South Norfolk District Council

Local Impact Report

East Pye Solar DCO- EN0110014

Dated 6th October 2026

1. Introduction

1.1 In line with the Planning Inspectorate's guidance on the use of AI, Microsoft Copilot was used solely to support improvements to the document's structure. The content of the Local Impact Report remains wholly officer authored and has been reviewed to ensure its accuracy.

1.2 Purpose of this Local Impact Report

1.2.1 This Local Impact Report (LIR) has been prepared by South Norfolk District Council in accordance with the Planning Act 2008, which requires local authorities to submit a written report detailing the likely impacts of a proposed Nationally Significant Infrastructure Project (NSIP) on their administrative area. The purpose of the LIR is to assist the Examining Authority by presenting an evidence-based assessment of the localised environmental, social and economic effects of the East Pye Solar Project as it relates specifically to South Norfolk.

1.2.2 The report provides an impartial evaluation of the development's anticipated benefits and harms, with particular reference to the adequacy of proposed mitigation measures and the extent to which the project aligns with relevant planning policy. While the Council recognises the national importance of renewable energy generation and associated electricity network infrastructure, it has a responsibility to ensure that the local implications of the scheme are fully and transparently understood.

1.3 Legislative and Policy Context

1.3.1 In preparing this LIR, the Council has had regard to the requirements of the Planning Act 2008 and followed the approach set out in the Department for Communities and Local Government's Guidance for the Examination of Applications for Development Consent (2015). In addition, the report has been informed by the Planning Inspectorate's Advice Note One: Local Impact Reports (2012).

1.3.2 The assessment reflects relevant national policy, including the National Planning Policy Framework (NPPF) (2026) and associated guidance and is grounded in the statutory development plan for South Norfolk, comprising the Greater Norwich Local Plan (2024) and the South Norfolk Local Plan Development Management Policies (2015). Where appropriate, reference is also made to emerging supplementary planning documents and strategies.

1.3.3 In accordance with section 104 of the Planning Act 2008, the Secretary of State's decision on the Application will be taken principally in accordance with the relevant National Policy Statements (NPSs) unless one of the statutory exceptions applies. The Council therefore recognises

that the primary policy framework for the determination of the Application is provided by NPS EN-1 (Overarching National Policy Statement for Energy) and NPS EN-3 (Renewable Energy Infrastructure), both of which establish the need for nationally significant energy infrastructure and provide the principal framework for the assessment of its impacts. The Council's assessment in this Local Impact Report has therefore been prepared having regard to those NPSs and is directed towards assisting the Examining Authority in understanding the nature, extent and significance of the local impacts arising within South Norfolk.

1.3.4 While development plan policies do not determine the Application in the same manner as a Town and Country Planning Act decision, the Council considers that the Greater Norwich Local Plan (2024), the South Norfolk Development Management Policies (2015) and relevant supplementary guidance provide important locally specific evidence regarding landscape character, heritage significance, biodiversity, environmental quality, local distinctiveness and community impacts within South Norfolk. Reference is therefore made to those documents throughout this Report insofar as they assist in identifying, describing and evaluating the significance of local impacts arising from the Proposed Development.

1.4 Scope of the Report

1.4.1 This LIR considers only those impacts expected to arise within the administrative area of South Norfolk District. The proposal site covers a significant area of the district consisting of 10 sites with cable route corridors connecting these over 2,700 acres. As such, the report focuses on environmental, heritage, landscape, ecological, amenity, socio-economic and cumulative effects as they relate to local communities, land uses, designated assets and the rural landscape.

1.4.2 The Council recognises that national need is established principally through the relevant NPSs. The LIR does not therefore assess the national need for the project or examine alternative strategic options, as these matters fall outside the remit of the local authority within the DCO process. Instead, the focus is on the extent and significance of local impacts and the adequacy of mitigation measures proposed by the applicant.

1.4.3 The remainder of this LIR is structured as follows:

- **Section 2** summarises the key local harms that should be considered throughout the Examination.
- **Section 3** summarises the proposed development and its specific components within South Norfolk.

- **Section 4** identifies other relevant NSIPs and major planning proposals in the district.
- **Section 5** outlines the applicable planning policy framework
- **Section 6** describes the local environmental, social and economic context.
- **Section 7** presents the topic-based assessment of impacts, covering heritage, landscape, ecology, noise and other relevant disciplines.
- **Section 8** sets out the Council's comments on the Draft Development Consent Order.
- **Section 9** summarises the principal issues for the Examination. provides the Council's overall conclusions.
- **Section 10** provides the Council's overall conclusions.
- **Section 11** lists supporting appendices.

2. Key Local Impacts

Heritage

2.1 The proposal involves sites containing solar panels, substations, and a BESS in a rural landscape containing numerous designated heritage assets, including listed buildings, scheduled monuments and conservation areas. The Council's Relevant Representation (Appendix D) includes detailed assessments of the harm to heritage assets across the sites, noting that the ES identifies only indirect minor adverse effects and generally negligible effects which equates to less than less than substantial harm.

2.2 The Council however disagrees with the level of harm assessed for two heritage assets, Grade II Moulton Farmhouse (1373270) and Grade II Hillside House (1050216). SNDC maintain that these should be assessed as experiencing a moderate degree of harm given the medium sensitivity of the assets and low magnitude of impact on their settings using the matrix in APP-046.

2.3 The Council also notes that historic paths and routes have not been identified as non-designated heritage assets in accordance with Policies HE5 and HE7 of the NPPF (2026). They together with dispersed designated heritage assets, which are often located in isolated positions away from settlements, form important components of the historic agricultural landscape experienced when moving through the area. Therefore, cumulative effect of the solar PV sites, project substations, national grid substation, and BESS will erode the rural character and settings of dispersed heritage assets, resulting in a meaningful reduction in their contribution to local sense of place.

