be set back some distance from the road beyond a broad landscape swathe encompassing new sustainable drainage features and new tree and other planting. Further to the south, the views are more restricted by existing roadside trees and planting. The significance of the visual effect upon users of the A508 will be **Minor/ Moderate Adverse** upon completion of the Proposed Development.
- 4.4.132 Varying visual effects will occur for users of the A45 (R3) as a result of the highway improvement works to the north of Junction 15 although it is likely that the employment units may also be seen approaching Junction 15 from the north. The significance of the visual effect upon users of the A45 will be at most **Minor Adverse** upon completion of the Proposed Development.
- 4.4.133 Limited and intermittent views towards the Proposed Development for users of Watering Lane (R4) to the east of Collingtree will be possible where gaps in the roadside vegetation occur. Views towards the highest parts of the employment units together with the perimeter mounding and landscaping to the south west of the M1 will be possible from a short stretch of Watering Lane between the Hilton Hotel and Collingtree. These views will occur over a short distance and in the context of other existing road and urban influences. The significance of the visual effect upon users of this stretch of Watering Lane will be **Minor/ Moderate Adverse** upon completion of the Proposed Development.

- 4.4.134 Immediately to the north of the Main Site, close and direct views towards the Proposed Development will be possible for users of Collingtree Road (R5). These views occur between the NLRL in the west and the M1 motorway bridge crossing to the east. Close and direct views towards the built development will however be restricted and screened by the conserved roadside hedgerows and trees and the proposed mounding and planting immediately beyond. This existing and new mounding and planting will be particularly effective in screening views towards the employment units, which will be set down along this northern part of the Main Site. The significance of the visual effect upon road users of this stretch of Collingtree Rd will be **Minor/Moderate Adverse** upon completion of the Proposed Development.
- 4.4.135 From the stretch of Courteenhall Road (R6) between the A508 and Blisworth some views will be possible largely towards the outer mounding and landscape proposals on the western side of the Main Site, together with the highest parts of some of the employment units and gantry cranes within the intermodal area. These existing wide ranging views also include other existing settlement, industrial units and major transport infrastructure. The significance of the visual effect upon users of the stretch of Courteenhall Road with any views will be **Minor Adverse** upon completion of the Proposed Development.
- 4.4.136 Other potential views towards the Proposed Development will be possible for users of a number of roads within the surrounding landscape. These include Gayton Road to the west of Blisworth (R7); elevated sections of the A43 to the north of the WCMLR (R8); an unnamed road providing access to Courteenhall village and Quinton off the A508 (R9) (Photomontage 25); Wooldale Road around the periphery of Wootton (R10); and the B526 to the east of Wootton (R11). For any users of these roads with views towards the Proposed Development, the significance of the visual effect will be largely **Minor Adverse/ Negligible** upon completion.
- 4.4.137 In relation to the proposed bypass, there will be views towards it from Blisworth Rd (R12). The proposed bypass will cross this road and a new junction arrangement will be formed. This will result in some notable change over a limited stretch of the existing road. New mounding and planting will however, assist in mitigating and assimilating the new road. The significance of the visual effect upon users of the limited stretch of Blisworth Road with any views will be **Minor/Moderate Adverse** upon completion of the Proposed Development.

Other Receptors

- 4.4.138 To the west of the Main Site the Northampton Loop Railway Line (NLRL) (O1) lies generally within a cutting and includes some continuous mature tree belt planting on either side. This effectively limits the opportunity for views out from the railway corridor towards the Main Site. Close easterly views towards the Proposed Development will however be possible towards the proposed mounding and planting along the western side of the Main Site. Views into the intermodal area and towards the proposed built development will also be possible where rail connections to/ from the intermodal area are sited and there are breaks in the perimeter mounding. The significance of the visual effect upon users of the rail line alongside the Main Site will be **Minor/Moderate Adverse** upon completion of the Proposed Development.
- 4.4.139 From the relatively elevated stretches of the West Coast Mainline Railway (O2) between Road Cutting and the A43 some views will be possible towards the perimeter mounding and landscape proposals and potentially to the highest parts of the employment units and rail gantry cranes. The significance of the visual effect upon users of this stretch of the rail line will be **Minor Adverse** upon completion of the Proposed Development.
- 4.4.140 From Grange Park Industrial Estate (O3) it is predicted that there will be no or very limited views towards the Proposed Development and any visual effect will be at most **Minor Adverse/ Negligible**. From the vast majority of the estate, there will be no potential views towards the Proposed Development.

