

Scheme Name:

**North Hykeham Relief Road**

Promoting Authority:

**Lincolnshire County Council**

Orders:

**The Lincolnshire County Council (A1461 North Hykeham Relief Road) Compulsory Purchase Order 2024; and The Lincolnshire County Council (A1461 North Hykeham Relief Road) (Classified Road) (Side Roads) Order 2024.**

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Subject:

**Landscape**

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Date:

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# **NORTH HYKEHAM RELIEF ROAD**

## **LANDSCAPE - PROOF OF EVIDENCE**

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## 1. INTRODUCTION

### 1.1 Qualifications and Experience

- 1.1.1 My name is Louise Fitzgerald and I am appointed by Lincolnshire County Council Highways to give evidence to the public inquiry into the Compulsory Purchase Order (CPO) **[CD1.1]** and Side Roads Order (SRO) **[CD1.2]** in relation to landscape and views.
- 1.1.2 I am a Chartered Member of the Landscape Institute and Associate at The Environment Partnership (TEP) Ltd. I have a Postgraduate Diploma in Professional Landscape Architecture from the University of East London and an integrated master's degree in Environmental Geography and Climate Change from the University of East Anglia.
- 1.1.3 I have prepared Landscape and Visual Impact Assessments (LVIA) and Appraisals (LVA) to accompany planning applications for a range of projects including road schemes, renewable energy schemes, residential development and commercial development schemes, both as standalone documents and as part of Environmental Impact Assessments. I have produced Landscape Character Assessments and Landscape Sensitivity Assessments on behalf of local planning authorities and government agencies and have reviewed LVAs and LVIAs prepared by others on behalf of local planning authorities.
- 1.1.4 I commenced work on the NHRR in May 2022 and provided landscape advice through the Schemes' design progression. I attended public consultation events and wrote the Landscape and Visual Impact Assessment (LVIA) that formed Chapter 8 of Volume 2 of the Environmental Statement (ES) **[CD7.1]**.

## **1.2 Scope of Evidence**

- 1.2.1 My evidence is focussed on the need to acquire land for the purposes of providing landscape and visual mitigation of the permanent significant effects arising from the NHRR.
- 1.2.2 My evidence:
- Summarises the landscape and visual baseline and the likely landscape and visual effects of the NHRR with reference to the LVIA;
  - Sets out how the findings of the LVIA have informed the landscape design of the NHRR; and
  - Sets out why the landscape mitigation is appropriate and why land is required.
- 1.2.3 I refer in my evidence to the Core Documents compiled by LCC Highways identified by the reference in brackets in each case.
- 1.2.4 The evidence which I have prepared and provide for this CPO **[CD1.1]** and SRO **[CD1.2]** in this proof of evidence is true and has been prepared and is given in accordance with guidance of my professional institution the Landscape Institute and I confirm the opinions expressed are my true and professional opinions.

## 2. INVOLVEMENT WITH THE SCHEME

### 2.1 Overview

- 2.1.1 I have been involved with the NHRR project since May 2022, when I first visited the site to inform my contributions to the ES Scoping Report. The Scoping Report set out the methodology and guidance to be adopted for the LVIA chapter of the Environmental Statement (ES) **[CD7.1]**.
- 2.1.2 I subsequently provided advice in relation to landscape and views, including the landscape mitigation proposals. I wrote the content of the Landscape and Views chapter of the ES, which was carried out in accordance with the 'Guidelines for Landscape and Visual Impact Assessment' (3rd Edition) **[CD6.45]**, Design Manual for Roads and Bridges (DMRB) LA 107 'Landscape and Visual Effects' **[CD6.1]** and DMRB LA 104 'Environmental Assessment and Monitoring' **[CD6.1]**, worked closely with colleagues who produced the Landscape Masterplan and Landscape and Ecological Management Plan (LEMP) **[CD8.83]** and reviewed these outputs.
- 2.1.3 In June 2023 I attended public consultation events in relation to the NHRR to address any queries in relation to landscape.
- 2.1.4 Since the submission of the planning application, I have responded to queries relating to the Scheme's landscape and visual impact, including Regulation 25 Responses **[CD7.1]**.
- 2.1.5 The evidence I present relates to the landscape design and landscape and visual impact assessment (LVIA) of the NHRR and the need for essential mitigation to take place on land required for that purpose.

## **2.2 Route Selection and Optioneering**

- 2.2.1 The alignment corridor for NHRR was largely determined by previous stages of the project, which considered possible alternative routeings. The preferred indicative route was originally identified in April 2006 with updates incorporated in 2018 following the development of an Option Assessment Report (OAR) **[CD8.2]** and Outline Business Case (OBC) **[CD8.37]**. The preferred indicative route is allocated in the Local Plan **[CD4.1]** and has therefore been consulted upon and benefits from planning policy status.
- 2.2.2 TEP were appointed to assess the chosen NHRR option, following the high level optioneering and route selection stage undertaken by other consultants. I was not, therefore, involved in early stage route wide optioneering or selection, but given the terminal points for the Scheme the options were limited to an area south of Lincoln crossing between the A46 and the A15 and climbing the Lincoln Cliff escarpment.

### 3. DEVELOPMENT OF THE SCHEME

#### 3.1 Scheme Description

- 3.1.1 A full description of the Scheme is set out in Chapter 4 of the ES **[CD7.1]**. In summary, the Scheme comprises the demolition of the six existing residential buildings on site, site clearance and the construction of approximately 8km of 70mph (120kph design speed) dual all-purpose two lane carriageway running to the south of the existing settlements of North and South Hykeham in an east/west direction between the A46 Hykeham Roundabout and the A15 Sleaford Road Roundabout at the west end of the Lincoln Eastern Bypass.
- 3.1.2 The Scheme passes mainly through flat mixed farmland. The area to the west of the River Witham will be crossed generally at grade or on low embankment rising to cross the River on a combination of an embankment and a bridge. Between Brant Road and Station Road, the Scheme will be constructed on an embankment. Station Road will be realigned and cross the Scheme on a new bridge to ensure that connectivity is maintained, whilst allowing the Scheme to pass under Station Road in a cutting. Beyond Station Road, the Scheme transitions into a major cutting to reach the top of the escarpment known locally as both the Lincoln Cliff and Lincoln Edge. Once the top of the escarpment is attained, the remainder of the Scheme crosses the landscape generally at grade or on low embankments to tie in with the A15 Sleaford Road and the Lincoln Eastern Bypass.