Landscape and Visual Effects

2.4 The Proposed Development would result in extensive and, in a number of locations, significant adverse effects on local landscape character and on the visual and recreational experience of a well-used network of PRoWs. The present parameters permit panels up to 4.5 metres high and do not consistently provide adequate offsets from routes. Planting would soften or filter some views, particularly at distance, but would not restore the open rural context or remove the enclosure created along paths.

2.5 At the scale of the host fields and development parcels, conversion from agricultural countryside to extensive energy infrastructure would ordinarily represent a large or major change to landscape character. Planting may reinforce selected features, but it does not reverse the loss of the open rural land use.

2.6 The effects extend beyond individual field parcels. The scale and distribution of Sites 1–10 would alter the perceived character of Landscape Character Areas B1 and E2 and would be experienced from numerous routes by high-susceptibility recreational receptors.

2.7 The existing descriptions of Landscape Character Assessments B1 and E2 would no longer fully describe the affected landscape if the scheme were built at the maximum parameters. The new concentration of solar arrays, substations, BESS infrastructure, fencing and enclosing planting would become a material characteristic. This is an indicator of the scale of landscape change.

2.8 Year 15 planting should not automatically be treated as removing or materially reducing an effect where it replaces an open outlook with a vegetated corridor. Screening the infrastructure can itself increase enclosure, interrupt long views and create a tunnel effect. The resulting route experience may remain substantially changed and adverse.

2.9 The visual evidence does not consistently illustrate the reasonable worst case. Additional views are needed where PRoWs cross or closely adjoin development, together with clearer evidence of the kinetic experience. The Type 3 visualisations do not provide the level of geometric and locational certainty that would be expected where fine judgements depend on panel height, path alignment and planting position.

2.10 The district already hosts major energy and infrastructure schemes. The combined visual and landscape effects of the proposed route, together with existing and consented NSIPs, are expected to intensify the landscape harm as a result of industrial-scale infrastructure incompatible with rural character of South Norfolk district.

2.11 To support clarity, an area where additional examination or discussion may assist the Examining Authority is the landscape and visual impacts

(as set out in ‘section 6 (Landscape and Visual)’ of South Norfolk’s Relevant Representation).

2.12 Attention is also drawn to the various Town and Country Planning Act (TCPA) applications for solar farms and BESS situated nearby to the draft order limits.

Noise, Vibration and Pollution

2.13 The Council has significant concerns regarding the adequacy of the noise and vibration assessment. In particular, the absence of baseline noise monitoring limits confidence in the predicted effects, especially in quiet rural locations. The reliance on percussive piling for installation of solar panels creates risk of notable construction nuisance.

2.14 The project appears to rely entirely on percussive piling, which is a major source of noise and vibration nuisance. A justification for this approach should be provided and a geo-environmental or geotechnical investigation undertaken to confirm whether percussive piles are appropriate for site conditions. Without this information, the suitability of pile types cannot be established, and this method is not in accordance with Best Practicable Means (BPM).

2.15 Evening time noise levels are currently absent from the Noise Impact Assessment in the Environment Statement which is essential as there is a distinct drop off in noise levels in the evening in rural locations which could impact the ability of the applicant to meet their agreed noise levels. Failure to assess the noise levels in this manner, acknowledging the differing background noise levels at different times of the day, would result in the evening noise levels being emitted at a significantly higher level than the agreed background noise level limit which could result in a statutory nuisance being declared.

2.16 There is currently uncertainty and inadequacy in the information available as insufficient details of the National Grid Substation have been provided or are known at this time. As such, whilst the noise levels from the National Grid Substation have been stated in the Noise Impact Assessment to be at or below the background noise level, there is ambiguity in how this conclusion was reached.

Ecology and Biodiversity

2.17 The Council acknowledges the applicant’s commitment to Biodiversity Net Gain (BNG) and its inclusion within the DCO Requirements.

SNDC remains concerned about potential impacts on bats (notably barbastelles), County Wildlife Sites and Roadside Nature Reserves, arboricultural assets including veteran/ancient trees and ancient

woodlands. SNDC is also concerned about the potential losses as a result of decommissioning.

Cumulative Impacts

2.18 South Norfolk faces an unprecedented concentration of energy-related NSIPs, major grid reinforcements and associated infrastructure. The Council is concerned about cumulative impacts and in-combination effects across environmental, visual, heritage, ecological and socio-economic domains.

Key Issues for the Examination.

2.19 The Council identifies the following matters as most significant for the Examining Authority:

- The scale and significance of adverse landscape and visual effects;
- The level of less-than-substantial harm to heritage assets and whether public benefits justify this harm;
- The adequacy of the noise and vibration assessment, including the need for baseline monitoring and justification for piling methods;
- The sufficiency and enforceability of ecological mitigation and the justification for compensation measures;
- The scope and mitigation of cumulative effects, particularly in combination with other NSIPs;
- The suitability, clarity and enforceability of Draft DCO Requirements, including removal of any immunity from prosecution.

Overall Position of the Local Authority

2.20 South Norfolk District Council acknowledges the national importance of meeting net zero targets and large-scale renewable energy projects such as solar farms. However, based on the information presented within the application, the Council considers that the project will result in substantial localised harm, particularly in relation to heritage, landscape character, and residential amenity.

2.21 The Council's position is that these local harms must be given significant weight in the planning balance and that further work is required to refine mitigation, address evidence gaps and strengthen the Draft DCO Requirements to ensure effective protection of local communities and environmental assets.

3. Description of the Proposed Development

Overview of the Scheme

3.1 The East Pye Solar Project seeks development consent for a new 500MW solar farm in addition to associated electricity infrastructure including three 132KV substations, three 400KV substations, and a new National Grid substation alongside a Battery Energy Storage System (BESS). The proposed site extends to approximately 2,700 acres across the South Norfolk District affecting multiple parishes.

