



The Sizewell C Project

6.6 Volume 5 Two Village Bypass Chapter 6 Landscape and Visual Appendices 6A - 6B

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VOLUME 5, CHAPTER 6, APPENDIX 6A: ILLUSTRATIVE VIEWPOINTS



Appendices

1.1 Illustrative Viewpoints 1

Plates

Plate 1.1: Junction of Tinker Brook and Church Road 1
Plate 1.2: Near St Mary's Church, Farnham 2

Tables

None Provided.

Figures

None Provided.

1.1 Illustrative Viewpoints

Plate 1.1: Junction of Tinker Brook and Church Road



Plate 1.2: Near St Mary's Church, Farnham





VOLUME 5, CHAPTER 6, APPENDIX 6B: NIGHT-TIME APPRAISAL

Contents

1.	Night-time Appraisal	1
1.1	Introduction	1
1.2	Legislation, policy and guidance	1
1.3	Methodology	3
1.4	Assessment	5
	References	13

Tables

None provided.

Plates

None provided.

Figures

Figure 6B.1: Existing light pollution

1. Night-time Appraisal

1.1 Introduction

1.1.1 This appendix to **Volume 5, Chapter 6** of the **Environmental Statement (ES)** assesses the potential landscape and visual effects arising from lighting during the construction and operation of the proposed two village bypass (referred to throughout this appendix as the ‘proposed development’). Lower level light periods, when lighting may be required, have the potential to arise in the early morning, dusk and evening, as well as at night.

1.1.2 The assessment describes the existing landscape and visual baseline at lower level light periods; describes the key lighting aspects of the proposed development as they relate to landscape and visual matters; describes the anticipated change upon both landscape and visual receptors; and assesses the magnitude and significance of change for both the construction and operational phases of the proposed development.

1.2 Legislation, policy and guidance

1.2.1 No international or regional legislation or policy is deemed relevant to the assessment for this site.

a) National

1.2.2 At a national level, the relevant National Policy Statements (NPSs) are considered alongside the National Planning Policy Framework (NPPF), and the Planning Practice Guidance (PPG) for light pollution. Much of the policy and guidance relates to ecology considerations or creating nuisance through lighting. Lighting in relation to the proposed development will be designed to avoid creating nuisance or effects on residential amenity and policy specifically in relation to these matters is not referenced below.

1.2.3 Paragraph 180 of the NPPF (Ref 1.1) requires decisions to ensure that *“new development is appropriate for its location”* including by limiting the impact of light pollution on local amenity and *“intrinsically dark landscapes”*.

1.2.4 The PPG for light pollution (Ref 1.2) sets out the circumstances in which light pollution can become relevant to planning. It states at paragraph 001:

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“Artificial light is not always necessary. It has the potential to become what is termed ‘light pollution’ or ‘obtrusive light’, and not all modern lighting is suitable in all locations. It can be a source of annoyance to people, harmful to wildlife, undermine enjoyment of the countryside or the night sky, especially in areas with intrinsically dark landscapes. Intrinsically dark landscapes are those entirely, or largely, uninterrupted by artificial light. National parks and nature reserves can serve as good examples, particularly where they support habitats for native nocturnal animals.”

1.2.5 The guidance continues at Paragraph 003:

“Light intrusion occurs when the light ‘spills’ beyond the boundary of the area being lit. For example, light spill can result in safety impacts related to the impairment or distraction of people (e.g. when driving vehicles), health impacts arising from impaired sleep, cause annoyance to people, compromise an existing dark landscape and/or adversely affect natural systems (e.g. plants, animals, insects, aquatic life). These adverse effects impair sleeping, cause annoyance to people, compromise an existing dark landscape and/or affect natural systems (e.g. plants, animals, insects, aquatic life). It can usually be completely avoided with careful lamp and luminaire design selection and positioning:

Lighting near or above the horizontal is usually to be avoided to reduce glare and sky glow (the brightening of the night sky).

