



The Sizewell C Project

6.9 Volume 8 Freight Management Facility Chapter 6 Landscape and Visual Appendices 6A - 6B

Revision: 1.0
Applicable Regulation: Regulation 5(2)(a)
PINS Reference Number: EN010012

May 2020

Planning Act 2008
Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009





VOLUME 8, CHAPTER 6, APPENDIX 6A: ILLUSTRATIVE VIEWPOINTS



Appendices

1.1 Illustrative Viewpoints 1

Plates

Plate 1.1: Levington Lane on Southern edge of Bucklesham 1
Plate 1.2: Footpath E-365/001/0 2

Tables

None Provided.

Figures

None Provided.

1.1 Illustrative Viewpoints

Plate 1.1: Levington Lane on Southern edge of Bucklesham



Plate 1.2: Footpath E-365/001/0





VOLUME 8, 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	11

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 **Chapter 6, Volume 8** of the Environmental Statement (ES) assesses the potential landscape and visual effects arising from lighting during the construction, operation and reinstatement and removal of the freight management facility site at Seven Hills, (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. 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:

NOT PROTECTIVELY MARKED

“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 of 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 can usually be completely avoided with careful lamp and luminaire 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 8, Chapter 6**. 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)/Areas (LCAs), 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 focussed 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 visited during the main assessment were deemed as inaccessible at night, due to safety concerns arising from the viewpoints being on unlit roads or inaccessible footpaths. 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 (Visible Infrared Imaging Radiometer Suite) Day/Night) from March 2019 (Ref 1.4). This illustrates that the level of artificial light within much of the study area, including the site itself, is at a greater level than more rural areas of Suffolk further to the north. However, light pollution increases to the north-west with increased proximity to Ipswich.

1.4.4 There are small number of other light sources within the study area, including the settlements of Bucklesham, Levington and Nacton, the A14 and other highways. Beyond those generally associated with the settlements these vary in prominence depending on the context of the view. Whilst most roads within the study area are generally unlit, there is lighting at the roundabout junction of the A14 and A12 to the north-west of the site. Other junctions along the A14 are also lit.

b) Lighting proposals

- 1.4.5 As discussed in **Chapter 2** of this volume of the **Environmental Statement**, lighting would be provided at the perimeter and parking areas of the proposed development for security and safety reasons. Lighting columns would have a maximum height with lanterns of 8 metres (m).
- 1.4.6 Regard has been given in the lighting design to minimising potential effects on neighbouring residential occupiers and ecological receptors, given that dark skies are a valued feature in the locality. Therefore, the lanterns would utilise LED based light fittings to ensure energy efficiency with zero-degree tilt, and lighting columns along the perimeter would be fitted with a demountable shield to reduce backward spill of light. To further assist in mitigating obtrusive light, a Central Management System has been proposed for the lighting which would be capable of dimming of parts of the site independently from other parts, as usage changes through the day and to allow for seasonal variations in the operational hours of the external lighting.

c) Landscape effects

- 1.4.7 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 associated with river valleys within the study area are characterised by lower intensity of artificial light present within them, relatively speaking, with localised areas of higher intensity focused towards Ipswich in the north-west.
- 1.4.8 LCTs to the north-east and south-west extents of the 2km study area have the lowest level of artificial light present within them. These LCTs are unlikely to experience any notable effects on landscape character as a result of the proposed development.
- 1.4.9 The main source of effects would occur as a result of the proposed lighting within the parking areas.
- 1.4.10 As discussed in the **Volume 8, Chapter 6**, the only landscape types likely to experience effects from the proposed development are the Estate Sandlands and Plateau Estate Farmlands LCTs. This remains the case in relation to lighting effects at night.