3.2 Within South Norfolk District, the proposal would introduce 28 sub-sites containing solar panels, approximately up to 4.5 metres in maximum height of rotation, together with associated cable route corridors, access tracks, works areas, temporary construction compounds and ancillary infrastructure.

Components of the Development within South Norfolk

3.3 Key elements of the project affecting South Norfolk include:

- Construction and operation of new 500MW solar panel sites and associated substations;
- Construction and operation of a new BESS;
- Construction and operation of new National Grid Substation;
- Removal or modification of existing 132kV infrastructure where required;
- Creation of temporary access routes, construction compounds and laydown areas;
- Earthworks, foundation construction and associated enabling works.
- Vegetation clearance, including removal of some hedgerows and veteran trees;
- Long-term vegetation management within the sites to maintain safety clearances.

3.4 The proposal traverses predominantly rural agricultural land, interspersed with dispersed settlements, farmsteads, heritage assets, ecological features and areas of recognised landscape sensitivity.

Construction Phase Characteristics

3.5 Construction activities are expected to include:

- Establishment of temporary compounds and access tracks;
- Foundation installation for multiple substations and the BESS;
- Erection of solar panels and driven pile ground mounts;

- Underground cabling works in certain locations;
- Removal of existing infrastructure where applicable.

3.6 Construction would occur over two-three years, with works progressing across the district. The Council asks the Examining Authority to note that the district is also host to several other NSIPs and large-scale developments, raising the potential for overlapping construction periods and associated cumulative disruption. The significance of these cumulative construction effects will depend on the extent of temporal overlap between projects and the effectiveness of proposed mitigation and coordination measures.

Operational Phase Characteristics

3.7 Once constructed, the solar panels will have a generating capacity of 500MW and will include substations that are also likely to host other renewable energy grid connections and will form a permanent feature of the local landscape. Operational activities include routine inspection, maintenance and vegetation management. No significant operational traffic is anticipated, though periodic access will be required for inspection or repair.

3.8 The height and prominence of the solar panels at approximately 4.5 metres tall will have the visual and landscape effects and impacts on the setting of heritage assets for the duration of the development. Some operational constraints, particularly relating to vegetation clearance and tree management within the various sites, will continue throughout the lifetime of the infrastructure.

Associated Infrastructure and Land Requirements

3.9 Temporary land take is required for construction compounds, access routes and materials handling areas. Permanent land requirements are required for the solar array sites, BESS site, and substation sites as well as any easements and access for maintenance.

3.10 Construction may require the alteration or temporary closure of public rights of way and minor roads. Further detail on access management and traffic impacts is expected to be secured through DCO Requirements and supporting management plans.

Relationship to Existing Infrastructure

3.10 The district hosts several major energy projects, including substations, onshore wind farm connections, solar farm connections and battery energy storage systems, as well as overhead line upgrades through the Norwich to Tilbury DCO currently awaiting recommendation by the ExA. The interaction between the proposed scheme and this existing and

emerging infrastructure base is addressed further in Section 7 of this LIR.

4. Relevant Development Proposals

Overview

4.1 South Norfolk District hosts a substantial number of NSIPs and major planning applications that are either consented, operational, under construction, or at pre-application stage. These developments provide essential context for understanding the cumulative environmental, landscape, heritage and socio-economic impacts associated with the East Pye Solar Project.

4.2 The projects listed below vary in scale and function, including major road infrastructure, solar farms, BESS, wind farm grid connections and significant residential or employment developments. Their spatial and temporal overlap with the proposed development is a key factor in the Council's assessment of cumulative effects.

Nationally Significant Infrastructure Projects

4.3 Several NSIPs within or near the district interact with the proposed overhead line corridor. These include:

- **A47 – A11 Thickthorn Junction (TRO10037):** Consent granted October 2022 and now under construction;
- **Hornsea Three Offshore Wind Farm (EN010080):** Consented December 2020; construction underway including the converter station;
- **Norwich to Tilbury Overhead Lines Project (EN020027):** Examination closed early August 2026 and is pending recommendation by the ExA;
- **Sheringham and Dudgeon Offshore Wind Farm Extensions (EN010109):** Consented April 2024 and pre-commencement surveys underway;

4.4 These NSIPs collectively form a major part of the region's transition toward renewable energy generation and transmission. Their proximity to the draft Order Limits increases the potential for cumulative impacts on landscape character, ecological resources, local amenity and construction-phase disruption.

Major Town and Country Planning Act Applications

4.5 Alongside NSIPs, the district has a high volume of significant planning applications under the TCPA, many of which are located near the corridor or associated substations. These include large residential schemes, commercial and employment hubs, solar farms, BESS installations and supporting energy infrastructure. The applications range from outline permissions to reserved matters and variations to existing consents, with many approved and others pending consideration.

4.6 Alongside this, a full list is included at Appendix C and examples include:

- Major housing and employment development west of the A140 in Long Stratton (2018/0112);
- Multiple employment, logistics and industrial phases at Ipswich Road, Keswick (2021/1034–1039);
- Numerous solar farm and BESS applications across the district (e.g., 2021/2495, 2021/2645, 2023/0617, 2023/1055).
- Grid connection infrastructure for consented NSIPs (e.g., Hornsea Three, Sheringham Shoal and Dudgeon);
- Battery storage and grid reinforcement infrastructure adjacent to Norwich Main Substation, including the 2024 substation extension;
- A broad range of residential developments across villages including Diss, Roydon, Newton Flotman, Bracon Ash, Aslacton and others.

4.7 Many of these developments introduce additional landscape change, construction activity, traffic generation and ecological pressures. When considered alongside the solar project, they illustrate cumulative capacity issues, particularly around the proposed Norwich to Tilbury Overhead Line route where multiple energy-related schemes converge.