Good design, correct installation and ongoing maintenance are essential to the optical effectiveness of lighting schemes such as fixed and/or regularly operated functional and decorative lighting elements.”

1.2.6 Paragraph 005 adds:

“The character of the area and the surrounding environment may affect what will be considered an appropriate level of lighting for a development. In particular, lighting schemes for developments in protected areas of dark sky or intrinsically dark landscapes should be carefully assessed as to their necessity and degree.”

b) Local

- 1.2.7 Suffolk Coastal District Local Plan Core Strategy & Development Management Policies (Ref 1.3). Development Management Policy DM26 – Lighting sets out the Council’s approach to minimising light pollution. The policy is worded as follows:

“The District Council will seek to minimise light pollution. Applications for development requiring or likely to require external lighting should include details of lighting schemes. This should include position, height, aiming points, lighting levels and a polar luminance diagram. Applicants will need to satisfy the District Council that:

(a) The proposed lighting scheme is the minimum needed for security, working purposes, recreational or other use of the land;

(b) It is designed so as to minimise pollution from glare and light spillage, particularly to residential and commercial areas, areas of nature conservation importance, and areas whose open and landscape qualities would be affected;

...

In order to prevent unnecessary intrusion into the countryside, or the effect on residential amenity, the District Council may seek to control the days and times of use of lighting (excluding street lighting).”

1.3 Methodology

- 1.3.1 Night-time assessment of lighting on landscape and visual receptors is an emerging area, and there is no specific guidance on which to base the assessment.
- 1.3.2 The approach and methodology of this assessment will follow the same structured approach as **Volume 5, Chapter 6** of the **ES**. The assessment terminology will also follow that presented in the landscape and visual methodology, with the exception of the approach to assessing and describing the sensitivity of receptors as follows:

a) **Sensitivity of landscape character at night**

1.3.3 For Landscape Character Types (LCTs), susceptibility will be judged based on the degree to which the character of the landscape is characterised by darkness, informed by satellite mapping of light distribution and site observations. Value will be judged as presented within the assessment of effects during the day, unless specific factors suggest otherwise, for example the identification of a Dark Sky Discovery Site which would increase value; or where factors that contribute to value in the daytime are irrelevant at night (which may reduce value at night).

b) **Sensitivity of visual receptors at night**

1.3.4 For visual receptors the assessment will take account of the importance attached to views at night. Generally, the value attached to night-time views is considered to be low, unless there is a particular feature that can be best, or only appreciated in the hours of darkness. This may include views of stars and the night sky that are only, or best available in particularly dark areas, or views to well-known landmarks that are illuminated at night.

1.3.5 The susceptibility of visual receptors also differs at night, reflecting the different activities people undertake in the hours of darkness. For example, drivers using roads at night tend to be more focused on the road and the area illuminated by their headlights and roadside lighting than during the day and may have their attention drawn by oncoming headlights, road markings/cat's eyes, or signage, resulting in lower susceptibility. By contrast, people taking part in activities requiring darkness, such as star gazing, would be of higher susceptibility.

1.3.6 The sensitivity of visual receptors at night is rated as follows:

- National value and high susceptibility – visitors to Dark Sky Parks or Dark Sky Reserves as recognised by the International Dark Sky Association.
- Local value and high susceptibility – visitors to Dark Sky Discovery Sites, public observatories or places often visited by astronomical societies and groups.
- Community value and high susceptibility – people engaged in night-time activity such as bat watching, residents of notably dark areas (i.e. rural locations with no street lighting) in the streets around their homes and footpaths where dark skies are integral to the amenity.
- National (or Local) value and medium susceptibility – visitors to nationally important or well-known local landmarks that are illuminated at night.