- 3.1.3 Land use along the route of the Scheme is dominated by large expanses of arable land, bounded by ditches and hedgerows, with only small, localised areas of improved grassland to the south of South Hykeham which appear to be predominantly used for grazing horses. Areas of poor semi-improved grassland and woodland exist mainly where the topography of the ground makes arable farming impractical or where small remnants of land occur between large expanses of arable fields. Near the eastern end of the Scheme there is a large airfield which is part of RAF Waddington.
- 3.1.4 An overhead powerline runs broadly parallel to the Scheme between Wath Lane (to the south of South Hykeham) and the A46 North Hykeham Road Roundabout.
- 3.1.5 Settlement within the context of the Scheme includes North Hykeham, South Hykeham, and Bracebridge Heath to the north; and Waddington, Harmston and Aubourn to the south, all within the 2km LVIA study area.
- 3.1.6 Between the A46 North Hykeham Road Roundabout and across the Witham valley the Scheme occupies flat land at approximately 10m AOD. The land rises towards the east of the Scheme into the Lincoln Cliff/Lincoln Edge, at approximately 40m AOD at the toe of the scarp and approximately 60m AOD at edge of the cliff. Beyond this, the landform continues to rise gently with the Scheme at approximately 60m to 70m AOD.
- 3.1.7 There are a number of watercourses across the study area including the River Witham. Unnamed drainage channels and the River Beck also dissect the centre of the study area draining into the River Witham.
- 3.1.8 The Scheme includes the following key features from west to east:
- A46 Hykeham Roundabout – an increase in size and number of circulatory lanes, additional arm required for the Scheme and signalisation of the



roundabout, together with associated NMU facilities (i.e. a combined footway/cycleway);

- South Hykeham Road Roundabout and associated crossing facility to the north of the roundabout;
- South Hykeham Road to Wath Lane NMU facility to the south of the Scheme;
- South Hykeham Bat Bridge;
- Wath Lane NMU crossing and accommodation bridge;
- River Witham Bridge;
- Brant Road Roundabout, associated crossing facility to the north of the roundabout and realignment of Somerton Gate Lane;
- Somerton Gate Lane Bat Culvert;
- Station Road Bridge;
- Realigned Viking Way Public Right of Way (PRoW);
- Grantham Road Roundabout and associated crossing facility to the north of the roundabout;
- Modification of the existing signalised junction at A607 Grantham Road and High Dyke to incorporate a pedestrian crossing facility;
- A15 Sleaford Roundabout, associated crossing facility to the north of the roundabout and additional arm;
- Dualling of a 190m section of the Lincoln Eastern Bypass;
- Lighting of junction areas;
- Drainage attenuation ponds;
- Wildlife ponds, mitigation and enhancement features;
- Noise bunds and barriers and low noise surfacing on high speed sections of the Scheme; and

- Landscape planting.

3.1.9 Temporary site compounds are proposed to the west of North Hykeham Road Roundabout, to the south of Station Road, to the west of the River Witham (Witham Compound) and to the north of RAF Waddington. These will be temporary and reinstated on completion of the works. A temporary materials processing area will be located to the west of Grantham Road.

### **3.2 Regulation 25 Requests**

3.2.1 Minor updates to the highway elements as part of the Regulation 25 Request resulted in some minor changes to the landscape design, as summarised in Appendix 1.1 of The Regulation 25 Response Report Part A – Further Information **[CD7.1]**. None of these changes have compromised the principles of the landscape mitigation.

3.2.2 The s73 application did not result in any changes to landscape design or reported landscape and visual effects.

### **3.3 New Traffic Data**

3.3.1 The new traffic data exists but makes no material difference to the assessment of landscape and visual effects as reported in the ES **[CD7.1]**.

## 4. LANDSCAPE AND VISUAL IMPACTS

### 4.1 Landscape and Visual Impact Assessment

4.1.1 The Landscape and Visual ES chapter (the 'LVIA') was produced in line with the Design Manual for Roads and Bridges (DMRB) LA 107 'Landscape and Visual Effects' **[CD6.1]** and DMRB LA 104 'Environmental Assessment and Monitoring' **[CD6.1]**. General guidance was also taken from:

- '*Guidelines for Landscape and Visual Assessment, Third Edition*' (GLVIA3), published by the Landscape Institute and Institute of Environmental Management and Assessment **[CD6.45]**;
- Technical Guidance Note 06/19 'Visual Representation of Development Proposals' published by the Landscape Institute **[CD6.46]**;
- Technical Guidance Note 02/21 'Assessing landscape value outside national designations' published by the Landscape Institute **[CD6.47]**; and
- Technical Guidance Note 1/20 'Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs)', also published by the Landscape Institute **[CD6.49]**.

4.1.2 The LVIA **[CD6.1]** identifies potentially significant landscape and visual effects that are predicted to arise from the construction and operation of the Scheme. The Scheme has the potential to give rise to effects on landscape character and visual amenity. Landscape effects derive from changes in the physical landscape which may give rise to changes in its important characteristics and thus its character, and how this is experienced. Visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity.