Interaction Between the Proposed Solar Project and Other Development

4.8 The concentration of NSIPs and large-scale TCPA developments within South Norfolk is unusually high. Several projects are spatially clustered along strategic corridors or around key substations. This increases the probability of cumulative environmental effects, including:

- Intensification of energy infrastructure in sensitive landscapes;
- Combined visual impacts from multiple tall structures and extensive land use;
- Overlapping construction timeframes extending the duration of disruption for residents, businesses and transport networks;
- Increased pressure on ecological receptors, particularly where grid-related schemes interface with designated habitats.

4.9 These interactions are addressed in more detail in the topic-based assessments within Section 7 of this LIR. The breadth and scale of associated development underline the importance of a robust cumulative impact assessment for the DCO application.

Summary on Relevant Development Proposals

4.10 The volume and scale of relevant NSIPs and major TCPA applications within South Norfolk mean that the proposed East Pye Solar project does not exist in isolation. Rather, it forms part of a wider and growing body of energy and infrastructure development. Understanding this wider context is essential to assessing the significance of impacts on landscape, heritage, ecology and community amenity.

5. Relevant Planning Policies

5.1 This section summarises the national and local planning policies that inform the assessment of the East Pye Solar Project as it affects South Norfolk District. The policies listed here provide the basis for evaluating the acceptability of impacts on heritage, landscape, ecology, amenity, design and environmental quality.

5.2 Statutory Development Plan

5.2.1 The statutory development plan for South Norfolk consists of:

- **The Greater Norwich Local Plan (GNLP), adopted March 2024**, covering Broadland, South Norfolk and Norwich;
- **The South Norfolk Local Plan** – Development Management Policies (2015)**.**

- **National Planning Policy Framework (NPPF),** revised 17 August 2026

5.2.2 These documents provide the principal expression of planning objectives and local environmental sensitivities within South Norfolk and therefore remain relevant in the assessment of local impacts arising from the proposed development.

5.3 Greater Norwich Local Plan (GNLP) – Key Policies (Appendix A)

5.3.1 The GNLP establishes strategic spatial planning and environmental objectives for the district. The following policies are particularly relevant to the proposed development:

- **GNLP Policy 2 – Sustainable Communities:** Requires development to support strong, healthy communities and contribute positively to environmental quality;

- **GNLP Policy 3 – Environmental Protection and Enhancement:** Seeks to safeguard and enhance landscape character, biodiversity, natural assets and environmental quality.

5.3.2 These policies provide the basis for assessing the project's effects on environmental quality, landscape character and biodiversity and its compatibility with sustainable development objectives.

5.4 South Norfolk Local Plan (SNLP) – Development Management Policies

5.4.1 The South Norfolk Development Management Policies (2015) set out detailed criteria for assessing environmental, heritage, landscape and amenity impacts. Relevant policies include:

- DM1.4 – Environmental Quality and Local Distinctiveness;
- DM3.8 – Design Principles;
- DM3.13 – Amenity, Noise and Quality of Life;
- DM3.14 – Pollution, Health and Safety;
- DM4.4 – Natural Environmental Assets;
- DM4.5 – Landscape Character Areas and River Valleys;
- DM4.8 – Protection of Trees and Hedgerows;
- DM4.9 – Incorporating Landscape into Design;
- DM4.10 – Heritage Assets.

5.4.2 These policies are central to evaluating the effects of the proposed project on:

- The setting of heritage assets;
- Local landscape character and long views;
- Environmental quality, including noise, vibration, air and water;
- Trees, hedgerows and irreplaceable habitats;
- Residential amenity and local distinctiveness.

5.5 National Planning Policy Framework (NPPF) - National Development Management Policies

5.5.1 The NPPF (2026) introduced National Development Management Policies (NDMP's) and set out further criteria for assessing environmental, heritage, landscape and amenity impacts. Relevant policies include:

- DP3 – Key Principles for Well-Designed Places;
- DP4 – The Design Process;
- P2 – Ground Conditions;
- P3 – Living Conditions and Pollution;
- N2 – Improving the Natural Environment;

- HE5 – Assessing Effects on Heritage Assets;
- HE6 – Proposals Affecting Designated Heritage Assets;
- HE7 – Decisions on Non-Designated Heritage Assets.

5.6 Supplementary Guidance (Appendix B)

5.6.1 The following supplementary guidance is relevant to understanding local sensitivities to major energy infrastructure:

- **South Norfolk Landscape Susceptibility in Relation to Energy Generation, Storage and Transmission SPD**, adopted February 2026.

5.6.2 This SPD identifies areas within the district particularly sensitive to large-scale energy infrastructure and therefore provides important context for assessing the scheme's potential landscape and visual impacts and is appended as Appendix B.

5.7 Summary of Policy Alignment Considerations

5.7.1 Across the development plan and supplementary guidance, a consistent theme emerges of the need to protect South Norfolk's landscape character, heritage assets, biodiversity and residential amenity, while ensuring that development contributes positively to environmental quality and local distinctiveness.

5.7.2 These policies, taken together, form the basis for the topic-based assessments set out in Section 7, in which the Council evaluates how the proposed solar farm and BESS project aligns or conflicts with specific policy requirements.

6. Local Area Context

6.1 Overview of South Norfolk District

6.1.1 South Norfolk is a predominantly rural district characterised by gently undulating farmland, tributary valleys, woodland, dispersed villages, traditional market towns and an extensive network of public rights of way. The landscape is generally perceived as open and expansive, with long views across plateau farmland and river valleys. These characteristics are central to the district's sense of place and underpin its landscape sensitivity.

6.1.2 The district contains numerous designated heritage assets, including listed buildings, scheduled monuments and conservation areas. Many of

these assets are associated with historic agricultural landscapes, traditional farmsteads and small settlements. Their settings are often defined by open rural surroundings and long-distance views, which contribute significantly to their significance and local distinctiveness.