- Community value and medium susceptibility – residents in urban areas or semi-urban/rural areas, users of cycle routes and footpaths where street lighting/illumination is characteristic.
- Community value and low susceptibility – drivers using local, unlit roads and train passengers.
- Limited value and low susceptibility – users of A roads, illuminated minor roads and people at their place of work.

c) Scope

1.3.7 The extent of the study area for the assessment of night-time effects is 2 kilometres (km), which replicates that used for the assessment of daytime effects, which has been agreed by landscape and visual consultees. The assessment considers the impact of lighting on landscape character, visual receptors and landscape designations.

1.3.8 Viewpoints from the main assessment were visited at night as relevant. However, a number are inaccessible at night due to being unlit or were not suitable for night-time photography due to proximity to busy roads. Therefore, no night-time viewpoints are presented to accompany this assessment.

1.4 Assessment

1.4.1 This section identifies those groups of landscape and visual receptors likely to experience notable effects as a result of the proposed lighting associated with the proposed development. The baseline description of the existing night-time environment for each receptor group is provided alongside the assessment of effects for ease of reference.

1.4.2 This section considers both landscape character and visual receptors before considering designated landscapes. It is common for designations to encompass both character and visual considerations within their special qualities or purposes of designation. It therefore makes a more natural reading sequence to draw together those aspects of character and views which relate to the designation if they have been described earlier in the chapter.

a) Night-time visual environment of the study area

1.4.3 The existing intensity of artificial lighting across the study area is illustrated on **Figure 6B.1** to this appendix using satellite data (Visible Infrared Imaging Radiometer Suite Day/Night) from March 2019 (Ref 1.4). This illustrates that there is a relatively low level of artificial light within much of the study area, including the site itself. Slight increases in light pollution exist across the study area, primarily around settlements as Stratford St. Andrew, Benhall Green and Little Glemham.

1.4.4 Higher degrees of light pollution can be found in the north-east and north-west of the study area, caused by artificial lighting at the settlement of Saxmundham and in the vicinity of Parham Airfield respectively. Roads within the study area generally unlit and have little effect on the radiance levels.

b) Lighting proposals

1.4.5 As discussed in **Chapter 2** of this volume of the **ES**, the route of the proposed development would be mostly unlit, however, lighting would be provided at the A12 western roundabout and the A12/A1094 eastern roundabout extending north to highlight the junction to approaching vehicles. Lighting would be in compliance with the Design Manual for Roads and Bridges and the Code of Practice for the Design of Road Lighting, Lighting of Roads and Public Amenity Areas BS 5489-1:2013. Lighting columns would be of appropriate adoptable standards and would have a maximum height with lanterns of 10 metres (m).

c) Landscape effects

1.4.6 Local LCTs within the 2km study area, as identified in the Suffolk Landscape Character Assessment (Ref 1.5), are illustrated on **Figure 6B.1** to this appendix. This shows that LCTs within the east of the study area are characterised by lower intensity of artificial light present within them, with very few areas of higher intensity artificial light.

1.4.7 The main source of effects would occur as a result of the proposed lighting around the two proposed roundabouts and the approaches to them. Lighting around both proposed roundabouts would occur in unlit areas with low levels of existing artificial lighting, and where there is limited artificial lighting in the surrounding area.

1.4.8 As discussed in the **Volume 5, Chapter 6** of the **ES**, the only landscape types likely to experience effects from the proposed development are the Rolling Estate Sandlands, Valley Meadowlands and Rolling Estate Claylands LCTs. This remains the case in relation to lighting effects at night.

i. Rolling Estate Sandlands

1.4.9 The key characteristics of this LCT are described in the Suffolk Landscape Character Assessment and set out in the **Volume 5, Chapter 6** of the **ES**. The night-time character of the LCT is not discussed in the current character assessment. However, this LCT is generally relatively dark with little existing light pollution, as illustrated by **Figure 6B.1** of this appendix, although existing light pollution is very slightly higher in the vicinity of the proposed A12/A1094 eastern roundabout.

1.4.10 There are limited sources of artificial lighting present within the landscape type, within the study area. As a result, this LCT is considered to have high-medium susceptibility to the proposed lighting. Taking this with the local value of the landscape, as set out in **Volume 5, Chapter 6** of the **ES**, the LCT is considered to have high-medium sensitivity to the proposed lighting.