4.4.141 Some views towards the Proposed Development from the Hilton Hotel (O4) will be possible across the M1 road corridor. Existing views are however restricted and include the adjacent M1 motorway, Junction 15 and the A45. The magnitude of the visual change for any available views will therefore be lessened by the presence of these existing features. From the majority of the rooms within the hotel there will be no available views of the Proposed Development. Where clearer views towards the south west and the proposals are however possible, the significance of the visual effect will be **Minor Adverse** upon completion of the Proposed Development.

4.4.142 Restricted and filtered views northwards towards the proposed bypass will be possible for users of the Roade Playing Fields (O5) (alongside the Roade Village Hall) (Photomontage 29). Existing views are however limited by the existing hedgerow and tree planting to the north of the playing fields and further proposed planting beyond this will strengthen the visual screening of views towards the road and vehicles. The significance of the visual effect upon users of the playing fields will be at most **Minor/ Moderate Adverse** upon completion of the Proposed Development.

4.4.143 Other restricted and limited views will be possible towards the proposed bypass from Roade Football Club (O6) and Roade School Sports College (O7). The significance of the visual effect upon users of these facilities will be **Minor Adverse** upon completion of the Proposed Development.

Night time Lighting Effects

4.4.144 A Lighting Impact Assessment of the Proposed Development has been undertaken and is included at Chapter 11. This Landscape and Visual assessment has been undertaken on the basis of the proposed Lighting Strategy. The Strategy is founded on the key principles of energy efficiency and minimising environmental effects. The proposed Lighting Strategy will seek to:

- Minimise spill light to surrounding areas;
- Minimise upward sky pollution; and
- Ensure appropriate illumination levels on-site.

4.4.145 The Lighting Strategy incorporates the latest energy efficient directional luminaires that prevent sky glow, glare and light spillage. The detailed lighting scheme will be designed to satisfy the Lighting Strategy and to minimise upward light pollution and to comply with the Institute of Lighting Professional (ILP) best practice.

4.4.146 The following factors largely influence the extent of the night time visual effects arising from the lighting proposals:

- the existing extent, sources and levels of lighting in and around the Site;
- the location of receptors and areas of settlement with views towards the proposals;
- the adoption of best lighting design practice.

4.4.147 Overall, the night time visual effects of the Proposed Development will be minimised through the adoption of the Lighting Strategy and further attention at the detailed design stage to the lighting proposals. The presence of existing light sources (e.g. surrounding major roads and nearby employment and settlement areas) in the Site's context will moderate the adverse night time visual effects as detailed in the Lighting Impact Assessment.

4.5 LANDSCAPE STRATEGY, DESIGN AND MITIGATION

Introduction and Objectives

- 4.5.1 The Landscape Strategy for the Proposed Development has been prepared in the context of a thorough and detailed understanding of the Site and its context and within a framework of key policy and design guidance. The proposals are shown on the accompanying drawings; Illustrative Landscape Context Plan, Illustrative Landscape Plan (Main Site) and Illustrative Landscape Plan (Roade Bypass).
- 4.5.2 The existing landscape resource of the Site and its context has been considered by the assessment, masterplanning and design process. This has extended from preliminary landscape and visual appraisals through to the production of the guiding design principles and the Landscape Framework proposals. This iterative process has entailed close collaboration between landscape, architectural, urban design, engineering, ecological and other professionals, including statutory bodies and local planning authorities.

Design: Policy and Guidance

- 4.5.3 The Government now places very great importance on the delivery of sustainable and co-ordinated green infrastructure (GI), as a key component of its sustainable development agenda. “Green Infrastructure Guidance” articulates Natural England’s (NE) position in relation to GI planning and delivery, which is seen as a key part in adapting to and mitigating climate change and to delivering multiple environmental functions. The NE guidance recognises the importance of “Multifunctionality” to GI. Of particular note is the contribution that high quality GI can play to the delivery of a number of NE’s strategic outcomes as listed on page 13 of their document. These include:

“Well planned Green Infrastructure encompassing new and enhanced sites and habitats:

- *contributes to high quality and accessible landscapes benefiting people and wildlife;*
- *plays an essential role in maintaining and enhancing the health of the natural environment and its ability to provide a wealth of ‘ecosystem services’;*
- *increases ecological connectivity to overcome habitat fragmentation and*
- *increase the ability of the natural environment to adapt to climate change”*

The creation and enhancement of green infrastructure helps to:

create attractive and accessible places for people to enjoy direct and regular contact with the natural environment;

strengthen links between urban areas and their surrounding countryside, and bring the natural world into every neighbourhood, with benefits for individual and community health and well-being.”