4.1.3 With regard to the effects, and with consideration to paragraph 3.42 of LA 107 **[CD6.1]** duration is considered on a scale of:

- Short-term: up to 1 year or during construction if the construction period exceeds 1 year;
- Short-medium term: 1 to 5 years, during which time new planting will have little significant effect in most cases;
- Medium-long term: 5 to 15 years, when mitigation planting will begin to take increasing effect; or
- Long-term: lasting beyond 15 years.

4.1.4 The LVIA **[CD7.1]** assumes that at year one of operation mitigation planting would be between 0.4m and 0.8m in height for whips, transplants and hedgerow planting and between 1m and 1.8m in height for trees. It is assumed that at year 15 of operation mitigation planting would have reached a height of at least 6m based on a planting size of 1m and conservative average growth rates of approximately 1m per 3 years.

4.1.5 Intermediate mitigation has not been assessed but there would be a degree of mitigation as the planting matures between year 1 and year 15.

## 4.2 Landscape Baseline

4.2.1 The LVIA **[CD7.1]** identifies four Local Landscape Character Areas (LLCAs) in the 2km study area. The LLCAs follow the boundaries and share many of the characteristics of the Landscape Character Areas (LCAs) identified in the North Kesteven Landscape Character Assessment, which are described in paragraphs 8.4.21 to 8.4.39 of the LVIA **[CD7.1]** and shown on Figure 8.2 **[CD7.1]**.

4.2.2 The LLCAs comprise:

- LLCA 1: Terrace Sandlands;
- LLCA 2: Witham and Brant Vales;
- LLCA 3: Lincoln Cliff; and
- LLCA 4: Bracebridge Limestone Heath.

### **LLCA 1: Terrace Sandlands**

4.2.3 LLCA 1 is characterised by gently undulating topography, areas of woodland and a scattered settlement pattern. Around the Scheme this area is dominated by arable farmland, rather than grassland as indicated in the North Kesteven Landscape Character Assessment. There are frequent areas of woodland to the north of the Scheme area, including woodland around existing industrial complexes off Newark Road and Boundary Lane. The A46 is a detractor in the landscape and is visible from parts of the LLCA.

### **LLCA 2: Witham and Brant Vales**

4.2.4 The Scheme runs across this predominantly flat landscape, characterised by intensively farmed arable land. The road network reflects the rectilinear field pattern and pylons are a prominent visual element. Tree cover is limited within this LLCA, but has a high influence on the landscape with hedgerows and trees foreshortening views across the vale landscape where present. The impact of roads on the landscape is generally low, and this landscape exhibits some sense of tranquillity.

### **LLCA 3: Lincoln Cliff**

- 4.2.5 This LLCA follows the ridge and foot of the scarp slope, which is a notable landscape feature when compared to the low lying vale landscape to the west. The road pattern prevents any significant vehicular travel across the scarp itself, with the roads running parallel to it at, or close to, its foot and across the crest, linking its settlements. The Scheme runs across the scarp. This LLCA is characterised by prominent landform, villages along the scarp, and panoramic views. The landscape exhibits a sense of tranquillity away from existing residential areas.

### **LLCA 4: Bracebridge Limestone Heath**

- 4.2.6 This LLCA encompasses the very eastern extent to the Scheme, between Lincoln Road and Sleaford Road. This LLCA is characterised by its openness and large, intensively farmed arable fields. Its location on the upper reaches of the Lincoln Cliff/Lincoln Edge creates a sense of relative elevation and exposure. Scattered woodland and trees provide some visual interest. Bracebridge Heath RAF base is visually prominent. The eastern part of this LLCA is not tranquil, due to the developed nature of the settlement edge, noise from traffic on the A15 and the operation of the Bracebridge Heath RAF base.

## **Lincoln Cliff Area of Great Landscape Value**

4.2.7 Part of the Scheme is in the Lincoln Cliff Area of Great Landscape Value (AGLV). AGLV are locally designated landscape areas recognised for their intrinsic character and beauty and their natural, historic and cultural importance. The Central Lincolnshire Local Plan **[CD4.1]** sets out that a high level of protection will be afforded to AGLV reflecting their locally important high scenic quality, special landscape features and sensitivity.

4.2.8 Policy S62: Area of Outstanding Natural Beauty and Areas of Great Landscape Value of the Central Lincolnshire Local Plan **[CD4.1]** highlights that development proposals within, or within the setting of, AGLV shall:

- 'conserve and enhance the qualities, character and distinctiveness of locally important landscapes; and
- protect, and where possible enhance, specific landscape, wildlife and historic features which contribute to local character and landscape quality; and
- maintain landscape quality and minimise adverse visual impacts through high quality building and landscape design; and
- demonstrate how proposals have responded positively to the landscape character in relation to siting, design, scale and massing and where appropriate have retained or enhanced important views, and natural, historic and cultural features of the landscape; and
- where appropriate, restore positive landscape character and quality.'

## **4.3 Visual Baseline**

4.3.1 The assessment of visual effects was informed by 14 representative viewpoints. These viewpoints were identified with reference to Zone of Theoretical Visibility (ZTV) modelling (see Figures 8-6 **[CD8.94]**, 8-7 **[CD8.95]** and 8-8 **[CD8.96]**).

- 4.3.2 The ZTV and representative viewpoints were used to identify visual receptor groups, which are the people who will be affected by changes in views or visual amenity at different places. Fieldwork was carried to determine the extent and nature of existing views.