1.4.11 The proposed development would introduce a focused area of lighting within the LCT, at the proposed A12/A1094 eastern roundabout, in an area where there is not currently any lighting of a similar type and intensity. Effects from the proposed lighting around the proposed western roundabout would be unlikely to be experienced within this LCT. This would result in permanent effects on this LCT that would be large-medium scale and occur over a limited extent. The effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

ii. **Valley Meadowlands**

1.4.12 The key characteristics of this LCT are described in the Landscape Character Assessment and set out in the **Volume 5, Chapter 6** of the **ES**. The night-time character of the LCT is not discussed in the current character assessment. However, this LCT is generally relatively dark with little existing light pollution, as illustrated by **Figure 6B.1** of this appendix, although existing light pollution is very slightly higher in the vicinity of Stratford St. Andrew.

1.4.13 There are limited sources of artificial lighting present within the landscape type, within the study area. As a result, this LCT is considered to have high-medium susceptibility to the proposed lighting. Taking this with the local value of the landscape, as set out in **Volume 5, Chapter 6** of the **ES**, the LCT is considered to have high-medium sensitivity to the proposed lighting.

1.4.14 None of the lighting proposed as part of the proposed development would be located within the LCT. Given the proximity of the proposed lighting around the proposed western roundabout, there would be some night-time effects on the LCT as a result of the introduction of new artificial lighting nearby. Effects from the proposed lighting around the proposed A12/A1094 eastern roundabout would be unlikely to be experienced within this LCT. This would result in permanent effects on this LCT that would be medium–small scale and occur over a limited extent. The effects would be of low-negligible magnitude, resulting in a slight adverse effect, which is considered to be **not significant**.

iii. Rolling Estate Claylands

- 1.4.15 The key characteristics of this LCT are described in the Landscape Character Assessment and set out in the **Volume 5, Chapter 6** of the **ES**. The night-time character of the LCT is not discussed in the current character assessment. However, this LCT is generally relatively dark with little existing light pollution, as illustrated by **Figure 6B.1** of this appendix, although existing light pollution is very slightly higher in the vicinity of Stratford St. Andrew.
- 1.4.16 There are limited sources of artificial lighting present within the landscape type, within the study area. As a result, this LCT is considered to have high-medium susceptibility to the proposed lighting. Taking this with the local value of the landscape, as set out in **Volume 5, Chapter 6** of the **ES**, the LCT is considered to have high-medium sensitivity to the proposed lighting.
- 1.4.17 The proposed development would introduce a focused area of lighting within the LCT, at the proposed western roundabout, in an area where there is not currently any lighting of a similar type and intensity. Effects from the proposed lighting around the proposed A12/A1094 eastern roundabout would be unlikely to be experienced within this LCT. This would result in permanent effects on this LCT that would be large-medium scale and occur over a limited extent. The effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

d) Visual effects

- 1.4.18 The approach to assessing visual receptors will follow the same approach as **Volume 5, Chapter 6** of the **ES**, utilising receptor groups and assessing effects on key routes separately.

i. Visual aids

- 1.4.19 Of the viewpoints utilised for the full landscape and visual assessment in **Volume 5, Chapter 6** of the **ES**, representative viewpoints R3, R4, R5, R6, R8, and R9 are all on public rights of way that would not generally be used at night because they are unlit. Representative viewpoints R1, R2, R6, R7 R8 are located along unlit stretches of road where it would be unsafe to take photographs at night. Consequently, no night-time photography has been provided to accompany the assessment.