i. Estate Sandlands

- 1.4.11 The key characteristics of this LCT are described in the Landscape Character Assessment and set out in the **Volume 8, Chapter 6**. The night-time character of the LCT is not discussed in the current character assessment. However, this LCT is generally relatively dark but with some existing light pollution, as illustrated by **Figure 6B.1** of this appendix. Existing lighting within this LCT tends to be limited to traffic along the main roads and occasional isolated dwellings, but the area around Ipswich at the north-western extent of the study area creates a localised area of higher intensity artificial light before the LCT transitions to the urban area.
- 1.4.12 The proximity of lighting in the area around Ipswich and at the A14/A12 junction, as well as from traffic along the A14, creates a glow from artificial lighting within the landscape type in the study area. As a result, this LCT is considered to have medium susceptibility to the proposed lighting. Taking this with the community value of the landscape, as set out in **Volume 3, Chapter 6** (Doc Ref. 6.4), the LCT is considered to have medium–low sensitivity to the proposed lighting.
- 1.4.13 The proposed development would introduce a new area of lighting within the LCT, in an area with limited existing lighting of a similar type and intensity. This would result in medium-term effects on this LCT that would be large–medium scale and occur over a localised extent. Effects would be of medium magnitude, resulting in a **moderate adverse** effect, which is considered to be **not significant**, given the lower levels of similar existing artificial lighting in the vicinity of the site.

ii. Plateau Estate Farmlands

- 1.4.14 As for the main landscape and visual assessment in **Volume 8, Chapter 6**, visibility of the proposed development from within this LCT would be relatively limited. Those areas of the LCT that would have potential visibility of the lighting from the proposed development generally relatively dark but with some existing light pollution, as illustrated by **Figure 6B.1** of this appendix. Existing lighting within this LCT tends to be limited to traffic along the main roads and occasional isolated dwellings, with a similar pattern of localised higher intensity artificial light to the Estate Sandlands LCT, reflecting the transitions to the urban area of Ipswich to the west.
- 1.4.15 There is a slight separation from the lighting in the area around Ipswich and at the A14/A12 junction, as well as from traffic along the A14, within this LCT. As a result, this LCT is considered to have high–medium susceptibility to the proposed lighting. Taking this with the community value of the landscape, as set out in **Volume 8, Chapter 6**, the LCT is considered to have medium sensitivity to the proposed lighting.

- 1.4.16 The proposed development would introduce a new area of lighting within the LCT, in an area with limited existing lighting of a similar type and intensity. This would result in medium-term effects on this LCT that would be large–medium scale but occur over a limited extent. Effects would be of medium–low magnitude, resulting in a **moderate adverse** effect, which is considered **not significant**, given the lower levels of similar existing artificial lighting in the vicinity of the site.

d) Visual effects

- 1.4.17 The approach to assessing visual receptors will follow the same approach as **Volume 8, Chapter 6**, utilising receptor groups and assessing effects on key routes separately.

i. Visual aids

- 1.4.18 Of the viewpoints utilised for the full landscape and visual assessment in **Volume 8, Chapter 6**, viewpoints R1 and R3 are located on public rights of way that would not generally be used at night because they are unlit. Viewpoints R2 and R4 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

- 1.4.19 *Group 1 – users of PRow (Bridleways E/365/004/0, E/365/005/0, E-365/006/0, E-365/010/0, E-365/021/0 and Footpath E/365/024/0), Registered Common Land/open access land and residents of Keepers Cottages to the east of the site:* The public rights of way and Registered Common Land/open access land are unlikely to be used at night due to their unlit nature. Visibility from Keepers Cottages is restricted by the tall close-board fence and tree belt around the properties. Effects on users of these routes are not considered further within this assessment.
- 1.4.20 *Group 2 – users of PRow (Bridleways E-365/007/0, E-365/008/0 and E-365/009/0, and Footpaths E-169/017/0, E-365/011/0 and E-365/026/0) and Registered Common Land/open access land east of the A14 and Keepers Cottages:* The public rights of way and Registered Common Land/open access land are unlikely to be used at night due to their unlit nature. Effects on users of these routes are not considered further within this assessment.