6.2 Settlement Pattern and Local Communities

6.2.1 The district is structured around several historic market towns i.e. Diss, Harleston, Loddon and Wymondham which serve as centres for employment, cultural activity, education and services. Beyond these towns, the district comprises numerous villages and hamlets, many of which feature heritage assets, rural amenities and strong community identities.

6.2.2 South Norfolk's rural communities are sensitive to change arising from large-scale infrastructure due to their reliance on high-quality landscape, local tranquillity and access to recreational assets such as walking and cycling routes. Tourism and small local businesses also form part of the local economy, benefitting from the area's environmental and cultural qualities.

6.3 Existing Infrastructure and Land Use

6.3.1 Land use across the district is dominated by agriculture, interspersed with woodland, hedgerows, isolated dwellings and small clusters of historic buildings. There is a growing concentration of energy and grid-related infrastructure throughout the district, primarily along the overhead line route from Norwich Main including wind farm grid connections, solar farm cabling routes and battery energy storage systems.

6.3.2 Significant new infrastructure has been consented or is proposed in close proximity to the draft Order Limits, including, Bloy's Grove Solar Farm (49.9MW), Wacton Road BESS (228MW), FIELD Long Stratton BESS (400MW), Tasburgh Solar Farm (15MW), Stoke Holy Cross Solar Farm (70MW) and other NSIPs and TCPAs. This contributes to a cumulative intensification of energy infrastructure in the local area.

6.4 Landscape Character

6.4.1 The proposed route intersects several South Norfolk landscape character areas, including:

- B1 Tas Tributary Farmland;
- E2 Great Moulton Plateau Farmland;

6.4.2 These areas feature open agricultural landscapes, valley landforms and broad skyscapes that are particularly susceptible to visual intrusion from industrial energy infrastructure.

6.4.3 The district hosts an extensive network of PRoW's and users of these are generally of high susceptibility because of their attention directed towards the landscape and experiences of the routes. Visual assessments should therefore address both representative views and the sequential experience of walking or riding through and between development parcels.

6.4.4 The change from an open route to one flanked by arrays, fencing, and dense mitigation planting is not merely a change in visibility; it changes scale, enclosure, light, perceived safety, tranquillity, and the relationship with the wider countryside. These effects may arise even where the development itself is partially screened from view.

6.5 Ecological and Environmental Features

6.5.1 The district hosts a range of sensitive ecological assets, including numerous ancient woodlands, veteran trees, hedgerows, watercourses, lowland fens, and grassland habitats. These features create a mosaic of valuable ecological habitats that are potentially vulnerable to hydrological disturbance, vegetation loss and other construction-related impacts.

6.6 Socio-Economic Context

6.6.1 Tourism, leisure, and heritage contribute to the district's economy, with attractions such as the Waveney Valley, Boudicca Way, museums, churches and extensive public footpaths drawing visitors each year. Construction-phase disruption and long-term changes in landscape character may influence visitor behaviour and local business performance.

6.6.2 The district is also shaped by ongoing housing and employment growth, reflected in numerous major planning applications. These developments contribute to economic vitality but also increase sensitivity to additional cumulative construction impacts associated with proposed sites for solar panels, BESS, project substations, and National Grid substation

6.7 Summary of Local Area Context

6.6.1 South Norfolk is a distinctive rural district with high-value landscapes, sensitive ecological assets, historic settlements and communities that rely on environmental quality for wellbeing, recreation and economic activity. The district already accommodates significant energy-related infrastructure, and the addition of the proposed solar development along with substations and a BESS introduces further environmental and cumulative considerations.

6.6.2 The local context forms the baseline for the detailed topic-based assessments presented in Section 7.

7. Topic-Based Assessment of Impacts

7.1 Heritage Assets

Policy Context

7.1.1 Government Guidance on good design for NSIPs states that design principles should respond positively to the four elements – climate, people, place and value.

7.1.2 Under Sections 66 and 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990, decision-makers must give special regard to preserving listed buildings and their settings as well as conservation areas. HE6 of the National Planning Policy Framework (NPPF) requires that substantial weight be given to the asset's conservation, irrespective of whether any potential effect amounts to positive effect, harm, substantial harm, or total loss of significance. While the harm identified is not substantial, it nevertheless should carry considerable importance and weight in the decision-making process, as required by Sections 66 and 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990. Accordingly, the Council considers that any identified harm to the significance of heritage assets, including harm arising through changes to setting, should be given considerable importance and weight when undertaking the overall planning balance.

7.1.3 Policy DM4.10 of the South Norfolk Development Management Plan is also of relevance however, where there are any inconsistencies and areas of conflict with the more recent revised NPPF (2026), greater weight should be afforded to the latter.

Baseline

7.1.4 Beyond their immediate settings the identified designated heritage assets are situated within a much wider but still very localised historic environment described in the South Norfolk and High Suffolk Claylands National Character Area with five sub areas affected. These have been carried through to character assessments that have been adopted as part of the South Norfolk Design Code (2026). Common character attributes of the areas include small village settlements and hamlets with more isolated scattered farm buildings and labourers' cottages. Within the wider setting and context, it is the relationship between these historic buildings within their surrounding agricultural landscape as well as the historic connections through trackways and footpaths that will be impacted upon and affect how the character of the local area is experienced.

7.1.5 The areas affected are largely characterised by layers of historic rural landscape and agricultural development including ancient and more modern managed woodland, established hedgerows and trees, and a

network of historic trackways and paths between settlements and dwellings. As identified in the descriptions of heritage assets many dwellings are closely associated with their wider rural surroundings, both through the dwellings being built for and lived in by people who worked the fields and managed the surrounding rural landscape or being constructed from local natural materials drawn from the surrounding landscapes with localised vernacular design character.