Receptor groups

- 1.4.20 *Group 1 – Users of public footpaths (E-137/028/0, E-137/029/0, E-243/006/0, E-243/007/0 and E-243/008/0), local roads (the A1094 and unnamed roads off it) and residents and visitors around Friday Street Farm shop, to the western extent of the site:* The public footpaths are unlikely to be used at night due to their unlit nature and effects on users of the routes are not considered further within this assessment. As set out above, people in and around their homes in unlit rural areas are considered to be of high–medium sensitivity, with users of unlit rural roads considered to be of medium–low sensitivity. For both local residents and users of the minor roads in this receptor group, the proposed lighting of the A12/A1094 eastern roundabout would introduce a focused area of new artificial lighting into an area that is currently unlit. The proposed lighting around the proposed western roundabout would not be visible from this receptor group. Permanent effects from the proposed lighting would be of large-medium scale over a localised extent. The effects would be of high-medium magnitude, resulting in a major-moderate adverse effect, which is considered to be **significant**.
- 1.4.21 *Group 2 – Users of public footpaths (E-243/003/0, E-243/004/0, E-243/011/0 and E-243/012/0), local access roads and residents around the south east of Farnham and Farnham Hall:* The public footpaths are unlikely to be used at night due to their unlit nature and effects on users of the routes are not considered further within this assessment. As set out above, people in and around their homes in unlit rural areas are considered to be of high–medium sensitivity, with users of unlit rural roads, which would include the access roads within this receptor group, are considered to be of medium–low sensitivity. For both local residents and users of the access roads in this receptor group, there would be little visibility of the proposed lighting of the A12/A1094 eastern roundabout and around the proposed western roundabout due to intervening vegetation and distance from the proposed lighting columns. Permanent effects from the proposed lighting would be of small-negligible scale over a localised extent. The effects would be of low-negligible magnitude, resulting in a slight adverse effect, which is considered to be **not significant**.

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- 1.4.22 *Group 3 – Users of public footpaths (E-243/001/0, E-243/002/0 and E-374/009/0) and local roads (unnamed) south of Farnham, as well as local residents along them, within approximately 350m:* The public footpaths are unlikely to be used at night due to their unlit nature and effects on users of the routes are not considered further within this assessment. As set out above, people in and around their homes in unlit rural areas are considered to be of high–medium sensitivity, with users of unlit rural roads considered to be of medium–low sensitivity. For local residents and users of the access roads in this receptor group, there would be little visibility of the proposed lighting of the A12/A1094 eastern roundabout and around the proposed western roundabout due to intervening vegetation and distance from the proposed lighting columns. Permanent effects from the proposed lighting would be of small-negligible scale over a localised extent. The effects would be of low-negligible magnitude, resulting in a slight adverse effect, which is considered to be **not significant**.
- 1.4.23 *Group 4 – Pedestrians using the footways along the A12 and local residents along the A12 at Stratford St. Andrew, to the north of the site:* As set out above, people in and around their homes in unlit rural areas are considered to be of high–medium sensitivity. For local residents or visitors using the footway within this receptor group, the proposed lighting around the proposed western roundabout would be visible in relatively close proximity, in an area that is currently unlit. The proposed lighting around the proposed A12/A1094 eastern roundabout would be unlikely to be visible from this receptor group. This would result in permanent effects for users of the footway and residents in and around their homes that would be large-medium scale and occur over a localised extent. The effects would be of high-medium magnitude, resulting in a major-moderate adverse effect, which is considered to be **significant**.
- 1.4.24 *Group 5 – Users of Tinker Brook to the west of the site, within approximately 250m, and residents along it:* As set out above, people in and around their homes in unlit rural areas are considered to be of high–medium sensitivity, with users of unlit rural roads considered to be of medium–low sensitivity. For local residents and users of the access roads in this receptor group, the proposed lighting around the proposed western roundabout would be visible in relatively close proximity to part of Tinker Brook, in an area that is currently unlit. The proposed lighting around the proposed A12/A1094 eastern roundabout would be unlikely to be visible from this route. This would result in permanent effects for residents and users Tinker Brook that would be large-medium scale and occur over a limited extent. The effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