Landscape Design Issues and Considerations

4.5.4 There are a number of relevant landscape and related GI design issues to be addressed by the proposals. These can be summarised as follows:

- Positively assimilating the Proposed Development within the landscape and landform; including for mitigating and minimising any potential adverse effects with particular attention to the interrelationship of building heights; plot levels; earthworks and mounding proposals and conserved and proposed woodland and planting areas;
- Establishing and strengthening connections and green corridors; particularly around the Site perimeter, between existing woodlands and with the surrounding landscape;
- Accessibility to the green spaces to be conserved or created as part of the proposals; with potential opportunities for informal recreation and physical activity eg walking and cycling, with public health (health promotion) as well as environmental benefits;
- Securing and maximising biodiversity interest, through conservation, enhancement and creation of habitats and green spaces;
- Integrating Sustainable Drainage (SuDS) features and measures to form part of a strong multi-functional Green Infrastructure framework for the Proposed Development Site that will deliver valuable biodiversity and amenity benefits alongside the practical drainage requirements;
- Establishing and managing a significant and robust landscape framework to form an appropriate and cohesive “green structure” to the built development and create a suitable buffer to the neighbouring settlements and uses.

4.5.5 A strong landscape scheme and strategy forms a key part of the overall development approach. The landscape objectives of this include the following:

- Recognise and respect existing landscape character;
- Conserve and enhance landscape areas and features as an integral and structuring part of the landscape framework;
- Create a high quality new landscape framework, including woodland and structure planting, hedgerows, other mixed habitats, open spaces and sustainable drainage features;
- Provide significant new planting as part of a thorough and long term approach to the growth and management of the overall landscape framework;
- Minimise any potential adverse landscape or visual effects through the application of best practice design principles and careful attention to design through all stages of the development process; and
- Adopt specific landscape measures to mitigate any potential adverse landscape, visual or other environmental effects (e.g. screen/ acoustic fencing where necessary to support any mounding proposals).

Landscape Proposals

4.5.6 The Proposed Development will incorporate the conservation of existing woodland and trees, reinforced by significant new woodland, tree and shrub planting; the creation and conservation of landscape corridors through the development; the provision of new mixed habitats (including some wetland areas/ ponds as part of the sustainable drainage strategy) to satisfy biodiversity objectives; the formation of significant earthwork proposals and the establishment of high quality and robust landscapes to the built development plots and surrounds.

- 4.5.7 At a strategic level, these proposals will reflect the broad stated aims and approaches outlined in the Natural England Green Infrastructure (GI) and the Regional and County based landscape character and GI guidance.
- 4.5.8 In devising these proposals, there has been careful analysis of the development proposals and close collaboration with other environmental and technical professionals. This has sought to minimise potential adverse environmental effects and maximise opportunities for GI within the Site. It has also sought to ensure that the landscape strategy proposals are both appropriate in the short and longer terms. Careful attention has also been paid to the emerging earthworks and drainage strategies to ensure that a comprehensive solution emerges that robustly addresses the landscape and visual issues associated with the proposals.
- 4.5.9 A number of plans and cross sections have been prepared to convey the character and detail of the landscape proposals. The Illustrative Landscape Plans (Drawing Nos. 5772/L/29, 5772/L/30 and 5772/L/38 Figures ?? - ??) and Illustrative Landscape Cross Sections (Drawing Nos. 5772/L/32 – 37, 5772/L/39 and 5772/L/40 Figures ?? - ??) are attached to this Chapter. These illustrative plans and cross sections provide an understanding of the landscape and mitigation design proposals and how these relate to the existing Site context and to the relevant landscape and visual receptors.
- 4.5.10 A strong landscape framework will be established as part of the Proposed Development, comprising the conservation of existing woodland and other hedgerows and trees, reinforced by significant new tree, hedgerow and shrub planting and other habitats. The formation of new earthworks and mounding proposals to most of the Main Site’s perimeter will include much of this new native planting and will be important in mitigating and screening views of the Proposed Development from beyond the boundary. The Ecology ES chapter provides further detail on the proposed habitat creation measures.
- 4.5.11 The proposed GI, encompassing the new woodland, trees, hedgerows and other planting, habitats and open space will extend to a significant proportion of the total Site area and in summary will comprise the following. Further details on areas and quantities of the Green Infrastructure Planting and Habitats are included at Appendix 4.6:

