

Great Yarmouth Third River Crossing Application for Development Consent Order

Document 6.2: Environmental Statement Volume II: Technical Appendix 10A: Legislation, Policy and Guidance

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (“APFP”)

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1 Legislation, Policy and Guidance

1.1.1 Tables 1.1 to 1.3 summarise the applicable legislation, policy and guidance to Chapter 10: Townscape.

Table 1.1: Summary of Legislation

Legislation	Summary	Chapter Reference
The Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref 10A.1)	The Act imposes a duty on Local Planning Authorities to determine which parts of their area are areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance, and to designate these areas as Conservation Areas.	Figure 10.1 identifies the Conservation Areas within the Study Area. These have been used to inform value within Townscape Character Areas (TCA's) where relevant see Section 10.5.

Table 1.2: Summary of Policy

Policy	Summary	Chapter Reference
National Policy Statement for National Networks (NPS NN) (Ref 10A.2)	<p>The following paragraphs are applicable to this assessment and are detailed below.</p> <p>Paragraph 5.144 states <i>“where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts”</i></p> <p>Paragraph 5.146 states <i>“The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and</i></p>	<p>The chapter conforms with paragraph 5.144, as it presents an assessment of any likely significant landscape and visual impacts during construction and operation. See Section 10.9.</p> <p>The chapter has considered impacts on views and visual amenity, including local amenity and tranquillity. See</p>

Policy	Summary	Chapter Reference
	<p><i>potential impacts on views and visual amenity. And “including on local amenity, tranquillity”</i></p> <p>Paragraph 5.149 <i>“Having regard to siting, operational and other relevant constraints, the aim should be to avoid or minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.”</i></p> <p>Also, with regards to developments that lie outside of national designation paragraph 5.154 states <i>“The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them.”</i></p> <p>Local designations outside national designations that indicate value as stated in paragraph 5.156 states <i>“Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation.”</i></p>	<p>Sections 10.4,10.5 and 10.9.</p> <p>The chapter conforms with paragraph 5.149. It considers the existing baseline conditions and nature of the likely effect of the Scheme. It has embedded mitigation within the Scheme to minimise the landscape and visual amenity effects. See Section 10.9 for a description of embedded mitigation.</p> <p>The assessment conforms with paragraph 5.154 as the assessment has considered the potential impacts on The Broads. Direct Landscape effects have been determined as insignificant (see insignificant effects) and effects on users enjoying The Broads have been included with the inclusion of two viewpoints within The Broads. See section 10.9.</p> <p>The assessment conforms with paragraph 5.156 by</p>

Policy	Summary	Chapter Reference
		the inclusion of local Conservation Areas and their contribution to overall value of a Townscape Character Area. See Figure 10.3 and Section 10.5.
Marine Policy Statement (MPS) (Ref 10A.3)	This sets out the definition for Seascape as <i>“landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other”</i> .	Seascape has been scoped out and therefore not assessed further as it is considered unlikely to be subject to significant effects associated with views from and towards the coastline that forms the local seascape.
National Policy Statement for Ports (NPS for Ports) (Ref 10A.4)	Whilst the Scheme does not constitute Port development, the NPS for Ports does provide useful context for coastal projects in so far that in paragraph 5.11.1 it clarifies that references to landscape should be taken as <i>“covering seascape and townscape, where appropriate.”</i>	The chapter conforms with this policy by assessing the impacts of the Scheme on townscape. Seascape has been scoped out. (See Scope of Assessment in Section 10.4)
National Planning Policy Framework (NPPF) (Ref 10A.5)	The NPPF was published in March 2012 and updated in February 2019. Paragraph 124 of the NPPF states that: <i>“The creation of high-quality buildings and places is fundamental to what the planning and development process should achieve. Good design is a key</i>	These principles have been considered in the design of the Scheme. See Chapter 4: Approach to EIA. The assessment considers local designations such as Conservation Areas