#### **4.4 Summary of Landscape Effects**

- 4.4.1 The predominant landscape character along the Scheme is generally one of fairly open arable farmland with urban fringe influences such as housing development, RAF Waddington and business parks. However, a higher quality area is centred around the Lincoln Cliff/Lincoln Edge AGLV.
- 4.4.2 The overall sensitivity of the landscape potentially affected by the Scheme is moderate.
- 4.4.3 During construction, the significance of effect on landscape character within LLCA 1 to LLCA 4 will range between slight and large adverse with the greatest level of effect to LLCA 3 where cutting works along the Lincoln Cliff/Lincoln Edge will be clearly visible.
- 4.4.4 Existing vegetation is to be retained where possible and protected during construction.
- 4.4.5 Overall, proposed construction works will be incongruous with the character of the landscape, and will have an adverse impact on characteristic features, including open arable farmland, roadside trees and hedgerows. These effects will be temporary.
- 4.4.6 During operation, (winter year 1), the significance of effect on landscape character will range between slight adverse (within LLCA 1 and LLCA 4), moderate adverse (within LLCA 2) and large adverse (within LLCA 4).



- 4.4.7 Extensive mitigation planting in the form of woodland, tree and hedgerow planting (embedded mitigation) is proposed which will help to integrate the Scheme into the wider landscape. Key areas identified for mitigation are south of South Hykeham Community Primary School, west of Wath Lane, the bridge crossing at the River Witham, within the proposed cutting to the north-east of Station Road, and west of Sleaford Road.
- 4.4.8 After 15 years, it is anticipated that the landscape structure proposed as part of the embedded mitigation, (illustrated on the Landscape Masterplan, drawings NHRR-TEP-ELS-HYKE-DR-LS-30001 to 30008 **[CD7.1]**) will be establishing to provide a 'green' edge to the Scheme integrating it into its surroundings. In addition, the Scheme will have become an established feature in the landscape.
- 4.4.9 The significance of effect on landscape will reduce after 15 years within LLCA 2 and 3 and will remain the same within LLCAs 1 and 4.
- 4.4.10 The residual significance of effect on landscape will be slight adverse within LLCAs 1, 2 and 3 and moderate adverse within LLCA 3 (Lincoln Cliff/Lincoln Edge).
- 4.4.11 A summary of landscape effects is provided in Table 4.1 below.

**Table 4.1: Summary of Landscape Effects**

| Local Landscape Character Area (LLCA)  | Landscape Sensitivity | Magnitude of Impact (Construction) | Significance of Effect (Construction) | Magnitude of Impact (Year 1) | Significance of Effect (Year 1) | Magnitude of Impact (Year 15) | Significance of Effect (Year 15) |
|----------------------------------------|-----------------------|------------------------------------|---------------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| LLCA 1:<br>Terrace Sandlands           | Low                   | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| LLCA 2:<br>Witham and Brent Vales      | Moderate              | Temporary moderate adverse         | Temporary moderate adverse            | Moderate adverse             | Moderate adverse                | Permanent minor adverse       | Permanent slight adverse         |
| LLCA 3:<br>Lincoln Cliff               | High                  | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent moderate adverse    | Permanent moderate adverse       |
| LLCA 4:<br>Bracebridge Limestone Heath | Low                   | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |

## 4.5 Summary of Visual Effects

4.5.1 Visual receptors comprise all those within the 2km study area that will experience views towards the Scheme. This includes PRow, roads, residential properties, and a number of businesses. 14 RVs have also been identified within the 2km study area (see Figure 8.9 **[CD8.97]**). Receptors were identified with reference to Zones of Theoretical Visibility Mapping (see Figures 8-6 **[CD8.94]**, 8-7 **[CD8.95]** and 8-8 **[CD8.96]**).

4.5.2 During construction, visual effects range from slight to large adverse for public and private receptors. These effects are temporary.

- 4.5.3 The visual mitigation is primarily in the form of woodland or tree planting along the highway corridor.
- 4.5.4 The greatest level of visual effects will be experienced by the closest receptors: primarily users of PRow within and surrounding the Scheme and residential properties adjoining the Site along Station Road.
- 4.5.5 Visual effects for public receptors on completion of the Scheme (during operation at Year 1) range between large adverse (F3, F4, F5, F7, F8, BR1, BR2, BR3) where there will be near open views of the Scheme, moderate adverse (some local roads and other PRowS) and slight adverse for public receptors (other local roads).
- 4.5.6 Visual effect for private visual receptors on completion of the Scheme (during operation at Year 1) ranges from slight adverse and large adverse (H3). The greatest effects are experienced by residents in properties that immediately border the Scheme.
- 4.5.7 After 15 years residual visual effects for public receptors ranges from neutral to large adverse (F4, F7, F8, BR3). In most instances tree planting will have become established to provide a greater degree of filtering and screening to the Scheme.
- 4.5.8 Visual effects for private visual receptors at year 15 will range from neutral to large adverse with the greatest effects to residents of properties along Station Road (H3), immediately adjacent to the Scheme.
- 4.5.9 The visual assessment has considered and presented effects on views from private properties, consistent with DMRB advice.
- 4.5.10 A summary of visual effects is provided in Table 4-2 below.

Table 4.2: Summary of Visual Effects

| Visual Receptor                   | Sensitivity | Magnitude of Impact (Construction) | Significance of Effect (Construction) | Magnitude of Impact (Year 1) | Significance of Effect (Year 1) | Magnitude of Impact (Year 15) | Significance of Effect (Year 15) |
|-----------------------------------|-------------|------------------------------------|---------------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| <b>Persons on PRoW</b>            |             |                                    |                                       |                              |                                 |                               |                                  |
| F1 – TOTH/17/1                    | Medium      | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent negligible          | Permanent slight adverse         |
| F2 – TOTH/17/2                    | Medium      | Temporary moderate adverse         | Temporary moderate adverse            | Moderate adverse             | Moderate adverse                | Permanent minor adverse       | Permanent slight adverse         |
| F3 – Shyk/9/2                     | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent moderate adverse    | Permanent moderate adverse       |
| F4 – Shyk/20/1                    | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent major adverse       | Permanent large adverse          |
| F5 – Shyk/1/1                     | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent moderate adverse    | Permanent moderate adverse       |
| F6 – Shyk/6/1                     | Medium      | Temporary negligible               | Temporary slight adverse              | Negligible                   | Slight adverse                  | Permanent negligible          | Permanent slight adverse         |
| F7 – Wdgn/9/1                     | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent major adverse       | Permanent large adverse          |
| F8 – Wdgn/3/2 and Wdgn/3/3 (RV10) | High        | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent major adverse       | Permanent large adverse          |
| F9 – Harm/4/1 (RV14)              | High        | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |

| Visual Receptor                                        | Sensitivity | Magnitude of Impact (Construction) | Significance of Effect (Construction) | Magnitude of Impact (Year 1) | Significance of Effect (Year 1) | Magnitude of Impact (Year 15) | Significance of Effect (Year 15) |
|--------------------------------------------------------|-------------|------------------------------------|---------------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| BR1 – Shyk/2/2                                         | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent moderate adverse    | Permanent moderate adverse       |
| BR2 – Shyk/906/1 (RV3)                                 | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent moderate adverse    | Permanent moderate adverse       |
| BR3 – Wdgn/1122/1, Wdgn/1122/2, and Wdgn/1122/3 (RV12) | High        | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent moderate adverse    | Permanent large adverse          |
| BR4 – Brac/1200/1 (RV13)                               | Medium      | Temporary moderate adverse         | Temporary moderate adverse            | Moderate adverse             | Moderate adverse                | Permanent moderate adverse    | Permanent moderate adverse       |
| <b>Road Users</b>                                      |             |                                    |                                       |                              |                                 |                               |                                  |
| R1 – Middle Lane                                       | Low         | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent negligible          | Permanent neutral                |
| R2 – Newark Road                                       | Low         | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent negligible          | Permanent neutral                |
| R3 – A46 (RV1)                                         | Low         | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent negligible          | Permanent neutral                |
| R4 – South Hykeham Road (RV2)                          | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent moderate adverse    | Permanent slight adverse         |
| R5 – Long Lane                                         | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent moderate adverse    | Permanent slight adverse         |
| R6 – Meadow Lane                                       | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |

| Visual Receptor                      | Sensitivity | Magnitude of Impact (Construction) | Significance of Effect (Construction) | Magnitude of Impact (Year 1) | Significance of Effect (Year 1) | Magnitude of Impact (Year 15) | Significance of Effect (Year 15) |
|--------------------------------------|-------------|------------------------------------|---------------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| R7 – Brant Road (RV5 and RV6)        | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| R8 – Blackmoor Road (RV4)            | Low         | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| R9 – Somerton Gate Lane (RV7)        | Low         | Temporary major adverse            | Temporary moderate adverse            | Major adverse                | Moderate adverse                | Permanent moderate adverse    | Permanent moderate adverse       |
| R10 – Hill Top (RV9)                 | Low         | Temporary major adverse            | Temporary moderate adverse            | Major adverse                | Moderate adverse                | Permanent moderate adverse    | Permanent moderate adverse       |
| R11 – Station Road (RV8)             | Low         | Temporary major adverse            | Temporary moderate adverse            | Major adverse                | Moderate adverse                | Permanent major adverse       | Permanent moderate adverse       |
| R12 – Grantham Road (RV11)           | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| R13 – Lincoln Road                   | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| R14 – Sleaford Road (A15)            | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| <b>Residents</b>                     |             |                                    |                                       |                              |                                 |                               |                                  |
| H1- Properties on South Hykeham Road | Medium      | Temporary moderate adverse         | Moderate adverse                      | Moderate adverse             | Moderate adverse                | Permanent moderate adverse    | Permanent moderate adverse       |

| Visual Receptor                                              | Sensitivity | Magnitude of Impact (Construction) | Significance of Effect (Construction) | Magnitude of Impact (Year 1) | Significance of Effect (Year 1) | Magnitude of Impact (Year 15) | Significance of Effect (Year 15) |
|--------------------------------------------------------------|-------------|------------------------------------|---------------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| H2 – Properties in South Hykeham                             | Medium      | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| H3 - Properties along Station Road, Waddington               | Medium      | Temporary major adverse            | Temporary large adverse               | Major adverse                | Large adverse                   | Permanent major adverse       | Permanent large adverse          |
| H4 – Properties on the southern edge of Bracebridge Heath    | Medium      | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| H5 – Properties in Waddington                                | Medium      | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| H6 - Properties on the northern edge of Aubourn and Harmston | Medium      | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |
| <b>Workers and Visitors to Local Businesses</b>              |             |                                    |                                       |                              |                                 |                               |                                  |
| B1 – Thorpe-on-the-Hill Services                             | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent neutral                |
| B2 – Newark Road Complex                                     | Negligible  | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent neutral                |

| Visual Receptor                    | Sensitivity | Magnitude of Impact (Construction) | Significance of Effect (Construction) | Magnitude of Impact (Year 1) | Significance of Effect (Year 1) | Magnitude of Impact (Year 15) | Significance of Effect (Year 15) |
|------------------------------------|-------------|------------------------------------|---------------------------------------|------------------------------|---------------------------------|-------------------------------|----------------------------------|
| B3 – Roman Way Industrial Estate   | Negligible  | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent neutral                |
| B4 – Boundary Lane Enterprise Park | Negligible  | Temporary minor adverse            | Temporary slight adverse              | Minor adverse                | Slight adverse                  | Permanent minor adverse       | Permanent neutral                |
| B5 – RAF Waddington                | Low         | Temporary moderate adverse         | Temporary slight adverse              | Moderate adverse             | Slight adverse                  | Permanent minor adverse       | Permanent slight adverse         |

## 4.6 Summary of Effects

- 4.6.1 Combining the above sections to consider the route as a whole, on balance the overall effects in terms of landscape impacts are moderately adverse as a result of the Scheme for the construction period and in year 1, reducing to slightly adverse by year 15 as the mitigation planting matures. For visual effects, the balance lies between largely and slightly adverse during construction and in year 1, reducing to slight or moderately adverse by year 15 as the planting scheme matures.