Green Infrastructure Landscape Area/ Habitat/ Feature	Area/ Quantity (Approx.)
Existing Conserved Woodland/ Tree Groups	10.70 Ha
Proposed Woodland/ Tree Groups/ Structure Planting (Main Site)	23.35 Ha
Proposed Woodland/ Tree Groups/ Structure Planting (Bypass Corridor)	5.70 Ha
Existing Conserved Hedgerows	3,800 Lin m
Proposed Hedgerows	13,000 Lin m
Existing Conserved Species Rich Grassland/ Meadow/ Non Agricultural Grassland	4.70 Ha
Proposed Conserved Species Rich Grassland/ Meadow/ Non Agricultural Grassland	26.60 Ha
Proposed SuDS features/ Wetlands/ Ponds	3.00 Ha

Table: Summary of Landscape and Green Infrastructure Areas (Main Site and Roade Bypass Corridor)

Landscape Management

- 4.5.12 The successful implementation of the finalised strategy will depend upon many factors, including the effectiveness of the Proposed Development's detailed landscape design and a clear and comprehensive plan for the phased implementation and subsequent ongoing maintenance and management of all areas. All of the landscape areas and features will be managed and maintained in the long term. It is currently anticipated that this will be achieved through the implementation of a comprehensive Landscape and Ecological Management Plan (LEMP) to be determined alongside other relevant site management objectives and requirements.
- 4.5.13 The subsequent detailed design and management works for the landscape and GI areas will be advanced in close collaboration with the relevant authorities and other technical and environmental professionals. Effective management of the landscape will help ensure that the Green Infrastructure and habitats created are maintained and able to establish themselves properly, and will create places which help deliver social as well as environmental benefits, including as part of health promotion for employees and local people through access to walking and cycling routes.

4.6 RESIDUAL EFFECTS

- 4.6.1 The residual effects consider the effects after the incorporation of the mitigation measures. In the context of the landscape and visual assessment, primary mitigation measures and considerations have been incorporated as an integral (or 'embedded') part of the design and layout of the Proposed Development. This has included attention to the siting, layout and heights of the Proposed Development and consideration of the earthworks and ground modelling proposals. All of these aspects and features have been taken into account in the design of the Proposed Development and the development parameters and have therefore been assessed as part of the construction and operational stages.
- 4.6.2 The residual operational effects assessment considers the Proposed Development 15 years after completion and takes into account the growth of the proposed and conserved planting over this time. These effects are detailed in the Effects Tables at Appendices 4.4 and 4.5 and outlined below.

Construction

Landscape

- 4.6.3 Well managed and controlled site activities and the application of good practices throughout the construction process will minimise the potential adverse effects arising from construction. This will include the protection of all trees and vegetation to be conserved in accordance with BS5837:2012 (Trees in Relation to Design, Demolition and Construction- Recommendations).
- 4.6.4 The early implementation of some of the outer and perimeter landscape and associated earthworks proposals will assist in minimising some of the indirect influences over the immediately surrounding landscape. Overall, the residual landscape effects during construction will remain as stated for the construction stage in the earlier Assessment of Likely Significant Effects section.

Visual

- 4.6.5 The phased and early implementation of some of the outer and perimeter landscape and associated earthworks proposals will assist in minimising the resulting visual effects during the construction period, particularly along the western, northern and eastern Main Site perimeters. The additional and selective use of temporary screen fencing may also be considered along Site boundaries at particular periods, although it is unlikely that these will offer any notable additional screening benefits.

- 4.6.6 The use, location, extent and design of any temporary fencing will be determined at the detailed design stage and in consultation with the relevant authorities. Particular attention will be paid to the potential visual effects upon those properties and receptors with the clearest views towards the construction activity, including those on the edge of Roade affected by the Roade Bypass proposals.
- 4.6.7 Well managed and controlled site activities and the application of good practices throughout the construction process will minimise the potential adverse visual effects arising from construction. Overall, the residual visual effects during construction will remain as described for the construction stage in the earlier Assessment of Likely Significant Effects section.