Policy	Summary	Chapter Reference
	<p><i>aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities.”</i></p> <p>Paragraph 127 of the NPPF specifies design objectives that development should achieve, and paragraph 170 of the same document states that the planning system “<i>should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes.</i>”</p>	<p>which indicate value, and which informs the baseline. See Figure 10.3 and Section 10.5.</p>
<p>East Inshore and East Offshore Marine Plans (EIEOMP) (Ref 10A.6)</p>	<p>Marine Plans are implemented as a requirement of the Marine and Coastal Access Act 2009. The plans provide for the application or clarification of national planning policy in relation to coastal areas.</p> <p>Policy SOC3 sets out, in order of preference, how proposals that may affect terrestrial or marine character should avoid, reduce, mitigate or provide justification for potential impacts.</p>	<p>The chapter has assessed the impacts on the River Yare, as a tidal estuary river, however an assessment of effects on the seascape has been scoped out. (See Scope of Assessment in Section 10.4)</p>
<p>Great Yarmouth Local Plan: Core Strategy 2013-2030 (Ref. 10A.7)</p>	<p>CS9: Encouraging Well-designed, distinctive place – High quality distinctive places</p>	<p>These principles have been considered in the design of the Scheme. See</p>

Policy	Summary	Chapter Reference
	<p>CS10: Safeguarding local heritage assets – Safeguarding conservation areas.</p>	<p>Chapter 4: Approach to EIA. The assessment considers local designations such as Conservation Areas which indicate value. See Figure 10.2 and Section 10.5.</p>
<p>Great Yarmouth Draft Local Plan Part 2 (Ref 10A.14)</p>	<p>Policy E6-DP Trees and landscape Development states that “<i>a landscaping plan</i>” should be included and that where there is inter-visibility with “<i>the designated Broads area</i>” development “<i>will be carefully controlled to avoid adverse impacts on their landscapes and natural beauty, and the enjoyment of their special qualities, including views out from those areas.</i>”</p> <p>Policy G3-DP Amenity Development states that “proposals will be supported where they contribute positively to the general amenities and qualities of the locality.” Planning permission will be granted only where development would not lead to an excessive or unreasonable impact on the amenities of the occupiers of existing and anticipated development in the locality, in terms including: loss of tranquillity from: intrusive lighting and visual movement.</p>	<p>The chapter conforms with policy E6-DP by referencing the Landscaping Plans (document reference 2.9). The assessment takes account of potential adverse impacts on the enjoyment of The Broads by including two representative viewpoints in the assessment that are located within The Broads. (See Figure 10.1 and Section 10.9)</p> <p>The chapter conforms with policy G3-DP by including public realm as part of the Scheme to contribute positively to the local amenity.</p> <p>The chapter assesses impacts on visual receptors, and considers amenity including loss of tranquillity and an artificial lighting</p>

Policy	Summary	Chapter Reference
		assessment has been undertaken (See Section 10.9)

Table 1.3: Summary of Guidance

Guidance	Summary	Chapter Reference
Guidelines for Landscape and Visual Impact Assessment (Ref 10A.8)	This sets out the assessment methodology for undertaking landscape and visual impact assessments. The GLVIA acknowledges the relationship between the perception of landscape and townscape and the similarities in the approach to be undertaken in the assessment process. It also identifies the perception of townscape, and the experience of viewers (referred to as receptors – defined as residents, people in their workplace, attending school, using recreational facilities and using the countryside, shoppers etc.) and development proposals.	The chapter conforms with this policy by assessing the impacts of the scheme on townscape (landscape and seascape). See Sections 10.1 and 10.9
Highways England’s interim advice note (IAN 135/10 (Ref 10A.9)	As the Scheme comprises a bridge structure and supporting link roads reference has been made to this guidance. Note that this supersedes the relevant section of the Design Manual for Roads and Bridges.	The chapter conforms with this policy.
Landscape Institute Advice Note 01/11 (Ref 10A.10)	This sets out the standards for viewpoint photography for projects within England to be included within an assessment.	The chapter conforms to this guidance by taking photographs to the required standard. See Appendix 10B.
Landscape Institute Technical Guidance Note 02/17 (Ref 10A.11)	This is known as the proportionality guidance, which sets out the required levels of photography to be included within an assessment.	Photomontages have been produced where there are significant visual effects and are presented in

Guidance	Summary	Chapter Reference
		document reference 6.12. See Appendix 10B for approach taken.
Natural England's An Approach to Landscape Character Assessment (Ref 10A.12)	This sets out an approach to landscape character assessment.	The chapter conforms to this guidance by the development of townscape character areas. (See Figure 10.3 and Section 10.5).
Townscape Character Assessment (Technical Information Note 05/2017) (TIN-05-2017) (Ref 10.15)	Provides guidance on undertaking townscape assessment in line with the GLVIA (Ref 10.5).	The methodology has considered the technical note and is presented within Section 10.4.

2 References

Ref 10A.1: Planning (Listed Buildings and Conservation Areas) 1990, (online) (Accessed April 2019).

Ref 10A.2: Department for Transport (2014). National Policy Statement for National Networks. (online) (Accessed April 2019).