7.1.6 Within the study area, the Environmental Statement identifies:

- 1 Scheduled Monument;
- 46 listed buildings;
- 3 conservation areas;
- Open, rural settings and long views strongly contribute to the significance of many of these assets.

Construction Phase Impacts

7.1.7 Construction activity, including temporary access routes, vegetation removal and compound installation, will introduce noise, movement and visual disruption. This is likely to erode the rural setting of heritage assets close to the Order Limits. It is also noted that alterations are required to landscaping within the settlement of Saxlingham Nethergate for the commissioning phase and transport movements. Some of this landscaping is associated with the grade II* Saxlingham Rectory by Sir John Soane, which is of high significance.

7.1.8 With such a high-status house, the landscaping at the entrance point would be part of the designed setting. Damage or harm to the landscaping within the conservation area and to the front by heavy vehicles navigating a rural village road would likely result in a loss of significance although this is likely to be temporary until the landscaping is reestablished.

Operational Impacts

7.1.9 It is agreed that there are no direct impacts to designated heritage assets, however the proposals will have an indirect impact on various designated heritage assets through changes to their setting which affects how the settings contribute to the overall significance of the heritage assets and which can be considered harmful.

7.1.10 It is agreed that there will not be any substantial harm, however in some cases the harm has been identified as being moderate adverse and significant. The Council has set out in its relevant representation where it considers there to be a higher degree of harm than that identified in the EIA and which should be taken into consideration and given considerable importance and weight in the planning balance.

7.1.11 The introduction of solar panels, associated substations, and fencing over a substantial area of countryside will introduce an industrial and alien character to a wide area of countryside. This will result in a harmful impact to the rural and agricultural character of the local area and the sense of place that has evolved over time and that is also contributed to by the heritage assets that are situated within it.

7.1.12 The countryside is experienced through a network of footpaths and trackways, many of which are long established and can be considered part of the historic environment, and which link designated historic assets, in many cases giving public access and contributing to views of historic assets within their wider setting and how they are experienced.

7.1.13 The applicant has considered and proposed ways in which the impact of the proposals on the setting of designated heritage assets can be mitigated through setbacks from listed buildings and conservation areas, removal of panels from areas closely associated with heritage assets and where views would be affected, and landscape planting to screen views to and from assets and the solar panels.

7.1.14 As set out in the relevant representation, these measures do not entirely remove harm, or in some cases where landscape planting as screening is proposed, result in harm through removing views and the ability to appreciate assets within their wider settings. This includes how they contribute to the wider character of the local environment, including views from public footpaths and bridleways used by local people for recreation and to move between isolated dwellings and villages.

7.1.15 The ability to experience the countryside including the heritage assets within it is important, including for the health and well-being of the people who live in the area or use the local area for recreation and attach great importance to a sense of place. This will be adversely affected by seeing overly prominent fields of solar panels due to the extent, coverage and size of the panels being visually dominant within their surroundings. As well as introducing features which are alien and of incongruous character, enclosing areas and changing existing views will also have an adverse impact including how the historic attributes which contribute to the sense of place are experienced.

7.1.16 NPS EN-3 2.10.63 states “Applicants should set out a range of options based on different panel numbers, types and layouts with and without storage.” The proposals should also be sensitive to the wider historic environment characteristics of the area and the contribution that the various heritage assets make to this character so as to ensure more sensitive design solutions can be achieved. This is especially important in terms of the relationship of heritage assets to the historic routes and trackways which are now footpaths and bridleways or their situation within, and contribution to, the wider historic landscape character and

environment. It is considered by the Council that the Applicant has failed to demonstrate a range of options as required.

7.1.17 The proposals seek flexibility with maximum design parameters to apply across the scheme including the height of solar panels to be 4.5m tilting panels. This is sought to apply across all areas whether or not they are within the setting of designated heritage assets (both listed building and conservation areas). The Council is concerned that the assessment of effects has been undertaken on the basis of parameters which permit materially different outcomes at detailed design stage. The ExA should therefore satisfy itself that the reasonable worst case has been properly assessed and that any mitigation relied upon in the assessment is capable of being secured through the DCO.

7.1.18 Lower height panels would be closer in height to historic hedgerows (typically 3m for example) and therefore lower height panels should be a consideration within the design parameters where they are in more sensitive locations. Setting parameters for lower height panels in certain locations at least should be part of a package of measures to reduce the overall level of impact and resulting harm though better preserving the setting of heritage assets rather than relying solely on landscape mitigation which can in itself be harmful. Areas where lower panels would be more appropriate should be identified on a parameters plan, at least where this would be the preferable option in terms of design flexibility so that it can inform reserved matters at a later stage of approval.

Cumulative Impacts

7.1.19 Cumulative impacts arise from the interaction between the proposed solar panel sites, BESS, and substations with other major energy and grid-related developments, including solar farms, BESS schemes and substations. Combined, these effects intensify the perceived industrialisation of the rural landscape and affects the sense of place and character of the area in which these heritage assets are experienced within.

Mitigation and Residual Effects

7.1.20 SNDC would welcome more comprehensive mitigation proposals that seek to result in the lowest level of impact achievable through appropriate design measures such as lowering solar panels heights or omitting some areas of panels to maintain views and historic connections between historic routes and historic building and settlements, and also looking for opportunities for landscape planting to be consistent with historic landscape planting so that it does in itself not appear incongruous but contributes positively and enhances landscape character, including those elements which are historic. The Council notes that even where harm falls below the threshold of substantial harm (as set out in the application documents), such harm should nevertheless be afforded considerable

importance and weight in the planning balance. Accordingly, the Council considers that any identified harm to the significance of heritage assets, whether arising from direct effects or changes to setting, should be given considerable importance and weight when undertaking the overall planning balance.