Operational Development

Landscape

- 4.6.8 In general, the landscape effects of the completed and operational Proposed Development will reduce over time following the establishment and subsequent maturing of the proposed planting and habitat creation. The comprehensive management of not only the proposed planting and habitats but also the existing conserved woodland, trees, hedgerows and other habitats will also assist in reducing the initial operational landscape effects.
- 4.6.9 The main residual change and benefits in landscape terms will arise from the maturing and management of the outer and perimeter landscape and planting proposals which will assist in mitigating the influence of the Proposed Development on its immediate context and in assimilating the landform and built development proposals in the Site's landscape context.
- 4.6.10 Alongside the existing conserved woodland, trees, hedgerows and other planting, the extensive new woodland, tree and other planting proposals will grow to form a robust and connected framework of landscape corridors and areas, with notable landscape areas and corridors sited largely around the perimeter of the Main Site. Other notable planting will be sited along the Roade Bypass corridor and over time this will assist in assimilating this road with its immediate landscape context.
- 4.6.11 The new (and diverted) walking routes, as well as the new connections to the site from surrounding areas, will contribute positively towards public health and wellbeing benefits. This includes benefits for employees based on-site who would have access to opportunities for exercise (walking and running), as well as opportunities for travel to work by foot or by cycle.

Visual

- 4.6.12 In general, many of the visual effects of the completed and operational Proposed Development will reduce over time following the establishment and subsequent maturing of the proposed planting and habitat creation. The comprehensive management of not only the proposed planting and habitats but also the existing conserved woodland, trees, hedgerows and other habitats will also assist in reducing the initial operational visual effects.
- 4.6.13 The maturing and management of the existing and new planting will offer the most notable visual improvements to some of the receptors immediately surrounding the Site or with close views encompassing proposed planting and mounding in between the receptor and the proposed buildings or other infrastructure.
- 4.6.14 An assessment of the residual visual effects of the Proposed Development (15 years post completion) on the identified receptors is included in the Visual Effects Table at Appendix 4.5.

4.7 CUMULATIVE EFFECTS

4.7.1 In the context of this assessment of cumulative landscape and visual effects, the focus is on the assessment of the Proposed Development in **combination with** and in **addition to** the following projects:

1. Committed (Allocated) Projects:

- Northampton South Sustainable Urban Extension (SUE) – allocated in the Joint Core Strategy
- South of Brackmills SUE – allocated in the Joint Core Strategy

2. Other Projects:

- Rail Central SRFI – proposed, but not a commitment;

4.7.2 The cumulative landscape and visual effects assessment thus considers;

- the combined and additional effects of the proposed Northampton Gateway development, with the other identified committed (allocated) projects.
- the combined and additional effects of the proposed Northampton Gateway development (plus committed developments) with the Rail Central SRFI were this also to be approved in addition to the Proposed Development.

4.7.3 In terms of timescales and construction the following has been assumed for the purposes of this cumulative assessment:

1. Committed (Allocated) Projects:

- Northampton South Sustainable Urban Extension (SUE) development is assumed to commence in 2018/19 (as indicated by NBC) and is expected to take around 11 years to complete.
- The South of Brackmills SUE is assumed to commence in 2018/19 (as indicated by NBC) and is expected to take around 9 years to complete.

2. Other Projects:

- The proposed Rail Central SRFI development.

4.7.4 Further details on phasing and timescales of the Proposed Development are included within the phasing details (Chapter 2).

1. Committed (Allocated) Projects

Cumulative Landscape Effects – Committed (Allocated) Projects

4.7.5 The committed (allocated) Northampton South SUE lies to the north of the Main Site and on the opposite side of the M1 motorway. In landscape terms there are likely to be limited combined (or additional) effects arising from this scheme.

4.7.6 Topographically, the Northampton South SUE site generally falls away from the Main Site and towards the existing urban edge. There is potentially very limited intervisibility between the respective site areas and in local landscape character terms the respective site areas are different in terms of existing characteristics, features and influences. Any cumulative landscape effects in combination with this project are likely to be limited to the effects upon a small landscape area focussed along a short stretch of the motorway corridor. This landscape is already dominated by the motorway with other nearby urbanising influences. There would be no significant cumulative landscape effect arising from the Proposed Development and the Northampton South SUE.

- 4.7.7 The South of Brackmills SUE is much further away from the Proposed Development, located on the eastern edge of Northampton some distance to the north and east of the site. As a result of this distance and the nature of the intervening landform and urban area, there is no intervisibility and no shared landscape or other receptors. Consequently, there would be no cumulative landscape effects arising from the Proposed Development and the South of Brackmills SUE.