Ref 10A.3: HM Government (2011). Marine Policy Statement. (online) (Accessed April 2019).

Ref 10A.4: Department for Transport (2014). National Policy Statement for Ports. (online) (Accessed April 2019).

Ref 10A.5 Ministry of Housing, Communities & Local Government (2019). National Planning Policy Framework. (online) (Accessed April 2019).

Ref 10A.6 Marine Management Organisation (2012). Seascape character assessment East Inshore and East Offshore marine plan areas (online) (Accessed April 2019).

Ref 10A.7: Great Yarmouth Borough Council (2015). Core Strategy 2013 – 2030 (online) (Accessed April 2019).

Ref 10A.8: Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment 3rd Edition, London: Routledge.

Ref 10A.9: Highways Agency (2010). Interim Advice Note 135/10 Landscape and Visual Effects Assessment. (online) (Accessed April 2019).

Ref 10A.10: Landscape Institute (2017). Photography and Photomontage Advice Note 01/2011. (online) (Accessed April 2019).

Ref 10A.11: Landscape Institute (2017). Townscape Character Assessment Technical Information Note 02/2017. (online) (Accessed April 2019).

Ref 10A.12: Natural England (2018). An Approach to Landscape Character Assessment (second version). (online) (Accessed April 2019).

Ref 10A.13 Landscape Institute (2018) Technical Guidance Note 05/17 Townscape Character Assessment. (online) (Accessed February 2019).

Ref 10A.14 Great Yarmouth Borough Council (2018). Draft Local Plan Part 2 (online) (Accessed April 2019).

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Document 6.2: Environmental Statement Volume II: Technical Appendix 10B: Photomontage Production Methodology

Planning Act 2008

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1 Verified Photomontage Methodology

1.1 Overview

1.1.1 The purpose of this document is to set out the method that was followed when preparing the verifiable computer-generated photomontages, with the aid of 3D visualisations, from an agreed range of viewpoints for the Scheme townscape assessment.

1.1.2 These are used to visually represent the Scheme within the Environmental Statement (document reference 6.1), and to ensure they comply with current industry best practice. The methodology is based upon the following documents:

- Landscape Institute Advice Note 01/2011: Photography and photomontage in landscape and visual assessment (Ref 10B.1).
- Guidelines for Landscape and Visual Impact Assessment - 3rd edition (GLVIA3) – Landscape Institute IEMA (Ref 10B.2).
- Scottish Natural Heritage – Visual Representation of wind farms February 2017 (Ref 10B.3).

1.1.3 The verifiable photomontages have been based on accurately captured and surveyed verifiable photography. Summer photography was captured between March 2017 and October 2017.

1.2 Photography

1.2.1 The photographs were captured by the following method:

- Where possible, the Scheme was positioned in the middle of the panorama. Photographs were taken in suitable weather conditions and ideally in clear visibility.
- The views have been photographed with a full frame digital SLR camera with a fixed 50mm lens. A Canon 6D Mark III was used.
- The camera was mounted in portrait format on a tripod with a panoramic head attached. The lens centre (its nodal point) was set at an eye level of

approximately 1.6m although the camera height may have been different if features such as fences or hedges obscured the view.

- The Camera's location was recorded using a X,Y,Z coordinate from the total station with offset to account for the lens. Camera setup levelled using levelling plate and levelling centre column.
- Camera set to manual focus; ISO100-400 with an aperture set to record an adequate depth of field (F8-F11) and white balance set appropriately to conditions.
- The camera was rotated between 15-20° to allow for a 50% overlap between each photograph.
- Images were captured in High Resolution JPEG format which includes lens distortion correction.
- The photography and surveying were undertaken simultaneously in order to avoid problems with markers in soft ground moving or being removed altogether.

1.3 Field of View

1.3.1 For the Scheme under consideration each viewpoint required a panorama using stitched individual images each with a field of view of 27 degrees. The extents of the Scheme and its relevant context determined the horizontal field of view required for photography and photomontage from any given viewpoint. Professional judgement based on experience of similar schemes was used to determine the required horizontal field of view to best represent the development from each viewpoint.

1.4 Verifiable Surveying

1.4.1 The following techniques were used to verify the survey data:

- A Leica Total Station was used by the surveyor to accurately record the camera position and also capture an array of selected survey reference points used to camera match and calibrate the photography. All survey points were captured in the British National Grid (BNG) co-ordinate system, recording an X, Y and Z co-ordinate for each.
- Each camera location was surveyed together with a series of clearly defined detail points within the image (e.g. corners of road markings, features on road signs, corners of building features etc.). Where a viewpoint does not contain many or any fixed targets suitable for

surveying, temporary targets were set up to allow the survey to be completed at the same time as the photography.