## 5. LANDSCAPE AND VISUAL MITIGATION

### 5.1 Landscape and Visual Mitigation

- 5.1.1 Matters relating to landscape and visual amenity were considered from the outset as part of an iterative design process, working collaboratively with engineering and environmental disciplines, and are embedded into the Scheme design.
- 5.1.2 The Landscape Masterplan Drawings **[CD7.1]** was informed by the need for mitigation of landscape and visual effects to reduce or partially mitigate the effects identified in the LVIA. The Landscape Masterplan was approved as part of the planning application.
- 5.1.3 The design objectives (as outlined in the Landscape Strategy **[CD7.1]**) are to:
- Create a high-quality landscaping scheme to mitigate for the loss of tree cover and hedgerow associated with the development;
  - Enhance the amenity value of the proposed road corridor and provide landscape planting proposals that are sympathetic with the existing landscape character of the area;
  - Minimise the impact on biodiversity and enhance where possible through good management and provision of areas for habitat creation;
  - Use ecological design principles with an emphasis on diverse habitat creation;
  - Create a 'feel safe' environment for road users;
  - Take account of the future maintenance requirements by careful selection of plant species and their relationship, with emphasis on achieving good establishment whilst minimising maintenance costs;
  - Retain, protect, and enhance, wherever possible, existing vegetation that is ecologically or visually important;

- Use, where appropriate, plant species that are in keeping with existing local character, enhance biodiversity and that provide seasonal highlights and interest throughout the road corridor; and
- Ensure the proposed planting is resilient to the anticipated effects of climate change.

- 5.1.4 The landscape mitigation required to integrate the highway corridor into its context is primarily provided by new woodland, hedgerows and trees to improve/enhance green infrastructure corridors along the road and create new boundaries to it. Due to the flat nature of the landscape, in some locations the objective is landscape integration rather than visual screening.
- 5.1.5 The visual mitigation is primarily in the form of woodland or tree planting along the highway corridor and particularly to the south of South Hykeham Community Primary School, west of Wath Lane, the bridge crossing at the River Witham, within the proposed cutting to the north-east of Station Road, and west of Sleaford Road. In these locations there are visual receptors of high or medium sensitivity.
- 5.1.6 The Scheme does not seek to address potential visibility from new housing developments yet to be constructed. Mitigation of such effects would fall to the individual developers.
- 5.1.7 Opportunities for mitigation and enhancement of the NHRR were presented for comment by the public during the public consultation. The consultation feedback from the public and other consultees was incorporated into revised landscape proposals, subsequently taken forward as the submitted Landscape Masterplan Drawings **[CD7.1]**.

- 5.1.8 The Scheme boundary will generally be demarked by a post and rail fence. This fence protects a hedge which is planted within the Scheme boundary. Over time that hedge will form a suitably robust boundary feature between the road and the adjacent land.
- 5.1.9 The scheme of new planting includes provision for: 1,711 new trees; woodland mix of 17.74 hectares (ha); woodland edge mix of 3.32 ha; and 20.34km of native hedgerow.
- 5.1.10 In order to provide the best balance between achieving sufficient initial screening, biodiversity benefits and the best chance for survival of planting, the scheme will include a combination of transplants and larger individual specimens. Younger planting stock are known to recover more effectively from 'transplant shock', whereby plants can put on more fibrous root growth allowing quicker initial growth, often catching up with larger stock planted at the same time within a few years
- 5.1.11 The landscape design was achieved within the land take required for the Scheme as a whole and did not require any additional land in order to mitigate effects identified within the LVIA. The land take to achieve the environmental mitigation is proportionate and necessary for a Scheme of this scale, and in my opinion is not excessive or unjustifiable in relation to land take.
- 5.1.12 For the purposes of the Landscape Strategy **[CD7.1]**, the Scheme was divided into four landscape character zones based on the Local Landscape Character Areas identified in the LVIA (see Figure 8.2 **[CD7.1]**).

**Character Zone 1: Terrace Sandlands (Drawings NHRR-TEP-ELS-HYKE-DR-LS-3001 - 3002, [CD7.1])**

- 5.1.13 This character zone extends from the North Hykeham roundabout to the SuDS basins to the west of Boundary Lane Industrial Estate. An overhead power line runs across this section of the Scheme which limits planting proposals underneath its length.
- 5.1.14 The Scheme will result in some changes to the arrangement and layout of the existing North Hykeham Road roundabout (A46 Pennell's Roundabout) which will be planted with wildflower enriched grassland and scattered native trees. A wildlife pond with marginal planting and adjacent amphibian hibernaculum is proposed to the north-east of the roundabout to increase wildlife habitat opportunities. Open swales seeded with wet grassland meadow and periphery areas of wildflower enriched grassland is proposed on either side of the road.
- 5.1.15 The existing woodland and hedgerow network will be enhanced through the planting of native trees and new hedgerows along the Scheme boundary to reinforce the landscape character and increase visual screening from PRoW SHyk/9/2 (LVIA Receptor F3) and PRoW 20/1 (LVIA Receptor F4).

**Character Zone 2: Witham and Brent Vales (Drawings NHRR-TEP-ELS-HYKE-DR-LS-3003 – 3009, [CD7.1])**

- 5.1.16 This character zone comprises land between Boundary Lane Industrial Estate and PRoW Wdgn/9/1 (to the north of Somerton Gate Lane), including the South Hykeham Road roundabout, the River Witham bridge, and the Brant Road roundabout.