Cumulative Visual Effects – Committed (Allocated) Projects

- 4.7.8 Cumulative visual effects arising from the Northampton South SUE are likely to be very limited. Views towards both the Proposed (Northampton Gateway) Development and the Northampton South SUE are considered to be unlikely from Collingtree. The limited number of properties at Collingtree that have any views towards the Proposed (Northampton Gateway) Development are located on its western side, whereas any views from the settlement towards the Northampton South SUE are likely to be limited to its northern edge. There may be some cumulative visual effects from more elevated properties within Northampton (Ref P14 (Spyglass Hill, Merefield, and Blacky More) yet these would also be limited and not significant.
- 4.7.9 There may also be some very limited and localised cumulative visual effects for users of the M1 motorway and Ash Lane/ Collingtree Road, with restricted or glimpsed views towards both developments close to the motorway overbridge. There would be no significant cumulative visual effect.
- 4.7.10 There would be no cumulative visual effects with the South of Brackmills SUE project.

2. Other Projects – Rail Central SRFI

Cumulative Landscape Effects – Rail Central SRFI

- 4.7.11 The Rail Central proposed development will encompass similar uses, activities and features to that of the Proposed (Northampton Gateway) Development ie large scale employment buildings and rail infrastructure, with large scale landscape areas.
- 4.7.12 In combination the two projects, would occupy a large landscape swathe extending between the M1 motorway in the east and the A43 in the west. Inevitably, the Rail Central proposal will extend the urbanising and large scale development influences across the countryside to the west of the Main Site and will dominate the land extending westwards to the A43. In combined terms, this will have a significant effect upon the character of the landscape. There would be an increased combined landscape effect upon the *Tove Catchment* LCA (6a) and Bugbrooke and Daventry LCA (13b), as defined in the Northamptonshire Current Landscape Character Assessment and most markedly upon the more localised landscape.
- 4.7.13 In combination, the urbanising and large scale development influences is likely to result in a **Major Adverse** landscape effect (during construction and upon completion) at a localised and combined site wide scale. Despite the close positioning of the two respective sites, they do differ in landscape terms and are separated at a localised scale. The Proposed (Northampton Gateway) Development Main Site has a gentle fall eastwards towards the M1 motorway corridor and the edge of Northampton and away from the Rail Central site. The Proposed (Northampton Gateway) Development Main Site is well contained in visual terms, whereas the Rail Central site occupies a more open and rural landscape to the west.

- 4.7.14 Consequently, despite both sites lying effectively adjacent to each other, the significant new mounding and planting and the conserved woodlands to the western side and perimeter of the Proposed (Northampton Gateway) Development(- Main Site)- will create a strong degree of localised separation from the Rail Central site and the landscape to the west. This would not necessarily lessen the combined landscape effects of the respective developments but would create a clearer distinction between their respective effects over the landscapes to the east and west of the Northampton Loop Line. The Rail Central proposal is likely to dominate and significantly increase the cumulative landscape effects over the more open and rural landscape to the west, whereas the Northampton Gateway proposal will dominate a more enclosed, active and urban influenced context.
- 4.7.15 After 15 years and the management and growth of the respective GI areas and associated planting, both schemes would be set within maturing and visually stronger landscape settings. Notwithstanding this the combined cumulative landscape effects of the two rail schemes is likely to remain significant. At this time, the maturing planting to the mounding on the western side of the Main Site would further reinforce the separation to the Rail Central site to the west.
- 4.7.16 In combination, the two rail schemes would inevitably result in significant effects upon the character and features of the landscape between the M1 motorway and the A43. There is however, likely to be a difference between the effect of the Proposed (Northampton Gateway) Development over a more contained landscape with more existing active and urbanising influences and that of the Rail Central proposal over a broader and more open and rural landscape to the west.
- 4.7.17 In this context it is likely that the Rail Central proposed development would have a relatively greater adverse landscape effect and contribute a greater proportion of the combined adverse effect upon the landscape.

Cumulative Visual Effects – Rail Central SRFI

- 4.7.18 The most notable effects will arise from the Proposed Development on the Main Site in combination with the Rail Central proposal. Subject to the construction periods of the respective development projects this could include some cumulative visual effects during construction.
- 4.7.19 The visual receptors likely to be most affected in cumulative terms will be those with views towards the Proposed Development and the Rail Central proposal from west, north west and south west of the Main Site. These will include properties on the edge of Milton Malsor and Blisworth and a number of Public Rights of Way (PROW) west of the Main Site and south of the West Coast Main Line (WCML). There would be no cumulative visual effects with the Roade Bypass proposals.