7.2 Landscape and Visual Impact

Policy Context

7.2.1 Relevant policies include GNLP Policy 3 and SNLP DM4.5, DM4.8 and DM4.9, which collectively require protection of landscape character, trees and hedgerows and the integration of development into the landscape. These policies are broadly consistent with the revised NPPF whereby Landscape character protection remains aligned but should be applied proportionately and with recognition that landscapes can accommodate appropriately designed change. South Norfolk District Council also recently adopted in February 2026 the Landscape Susceptibility SPD, included in Appendix B, in relation to renewable energy and electricity transmission projects which is a material planning consideration.

7.2.2 NPPF Policy N2 requires proposals to consider landscape character and the natural beauty of the countryside, conserve and enhance valued natural features where possible, and use appropriate landscaping to integrate development. Policy TR8 also requires development to protect and enhance the PRoW network and to take opportunities to improve route quality and countryside access. The design policies require a context-led response and safe, inclusive public space and movement routes.

Baseline

7.2.3 The route crosses several sensitive landscape character areas, including:

- Tas Tributary Farmland (B1);
- Great Moulton Plateau Farmland (E2);

These areas are characterised by open views, skyline prominence and rural tranquillity.

7.2.4 Although viewpoint locations were agreed with the Landscape Officer, the submitted set does not adequately illustrate all reasonable worst-case effects. More viewpoints should have been located where PRoWs pass through or directly alongside arrays, particularly where development would occur on both sides. Notable omissions include WA- FP43 and Via Beata north of Site 2C and School Road/Boudicca Way at Site 5. This reduces confidence in conclusions about route-based and residual effects.

7.2.5 The visualisations are understood to be Type 3 rather than Type 4. Type 3 material can assist assessment, but it is not adequate on its own where the judgement depends on precise relationships between the route, maximum panel height, proposed planting and topography. There is therefore a risk that the visual effects are greater than portrayed.

7.2.6 At VL1/Site 9, there appears to be a conflict between AVR2 and AVR3: the panel height does not appear consistent with the maximum parameter block and proposed woodland may be shown on the wrong side of the PRoW. It is also unclear whether the relevant AVR images show the 4.5 m maximum PV height. The applicant should provide a schedule for every visualisation confirming the modelled panel height.

7.2.7 The Council consider that the provided visualisations are inadequate in assessing the full impact of the project and propose the below additional points for further investigation and evidence to be submitted as part of the examination:

- BESS VL2, VL3, and VL4: Photo sheets and visualisations;
- The 4-metre acoustic barrier at the BESS has not been adequately included in the LVIA assessment or visual material;
- The interaction between the realigned pylon line (Works 5), required tree-free easement, and proposed screening at Site 1B is unclear;
- The purpose and landscape effects of CRC 6 are unclear now that Site 6 is retained in agricultural use;
- The Environmental Measured ID references on the Green Infrastructure Strategy Plans are not clearly explained in the OLEMP;
- The AIA description of ‘partial removal’ does not quantify the length, area, or proportion removed from each affected tree group and hedgerow.

Construction Impacts

7.2.8 Construction compounds, access tracks, vegetation removal and the movement of large machinery will introduce temporary but notable landscape disruption along the route.

Operational Impacts

7.2.9 Mitigation that screens solar panels may also block long views and should not be credited as restoring baseline visual amenity. At Year 15, the infrastructure may become less visible, but the open rural outlook will remain lost.

7.2.10 Both 3 m and 4.5 m arrays would be large and potentially overwhelming when experienced at close range by walkers. The benefit of a 3 m limit is most material in middle- and longer-distance views: a lower array can be more effectively filtered by existing and proposed hedgerows, including in winter, and is less likely to project above boundary vegetation or appear on higher ground.

7.2.11 The planting strategy should respond to local pattern rather than apply continuous linear tree belts as a generic screen. New belts can appear artificial, obstruct long views and increase enclosure. Hedgerows with occasional trees should generally be used where they reflect field boundaries. Where a more substantial screen is justified and adequate land is available, small woodland or coppice blocks with irregular, organic edges are more likely to integrate with local character than uniform strips. Planting should filter and integrate the development without unnecessarily enclosing routes or fields that contain no development.

7.2.12 As set out in the Outline Landscape and Ecological Management Plan (OLEMP), a 75% or 80% planting establishment target is too low where planting is relied upon to provide necessary screening or filtering. A minimum 90% successful establishment threshold should be secured, with timely replacement and an outcome-based obligation to achieve the intended density, height and continuity.

7.2.13 Furthermore, maintaining hedgerows at 3.5m would not reliably screen panels permitted up to 4.5m. This reinforces the need for a 3m panel-height limit in the identified fields and for the hedge specification to match the claimed visual outcome. Management of these should retain selected views and avoid continuous high hedges or tree belts beside PRoWs where these would create a tunnel effect. Route safety, seasonal light and perceived enclosure should form part of detailed landscape approval.

7.2.14 The Council notes that the South Norfolk Landscape Susceptibility in Relation to Energy Generation, Storage and Transmission SPD does not impose an automatic prohibition on development. Rather, it is a design and assessment tool intended to inform the siting, layout and design of energy infrastructure. Applied to the East Pye Solar Project, the SPD supports an approach which seeks to utilise lower and more enclosed fields, avoid arrays on higher and route-sensitive land, minimise panel heights where practicable, and ensure that substations and BESS infrastructure are sited and designed to reduce their prominence. The SPD also supports the use of locally characteristic landscape treatments, including hedgerows, hedgerow trees and organically shaped woodland blocks, whilst avoiding mitigation that unnecessarily blocks long-distance views, increases enclosure or creates tunnel effects along public rights of way.

7.2.15 The conclusion that cable route corridors (CRCs) would have no residual landscape or visual effects depends on successful reinstatement. The DCO and OLEMP should confirm whether the same planting type and alignment can be restored over each CRC, identify any restrictions on deep-rooting vegetation, and secure an alternative locally appropriate solution where exact reinstatement is not possible.