- 5.1.17 A new native hedgerow with scattered hedgerow trees is proposed along the Scheme boundary to help integrate the Scheme into the landscape and provide filtering in views from residential properties along South Hykeham Road and in South Hykeham.
  
- 5.1.18 New woodland planting and woodland edge planting is proposed in the area to the south of South Hykeham Community Primary School and near Wath Lane to increase screening from properties in South Hykeham and PRow including PRow SHyk/906/1 (LVIA Receptor BR2) PRow SHyk/2/2 (LVIA Receptor BR1) and PRow SHyk/1/1 (LVIA Receptor F5).
  
- 5.1.19 New native woodland planting and scattered native tree groups are proposed on the approach to the River Witham bridge to provide softening and screening of traffic movements from PRow SHyk/906/1 (LVIA Receptor BR2) and Brant Road (LVIA Receptor R7).
  
- 5.1.20 The roundabouts will be planted with scattered native trees, wildflower grassland and a low maintenance amenity grass verge.
  
- 5.1.21 Open swales and basins seeded with wet grassland meadow to the banks are proposed either side of the road to facilitate surface water drainage.

**Character Zone 3: Lincoln Cliff (Drawings NHRR-TEP-ELS-HYKE-DR-LS-3010 – 3013, NHRR-TEP-ELS-HYKE-DR-LS-3018, [CD7.1])**

- 5.1.22 This character zone comprises land between PRow Wdgn/9/1 (to the north of Somerton Gate Lane) and Grantham Road.
  
- 5.1.23 A new native hedgerow with scattered hedgerow trees is proposed along the Scheme boundary to help integrate the Scheme into the landscape and provide filtering in views from Somerton Gate Lane (LVIA Receptor R9).

- 5.1.24 New areas of woodland planting and native tree planting within areas of grassland is proposed near Station Road to provide screening and softening of the realigned Station Road and the Scheme from adjacent residential properties (LVIA Receptor H3).
- 5.1.25 The blocks of woodland and woodland edge planting in the proposed cutting will help to provide screening to the NHRR and Station Road bridge from PRow Wdgn/3/2 (part of the Viking Way long-distance footpath) (LVIA Receptor F8).
- 5.1.26 Pockets of open grassland and footpaths running through will break up the woodland blocks and provide good natural surveillance. Open swales seeded with wet grassland meadow and species-rich grassland are proposed either side of the road.
- 5.1.27 Pockets of new woodland planting are proposed near Grantham Road Roundabout to further filter views from the PRow. The roundabout will be planted with scattered native trees, wildflower enriched grassland and a low maintenance amenity grass verge.

**Character Zone 4: Bracebridge Limestone Heath (Drawings NHRR-TEP-ELS-HYKE-DR-LS-3013 - 3014, [CD7.1])**

- 5.1.28 This character zone comprises land between Grantham Road and Sleaford Roundabout.
- 5.1.29 The landscape along this length would be planted with hedgerows with scattered tree planting to replicate existing landscape features.
- 5.1.30 Open swales and a new attenuation basin to the south of the Sleaford Road roundabout will be seeded with wet grassland meadow and species-rich grassland to either side of the road.

- 5.1.31 Woodland planting is proposed around the attenuation basin to soften views of the Scheme on the approach to the Sleaford Road roundabout from the south. The roundabout will be planted with wildflower enriched grassland and scattered native trees.

## **5.2 Long-Term Maintenance and Management**

- 5.2.1 The Landscape and Ecological Management Plan (LEMP) **[CD8.83]** submitted with the planning application provides a framework for the long-term landscape management and maintenance of the proposed development. The LEMP details the appropriate maintenance of both retained and newly created habitats.
- 5.2.2 The LEMP **[CD8.83]** covers all areas of landscaping within the Site including amenity grassland, woodland planting and hedgerow planting. The LEMP has been prepared to support the delivery of Biodiversity Net Gain (BNG) **[CD8.84]** across the proposed and retained habitats on and off Site for a period of 30 years.
- 5.2.3 During the defect's liability period, landscape maintenance and replacement of failed planting will be completed by the landscape contractor who has implemented the scheme. Following the defects liability period, Lincolnshire County Council Highways Department will be responsible for operational management and maintenance of the landscape within the Site.
- 5.2.4 The LEMP **[CD8.83]** confirms that any failed planting will be removed and replaced with the same species between November and March for deciduous and coniferous species, and between September and April for evergreen species. If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

## 6. SUMMARY AND CONCLUSIONS

- 6.1.1 My name is Louise Fitzgerald and I am appointed by Lincolnshire County Council Highways to give evidence to the public inquiry into the Compulsory Purchase Order (CPO) **[CD1.1]** and Side Roads Order (SRO) **[CD1.2]** in relation to landscape and views.
- 6.1.2 I am a Chartered Member of the Landscape Institute and Associate at The Environment Partnership (TEP) Ltd. I have a Postgraduate Diploma in Professional Landscape Architecture from the University of East London and an integrated master's degree in Environmental Geography and Climate Change from the University of East Anglia.
- 6.1.3 I have prepared Landscape and Visual Impact Assessments (LVIA) and Appraisals (LVA) to accompany planning applications for a range of projects including road schemes, renewable energy schemes, residential development and commercial development schemes, both as standalone documents and as part of Environmental Impact Assessments. I have produced Landscape Character Assessments and Landscape Sensitivity Assessments on behalf of local planning authorities and government agencies and have reviewed LVAs and LVIAs prepared by others on behalf of local planning authorities.
- 6.1.4 I commenced work on the NHRR Scheme in May 2022. My role has involved:
- Contributions to ES Scoping Report;
  - Writing the content of the Landscape and Views chapter of the Environmental Statement **[CD7.1]**;
  - Reviewing the Landscape Masterplan and Landscape and Ecological Management Plan (LEMP) **[CD8.83]**;
  - Reviewing the detailed landscape design and mitigation proposals; and



- Attendance at public consultation events in June 2023.