Settlement and Properties

- 4.7.20 There will be views southwards towards the Rail Central proposal for properties and locations on the southern side of Milton Malsor (Receptor P1). From these locations and properties the cumulative combined visual effects will be dominated by the Rail Central proposal with any views towards the Proposed (Northampton Gateway) Development more limited and restricted principally to the perimeter mounding and planting along the north west edge of the Main Site.
- 4.7.21 The resultant cumulative visual effect is likely to vary up to Major Adverse for those settlement edge properties with views to the south, south east and south west. For those properties with the clearest views in these directions, the Rail Central proposal would be closer and more prominent.
- 4.7.22 There is unlikely to be any cumulative visual effects arising upon any properties at Collingtree (Ref P4). There would however be some cumulative visual effects upon residents of Courteenhall West Lodge/ Farm (Ref P6) to the south of the Main Site. Views northwards and north westwards from this property would include both development projects and is likely to result in a Major Adverse and significant effect (during construction and upon completion).

- 4.7.23 From the limited number of properties on the edge of Blisworth (Refs P9 & P10) with views towards the Proposed (Northampton Gateway) Development Main Site, the Rail Central proposal would be visible as a dominant feature in the landscape. This scheme would obscure elevated north easterly views towards the Proposed (Northampton Gateway) Development. The resultant cumulative effect upon these properties is likely to be Major Adverse (during construction and upon completion) and significant and these visual effects would arise as a result of views towards the Rail Central scheme only.
- 4.7.24 Similar cumulative visual effects are likely to arise for some properties on Northampton Rd (P11) and Gayton Rd (P12). From both of these locations the Rail Central proposal would be visible as a dominant feature in the landscape and would obscure any easterly views towards the Proposed (Northampton Gateway) Development. The resultant cumulative effect upon these properties is likely to be Major Adverse (during construction and upon completion) and significant and these visual effects would also arise as a result of views towards the Rail Central scheme only.
- 4.7.25 Elevated and expansive views potentially encompassing both schemes are likely to be possible from some parts of the urban area (at Wootton Spyglass Hill, Merefield and Blacky More (Refs P14 & P15)). Receptors at these locations are unlikely to experience any significant cumulative visual effects.

Public Rights of Way (PROW) and Other Footpaths etc

- 4.7.26 Some significant cumulative visual effects upon users of PROW will arise from the Rail Central proposal in combination with the Proposed (Northampton Gateway) Development. The most notable cumulative effects will arise for users of the PROW to the west of the Main Site (Refs F3 – F8). These PROW extend across the site of the Rail Central proposal and across the rising land to the south and west of this site. This includes PROW around and to the east of Blisworth.
- 4.7.27 The combined visual effects upon users of these PROW are likely to arise almost entirely from the Rail Central proposal, given its position and likely prominence within this landscape. The Proposed (Northampton Gateway) Development will potentially also be visible to a more limited degree from elevated positions on the PROW to the south west. However, any views of the Proposed (Northampton Gateway) Development from these positions will be more limited and where visible it is only likely to be seen in small part beyond the visually dominant Rail Central proposal. The cumulative visual effects upon users of these PROW (Refs F3 – F8) is likely to be Major Adverse (during construction and upon completion) and significant and these visual effects would arise either as a result of the Rail Central scheme only, or predominantly as a result of the Rail Central scheme.
- 4.7.28 There will also be some likely significant visual effects arising from the Rail Central proposal on PROW to the north of Blisworth, including from the Great Union Canal Walk (Refs F9 & F10). From these routes, any views will only be towards the Rail Central proposal as this would obscure any more limited and distant views towards the Proposed (Northampton Gateway) Development.

Roads

- 4.7.29 Cumulative visual effects will be experienced by users of Courteenhall Road (Ref R6), linking Blisworth with the A508. For users of this road, there would be views from stretches of it towards both the Rail Central proposal and the Proposed (Northampton Gateway) Development. In these views, the Rail Central proposal would be the more visually prominent of the two schemes and the resultant cumulative visual effect is likely to be up to Major Adverse (during construction and upon completion) and significant where visible along the road.

4.7.30 Cumulative visual effects upon users of the A43, Northampton Road (Ref R8) and Gayton Road (Blisworth) (Ref R7) will also be dominated by the Rail Central proposal with any potential views towards the Proposed (Northampton Gateway) Development obscured by the intervening Rail Central proposals. The cumulative visual effects upon these road users are likely to be Moderate/ Major or Moderate Adverse (during construction and upon completion) and these visual effects would arise as a result of views towards the Rail Central scheme only.