- 1.4.21 *Group 3 – users of footpath (E-365/012/0), Bridge Road and the Levington Park complex to the south of the site:* The public footpath within this receptor group is unlikely to be used at night due to its unlit nature, and effects on users of the route are not considered further within this assessment. As set out above, users of unlit local roads are considered to be of medium–low sensitivity. They are considered more likely to be focussed on the road and the area illuminated by their headlights than during the day. Bridge Road is not orientated in such a way that drivers would look directly towards the site and the existing vegetation along the Ipswich to Felixstowe railway line would screen much visibility of the proposed lighting. Medium-term effects would be of small–negligible scale over a localised extent. These effects would be of low–negligible magnitude, resulting in a **slight adverse** effect that is considered to be **not significant**.
- 1.4.22 *Group 4 – users of local road (Felixstowe Road) to the south of the site:* As set out above, users of unlit local roads are considered to be of medium–low sensitivity. They are considered more likely to be focussed on the road and the area illuminated by their headlights than during the day. The road passes immediately by the site and drivers would have views of the proposed lighting when approaching the site from either direction, although drivers travelling westwards toward Ipswich already experience the effects of artificial lighting in Ipswich. Medium-term effects would be of large–medium scale over a localised extent. These effects would be of medium magnitude, resulting in a **moderate adverse** effect that is considered to be **not significant**.
- 1.4.23 *Group 5 – users of the A1156 to the west of the site around Porter’s Covert and Seven Hills Crematorium:* The crematorium closes at 17:00 each day (16:00 at weekends) and therefore has limited opening during lower level light periods, when lighting may be required. As the crematorium is largely surrounded by woodland, effects on visitors are not considered further within this assessment. As set out above, users of unlit local roads are considered to be of medium–low sensitivity. They are considered more likely to be focussed on the road and the area illuminated by their headlights than during the day. The A1156 is not orientated in such a way that drivers would look directly towards the site and the existing vegetation along the A1156 would screen much visibility of the proposed lighting. Medium-term effects would be of small–negligible scale over a localised extent. These effects would be of low–negligible magnitude resulting in a **slight adverse** effect that is considered to be **not significant**.

- 1.4.24 *Group 6 – users of footpath (E-169/017/0) and local roads (Tenth Road and Levington Lane) south of Bucklesham and north of the A14:* The public footpath within this receptor group is unlikely to be used at night due to its unlit nature, and effects on users of the route are not considered further within this assessment. As set out above, users of unlit local roads are considered to be of medium–low sensitivity. They are considered more likely to be focussed on the road and the area illuminated by their headlights than during the day. Tenth Road is not orientated in such a way that drivers would look directly towards the site and the existing vegetation along Levington Lane and Tenth Road would screen much visibility of the proposed lighting. Medium-term effects would be of small–negligible scale over a localised extent. These effects would be of low–negligible magnitude resulting in a **slight adverse** effect that is considered to be **not significant**.

Long-distance routes

- 1.4.25 The A14 and the Ipswich to Felixstowe railway line are the two main routes through the study area and pass along the northern and southern boundaries of the site respectively. As set out above, users of A roads and train passengers are considered to be of medium–low sensitivity. For both routes, the proposed lighting would form a noticeable new feature. Road users on the A14 would experience large scale effects as they pass the proposed development. Rail passengers would experience similar views but with a larger amount of screening due to the existing woodland belt between the railway line and site, effects would be of a small scale as users pass the proposed development. For both groups this would be a very brief part of a longer journey and the medium-term effects would be of limited extent. The effects would be of medium magnitude resulting in a **moderate adverse** effect that is considered to be **not significant** for road users, and negligible magnitude resulting in a **minimal neutral** effect that is considered to be **not significant** for rail passengers.