Long-distance routes

- 1.4.25 The A12 is the main road within the study area and passes through the site boundary at the western and eastern ends. As set out above, users of A roads at night are considered to be of medium–low sensitivity. For night-time users of the A12 the proposed lighting around the proposed A12/A1094 eastern roundabout and the proposed western roundabout would form two noticeable new features when passing through the study area. Road users on the A12 would experience large scale effects as they use the two proposed development, and similar effects would be experienced by train passengers. However, this would be very brief parts of a longer journey and the long-term effects would be of limited extent. These effects would be of medium magnitude, resulting in a moderate adverse effect that is considered to be **not significant**.
- 1.4.26 Two regional cycle routes (Sustrans Regional Cycle Route 41 and Suffolk Coastal Cycle Route) pass through the study area and along the edge of the site, utilising the same alignment along Tinker Brook. Any users of this route at night are considered to be of medium sensitivity (local/district value and low susceptibility). For users of the cycle routes, the proposed lighting around the proposed western roundabout would be visible in relatively close proximity, in an area that is currently unlit. The proposed lighting around the proposed A12/A1094 eastern roundabout would be unlikely to be visible from this route. This would result in permanent effects for users of the cycle routes that would be large-medium scale and occur over a limited extent. The effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

e) Effects on landscape designations

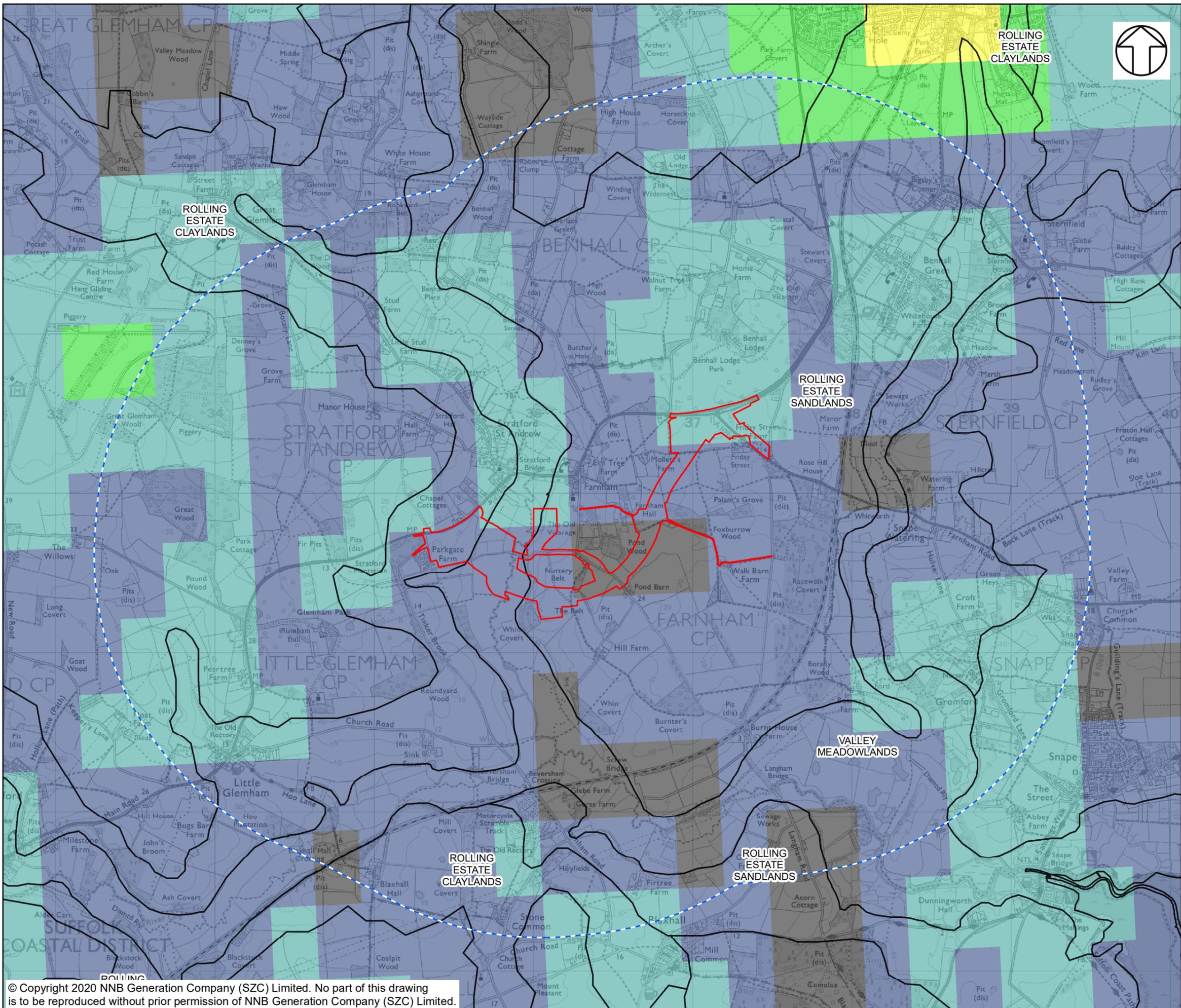
- 1.4.27 As set out in **Volume 5, Chapter 6** of the **ES**, a Special Landscape Area (SLA) covers the majority of the study area and the western half of the site. The SLA is generally relatively dark with little existing light pollution, as illustrated by **Figure 6B.1** of this appendix, although existing light pollution is very slightly higher in the vicinity of Stratford St. Andrew.
- 1.4.28 There are limited sources of artificial lighting present within the SLA, within the study area. As a result, this SLA is considered to have high-medium susceptibility to the proposed lighting. Taking this with the local value of the landscape, as set out in **Volume 5, Chapter 6** of the **ES**, the SLA within the study area is considered to have high-medium sensitivity to the proposed lighting.
- 1.4.29 The proposed development would introduce a focused area of lighting within the SLA at the proposed western roundabout and adjacent to the SLA at the proposed A12/A1094 eastern roundabout, in an area where there is not currently any lighting of a similar type and intensity. This would result in permanent effects on the SLA that would be large-medium scale and occur over a limited extent. The effects would be of medium magnitude, resulting in a moderate adverse effect, which is considered to be **not significant**.