- Each image had a sufficient amount of clearly defined detail points taken across the width of the image and at near, mid and far distance (i.e. a balance of points across the photograph). Where possible these numbered between 8-12 points. Each detail point was given a unique number that related to the viewpoint number.
- The survey data was post-processed by the chartered surveyor to increase accuracy and then supplied in an Excel table for each set of viewpoint photography.
- A CAD file was provided containing the detail points and camera positions;

1.5 Model Assembly

1.5.1 The following methods were used to assemble the 3D model:

- Surveyed X, Y, Z co-ordinates of reference points and the camera position were set up in 3DS Max;
- The 3D building computer model of the Scheme as defined within the Scheme Description;
- The 3D computer model was georeferenced using supplied drawing data;
- Within the 3D software a virtual camera was set up using the coordinates provided by the surveyor and aligned with the reference markers;
- A lighting environment was set up within the 3D software, using the metadata stored in the image and also surveyor location data;
- A 3DS Max model file for each viewpoint was assembled before rendering. The assembled model contains the relevant Proposed Scheme digital terrain model tiles and any structures, buildings or further elements (as defined above) that can be seen in the viewpoint.

1.6 Camera Matching

1.6.1 The following describes the process of 'camera matching' to create a virtual camera:

- The process of camera matching creates a virtual camera in the same location and height, and pointing in the same direction as the physical camera used on site to capture the image.
- Each viewpoint has its survey points in place and the camera was set to the required field of view and view direction. (Generally, between 75-90°).
- The process involved accurately positioning the 3D model of the Proposed Scheme within each existing view. This was achieved through a process of matching the surveyed points in the digitised image with those recorded by the survey team on the existing photographs.
- The survey points and specifications of the lens type relating to each view were also entered into 3DS Max.
- The survey points of the camera position and each clearly defined detail point (relating to specified objects in the view) were then highlighted on the digitised image.
- Once the process of camera matching was completed, the 3D model of the Scheme was accurately positioned within each of the views captured. This was achieved by rendering the camera matched 3D model of the Scheme within 3DS Max at the same size as the digitised existing view.
- To aid in greater accuracy of real life camera settings and the production of cylindrical projection, wide angle panoramas which match the photography stitch, a plug-in programme called Vray was used. Each of the views was rendered using the Vray Rendering Engine software.
- Individual elements were rendered out using different map channels to create masks (for example mask for the digital terrain model, earthworks, overhead line equipment, fencing, shadows etc). These masks ensured each visible element of the Scheme could be independently selected when individually placed into the Adobe Photoshop file for final production.

1.7 Producing the Photomontage

1.7.1 The following describes the process of producing of photomontage:

- The JPEGs were lens corrected and then stitched into a panorama using a cylindrical projection using Adobe Photoshop.
- At this stage panoramas were checked for acceptability by the project landscape architect.
- The renders of the 3D model were superimposed onto the existing photos in Photoshop. The foreground of the existing photos visible in front of the Proposed Scheme were then carefully copied and masked to ensure the render of the 3D model sat accurately within the depth of the view. The

compositing process involved digitally removing existing features such as trees that were within the extents of the proposed development.

- The textured render of the 3D model was then further adjusted to match the resolution, colouring and saturation of the photograph captured to create an accurate impression of what the textures of the buildings and structures will look like.
- Soft landscaping was generated within the virtual model and rendered or added in Photoshop to as accurately as possibly reflect how the Scheme would look in Years 1 and 15, taking into account growth rates of any planting.

1.8 Photomontage Presentation Layouts

1.8.1 The following describes how each photomontage is presented:

- The standard Layout is A1 Landscape with a field of view generally between 75° - 90°.
- Each view is annotated with specific camera and viewpoint information and if necessary any disclaimers.
- When printing there should be no scaling or fit to page options selected as this would alter the size of the image. A high-quality print setting with a minimum resolution of 300 dpi should be used.

2 References

Ref 10B.1: Landscape Institute (2017). Photography and photomontage Advice Note 01/2011. (online) (Accessed June 2018).

Ref 10B.2: Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment 3rd Edition, London: Routledge

Ref 10B.3: Scottish Natural Heritage (2017). Visual Representation of Wind Farms. Guidance. Version 2.2.