e) Effects on landscape designations

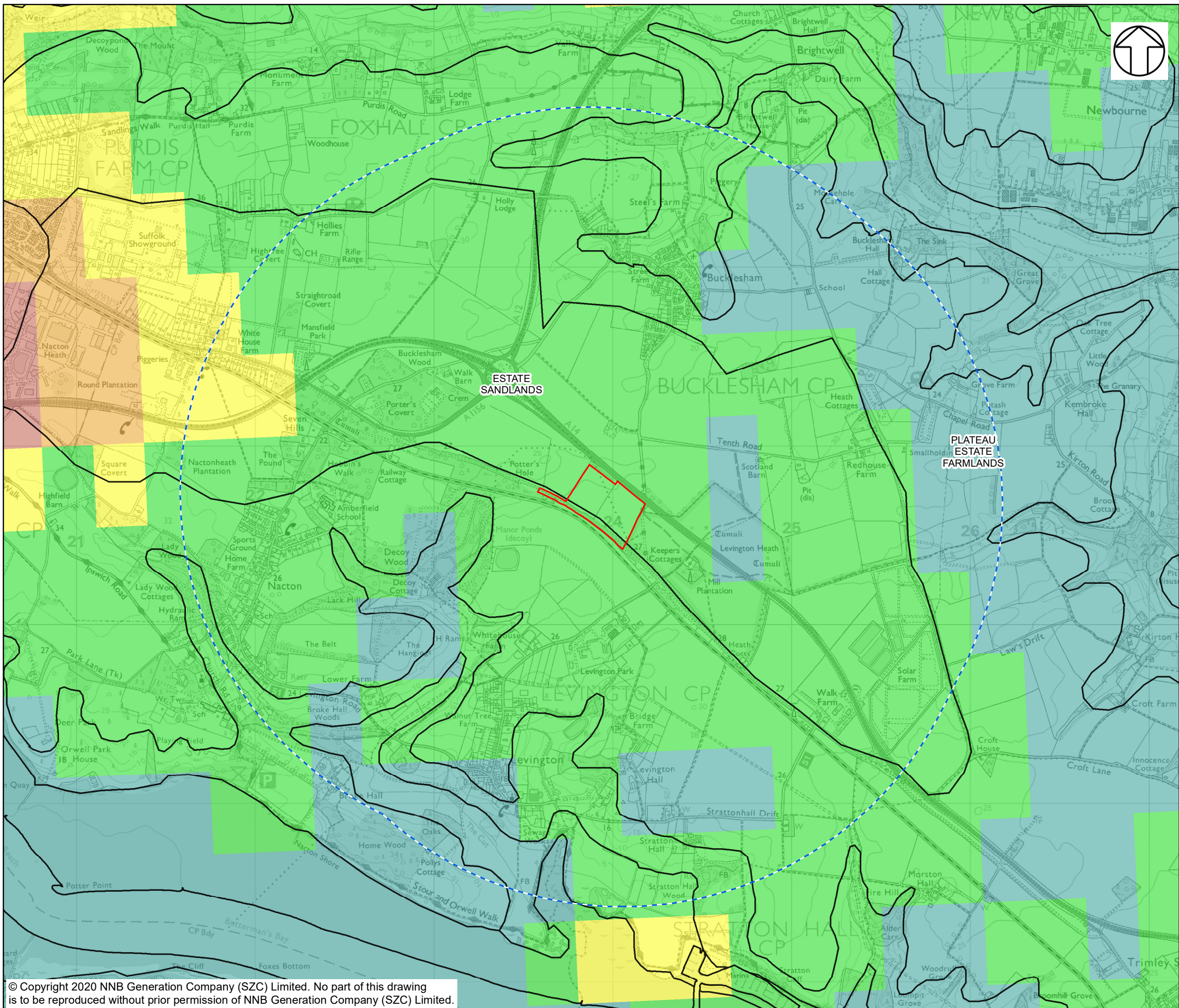
- 1.4.26 No designated landscapes have been identified as requiring assessment.

References

- 1.1 Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework
- 1.2 Ministry of Housing, Communities and Local Government (2019) Planning Practice Guidance – Light Pollution
- 1.3 ESC (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

- FREIGHT MANAGEMENT FACILITY DEVELOPMENT SITE BOUNDARY
- STUDY AREA (2KM FROM SITE BOUNDARY)
- LANDSCAPE CHARACTER TYPES

EXISTING LIGHT POLLUTION (MARCH 2019)

RADIANCE (W/CM2 * SR)

- 0.4 - 1
- 1 - 3
- 3 - 6
- 6 - 20
- 20 - 40

NOT PROTECTIVELY MARKED

COPYRIGHT

Reproduced from Ordnance Survey map with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office © Crown Copyright (2019). All Rights reserved. NNB GenCo 0100060408.
 VIIRS Day/Night Band Nighttime Lights (March 2019) Earth Observation Group, NOAA National Geophysical Data Center. Ordnance Survey material with the permission of the Ordnance Survey, on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright (Suffolk County Council Licence No. 100023395 2019).



DOCUMENT:
 SIZEWELL C
 ENVIRONMENTAL STATEMENT
 VOLUME 8
 APPENDIX 6B
 NIGHT-TIME APPRAISAL

DRAWING TITLE:
 EXISTING LIGHT POLLUTION

DRAWING NO:
 FIGURE 6B.1

DATE: JAN 2020 DRAWN: V.W. SCALE: 1:20,000 @A3