References

- 1.1 MHCLG (2019) National Planning Policy Framework.
- 1.2 MHCLG (2019) Planning Practice Guidance – Light Pollution.
- 1.3 East Suffolk Council (2013) Suffolk Coastal District Council Core Strategy and Development Management Policies.
- 1.4 Juri Stare. Intensity of Artificial Lighting (Visible Infrared Imaging Radiometer Suite 2018). (Online) Available from: <https://www.lightpollutionmap.info/> (Accessed 22 March 2019).
- 1.5 Suffolk County Council (2008, revised 2011) Suffolk Landscape Character Assessment.

Figures

Figure 6B.1: Existing light pollution



NOTES

DATA PRESENTED TO REPLICATE MAPPING AT WWW.LIGHTPOLLUTIONMAP.INFO

KEY

- TWO VILLAGE BYPASS DEVELOPMENT SITE BOUNDARY
- STUDY AREA (2KM FROM SITE BOUNDARY)
- LANDSCAPE CHARACTER TYPES
- EXISTING LIGHT POLLUTION (MARCH 2019)

RADIANCE (W/CM2 * SR)

- < 0.25
- 0.25 - 0.4
- 0.4 - 1
- 1 - 3
- 3 - 6

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DOCUMENT:
 SIZEWELL C
 ENVIRONMENTAL STATEMENT
 VOLUME 5
 APPENDIX 6B
 NIGHT-TIME APPRAISAL

DRAWING TITLE:
 EXISTING LIGHT POLLUTION

DRAWING NO:
 FIGURE 6B.1

DATE: JAN 2020 DRAWN: V.W. SCALE: 1:22,500 @A3