Other Receptors

4.7.31 Cumulative visual effects will be experienced by users of the rail lines (NLRL (Ref O1) and WCML (Ref O2)). For users of the NLRL, the Proposed (Northampton Gateway) Development will be sited to the east and the Rail Central proposal to the west of this line. Close views towards both proposals will arise for the relatively short stretch of the line immediately adjoining the respective site areas. The more open existing views from this stretch of the NLRL are generally across the landscape and Rail Central site to the west. Views towards the Proposed (Northampton Gateway) Development Main Site are more restricted by the rising ground.

4.7.32 The Proposed (Northampton Gateway) Development will include substantial mounding and planting alongside the NLRL and a tunnel access to the northern part of the site. Both the proposed built and rail related development would be effectively screened by these perimeter earthworks and landscape proposals. The Rail Central proposal is also likely to be screened yet to a lesser degree by mounding and planting proposals and would result in a relatively greater degree of visual change and effect. The cumulative visual effect for users of the NLRL over this short stretch of the line is likely to be Moderate/ Major Adverse (during construction and upon completion) and significant.

4.7.33 For users of the WCML, close and clear views of the Rail Central proposal will be possible for the stretch of line adjoining this site. It is unlikely that there will be any views beyond this proposal to any part of the Proposed (Northampton Gateway) Development. The cumulative visual effect for users of the WCML over this short stretch of the line is likely to be significant, yet this will arise only from the Rail Central proposal.

Cumulative Effects – Rail Central and the Bypass Corridor / Highway Mitigation Measures

4.7.34 There would be no cumulative landscape or visual effects with Rail Central arising from the Bypass Corridor proposals and no significant cumulative visual effects with Rail Central arising from the Highway Mitigation Measures. There would be some potential cumulative effects arising from works at Junction 15A, yet these are not likely to result in any significant cumulative effects.

4.7.35 However, it is important to note that it is not clear what highway works might be necessary to accommodate both schemes, if both were approved. Although some consideration has been given to the likely cumulative transport effects based on both SRFIs as proposed, if more highways mitigation interventions were required the cumulative effects could increase.

Cumulative Landscape and Visual Effects – Summary

- 4.7.36 The cumulative landscape and visual effects of the proposed development have been assessed in addition to, and in combination with the two committed (allocated) SUEs (Northampton South SUE and South of Brackmills). In addition, consideration has been given to the proposed Rail Central SRFI on an adjacent, alternative site.
- 4.7.37 The cumulative effects alongside the committed (allocated) SUEs are largely limited or negligible, and would not be significant. However, there are likely to be some significant cumulative landscape and visual effects arising from the Rail Central SRFI project in combination with the Proposed Development.
- 4.7.38 A significant cumulative effect upon the character and features of the landscape stretching between the M1 motorway in the east and the A43 in the west is likely to arise from the combined effects of the Rail Central proposal, if approved, alongside the Proposed (Northampton Gateway) Development.
- 4.7.39 In this context however, there is likely to be a difference between the effect of the Proposed (Northampton Gateway) Development over a more contained landscape with existing active and urbanising influences and that of the Rail Central proposal over a broader and more open and rural landscape. Consequently, the Rail Central proposal would have a relatively greater adverse landscape effect and contribute a greater proportion of the combined cumulative effect upon this landscape.
- 4.7.40 In visual terms, the most notable cumulative effects will arise for receptors to the west, north west and south west of the Main Site. Some properties at Milton Malsor, Blisworth and in the general vicinity of these settlements will experience significant cumulative visual effects from the Rail Central proposal in combination with the Proposed (Northampton Gateway) Development. Similarly, users of a series of PROW will also experience significant cumulative visual effects arising from the combined proposals.
- 4.7.41 The Rail Central proposal would contribute a significantly greater proportion of any combined visual effects upon these receptors and from a number of receptors and locations the Rail Central proposal would screen any views towards the Proposed (Northampton Gateway) Development. From west and south west of the Main Site boundary, the Proposed (Northampton Gateway) Development would generally constitute a more limited and distant part of any views towards the combined proposals. In the medium and longer term, the perimeter mounding and planting to the western side of the Main Site would be increasingly effective in visually separating the Proposed (Northampton Gateway) Development from the Rail Central site and landscape to the west.