- 6.1.5 My evidence is focussed on the need to acquire land for the purposes of providing essential landscape and visual mitigation of the permanent significant effects arising from the NHRR.
- 6.1.6 Planning Permission for the Scheme was granted on 13<sup>th</sup> May 2024 with the subsequent s73 application consented on 10<sup>th</sup> January 2025. The planning applications were accompanied by an Environmental Statement (ES) **[CD7.1]**. A LVIA was prepared as part of that ES.
- 6.1.7 The LVIA was prepared in accordance with best practice guidance including the 'Guidelines for Landscape and Visual Impact Assessment' (3rd Edition) **[CD6.45]**, Design Manual for Roads and Bridges (DMRB) LA 107 'Landscape and Visual Effects' **[CD6.1]** and DMRB LA 104 'Environmental Assessment and Monitoring' **[CD6.1]**.
- 6.1.8 The LVIA appraises the likely effects on landscape character and visual amenity arising from the Scheme. In accordance with the Guidelines for Landscape and Visual Impact Assessment, the appraisal is proportionate to the scale, context and nature of the development. The assessment considers the effects of the Scheme during construction, at Year 1 of operation (opening) and after 15 Years.
- 6.1.9 The LVIA identifies four Local Landscape Character Areas (LLCAs). The LLCAs from west to east are:
- LLCA 1: Terrace Sandlands;
  - LLCA 2: Witham and Brant Vales;
  - LLCA 3: Lincoln Cliff; and
  - LLCA 4: Bracebridge Limestone Heath.

- 6.1.10 During construction, adverse effects on landscape character and visual amenity will arise as a result of changes in land use, creation of stockpiles and construction compounds, temporary protective fencing/hoarding, presence of worker's facilities and construction of the new road.
- 6.1.11 The significance of effect on landscape character will be temporary slight adverse in LLCA 1: Terrace Sandlands and LLCA 4: Bracebridge Limestone Heath. The significance of effect on LLCA 2: Witham and Brent Vales will be temporary moderate adverse. The greatest level of effect will be within LLCA 3: Lincoln Cliff where cutting works along the Lincoln Cliff/Lincoln Edge will be clearly visible. The significance of effect on LLCA 3 during construction will be temporary large adverse.
- 6.1.12 At Year 1 the significance of effect on landscape character will be slight adverse within LLCA 1 and LLCA 4, moderate adverse within LLCA 2 and large adverse within LLCA 4.
- 6.1.13 After 15 years, it is anticipated that the landscape structure proposed as part of the embedded mitigation, will be establishing to integrate the Scheme into its surroundings.
- 6.1.14 The residual significance of effect on landscape character will be slight adverse within LLCAs 1, 2 and 4 and moderate adverse within LLCA 3: Lincoln Cliff.
- 6.1.15 The LVIA **[CD7.1]** included fourteen representative viewpoints to demonstrate the nature of views towards the Scheme from within the 2km study area. These viewpoints were agreed with officers at Lincolnshire County Council and North Kesteven District Council.

- 6.1.16 During construction, visual effects range from slight to large adverse for public and private receptors. These effects are temporary. The greatest level of visual effects will be experienced by the closest receptors: primarily users of PRoW within and close to the Scheme and residential properties adjoining the Site along Station Road.
- 6.1.17 Visual effects for public receptors on completion of the Scheme (during operation at Year 1) will be large adverse from PRoW within and close to the Scheme area where there will be near open views of the Scheme, moderate adverse from most local roads and more distant PRoWs and slight adverse for users of some local roads.
- 6.1.18 Visual effects for private visual receptors on completion of the Scheme (during operation at Year 1) ranges from slight to large adverse. The greatest effects are experienced by residents in properties that immediately border the Scheme along Station Road.
- 6.1.19 After 15 years residual visual effects for public receptors ranges from neutral to large adverse, with the greatest effects from PRoW close to the Scheme. In most instances tree planting will have become established to provide a greater degree of filtering and screening to the Scheme.
- 6.1.20 Visual effects for private visual receptors at year 15 will range from neutral to large adverse with the greatest effects to residents of properties along Station Road, immediately adjacent to the Scheme.
- 6.1.21 These impacts were weighted in the planning balance when the Council determined the planning application.

- 6.1.22 Matters relating to landscape and visual amenity were considered from the outset as part of an iterative design process, working collaboratively with engineering and environmental disciplines, and are embedded into the Scheme design.
- 6.1.23 The Draft Landscape Masterplan **[CD7.1]** was presented for comment by the public during the public consultation events. The consultation feedback was incorporated into the submitted Landscape Masterplan.
- 6.1.24 The Landscape Masterplan **[CD7.1]** approved by the Council was informed by the need for mitigation of landscape and visual effects to reduce or partially mitigate the effects identified in the LVIA. Mitigation of effects has been achieved through a landscape design which is proportionate to the Scheme in order to achieve an effective degree of screening and integration into the wider landscape context, whilst acknowledging that some adverse effects will remain.
- 6.1.25 The landscape mitigation required to integrate the highway corridor into its context is primarily provided by new woodland, hedgerows and trees to improve/enhance green infrastructure corridors along the road and create new boundaries to it. Due to the flat nature of the landscape, in some locations the objective is landscape integration rather than visual screening.
- 6.1.26 The visual mitigation is primarily in the form of woodland or tree planting along the highway corridor, particularly to the south of South Hykeham Community Primary School, west of Wath Lane, the bridge crossing at the River Witham, within the proposed cutting to the north-east of Station Road, and west of Sleaford Road.

6.1.27 Based on location, nature and design of the overall proposals, I conclude that the required land take for the Scheme as a whole is appropriate to integrate the Scheme into the context; and reduce and mitigate potential effects on landscape character and visual amenity.