Cumulative Landscape Effects

7.2.16 The proposed scheme forms part of a wider cluster of energy infrastructure within the South Norfolk district with connections along the overhead line routes from Norwich Main. When combined, these developments result in substantial cumulative landscape change and industrialisation of a rural setting. The significant adverse effects identified for East Pye would remain and, in relation to Landscape Character Areas B1 and E2, the perceived increase in human and infrastructural influence would be reinforced by the wider concentration of energy development.

7.2.17 The Council also considers that cumulative effects should be assessed by reference to the different pathways through which such effects may arise. In particular, distinction should be made between operational cumulative effects arising from the long-term presence of multiple energy infrastructure projects within the landscape, construction cumulative effects arising from overlapping construction programmes and associated disruption, and the cumulative experience of users of the public rights of way network where multiple schemes may be experienced sequentially across a wider area. Such distinctions assist in understanding the full extent of cumulative effects on landscape character, visual amenity and the experience of the countryside.

Residual Effects

7.2.18 Residual adverse effects on landscape character and visual amenity are expected to remain significant, even after mitigation. The Council's concern is not limited to the visual visibility of infrastructure. Rather, it extends to the fundamental change in the character, appreciation and experiential qualities of the affected landscape, including changes to openness, tranquillity, enclosure, long-distance views and the way in which the countryside is experienced by residents and users of the public rights of way network.

7.3 Noise, Vibration and Pollution

Policy Context

7.3.1 Key policies include SNLP DM3.13 (amenity, noise and quality of life) and DM3.14 (pollution, health and safety). These policies are relatively consistent with the revised NPPF in respect of protecting residential amenity however, assessments of harms and mitigation have a degree of change in the NPPF. As such, Policies P2 and P3 of the NPPF (2026) are of relevance when assessing pollution and amenity.

Baseline Conditions

7.3.2 The district includes many quiet rural areas with low ambient noise levels. The absence of evening background noise monitoring in the ES makes it

difficult to quantify impacts accurately. In considering the nature of the rural locations for the proposal sites, these are often dark and naturally lit during the day, offering dark skies at night for residential enjoyment and wildlife.

Construction Impacts

7.3.3 The ES relies on percussive piling for the installation of the solar panels without geotechnical justification. This method generates substantial noise and vibration.

Operational Impacts

7.3.4 In the absence of sufficient information regarding the National Grid Substation and assessment of evening time background noise levels, the operational impacts arising from the BESS, National Grid Substation, and all Project Substations may have a detrimental noise effect on amenity given the quiet and tranquil rural location of the Project.

7.3.5 The ES classifies all the proposal sites as E2 following the GN01/26 Avoidance of Obtrusive Light guidance however, given the isolated and rural nature of the district, a significant portion of the site could be classified as E1. As such, lighting schemes should be designed as worst case scenario in E1 and should use 2,700K lights to protect the dark skies for amenity and ecological conservation rather than 3,000K lighting.

Residual Effects

7.3.6 Given incomplete assessments and uncertainties around piling methods and operational noise generated by components of the Project, on the basis of the information currently available, the Council cannot conclude that the development complies with SNLP noise and pollution policies nor the NPPF (2026). Residual adverse impacts remain possible.

7.3.7 The Council therefore consider that further information is required to assess the Noise impacts of the Project and these were set out in the submitted Relevant Representation, attached in Appendix D.

7.4 Ecology and Biodiversity

Policy Context

7.4.1 Relevant policies include EN3, NPPF (Policies CC1, F8, N2, N3, N6), GNLP Policy 3 and SNLP DM4.4, which require developers to safeguard ecological interests and deliver biodiversity enhancements. The applicant has committed to meeting Biodiversity Net Gain (BNG) obligations. The local plan policies are broadly consistent with the NPPF with respect to protection and enhancement of designated sites, biodiversity, and valued

open spaces aligned. Statutory habitats and biodiversity duties operate in addition to policy protection.

International and Nationally Designated Sites

7.4.2 Natural England (NSIP Relevant Representations Template) have agreed with the conclusions of the Shadow Habitats Regulations Assessment [APP-7.25] – subject to securing measures there will be no significant adverse effect. SNDC defers to Natural England with regards to potential impacts on internationally designated sites.

County Wildlife Sites

7.4.3 The proposal potentially affects 2 CWS located within the order limits and 5 CWS located immediately adjacent to the order limits. The CRC will be constructed beneath Fritton Grange Meadows CWS and Lower Spring Wood CWS (and adjacent to ancient hedge H52) via Horizontal Directional Drilling (HDD).

7.4.4 SNDC does not currently agree with the ES with regard to construction impacts. The reasons for designating the CWS should be considered by the Applicant on a site-by-site basis (with copies of the citations provided for examination), so that the proposal can demonstrate that all potential impact pathways have been considered.

Roadside Nature Reserves

7.4.5 Four Roadside Nature Reserves (RNRs) are partially located within the limits, SNDC is concerned that RNRs are not specifically mentioned within the documents secured by the DCO and consideration has not been given to vehicles overrunning the RNRs which is a risk given the RNRs are located on single track roads. SNDC has requested that further consideration is given to the potential impacts on RNRs and any unidentified RNRs.

Irreplaceable Habitat: Lowland Fen

7.4.6 Lowland Fen is present within the Fritton Meadows CWS and SNDC notes that an additional assessment is being undertaken by the Applicant regarding the potential for thermal effects on the lowland fen during operation which may affect this conclusion. SNDC defer to the Environment Agency in this matter.

Arboriculture

7.4.7 SNDC have several concerns about the arboricultural impact of this scheme including on potentially unidentified ancient woodland and veteran trees. There remains potential to impact irreplaceable habitat which will not be resolved until the detailed design stage. The AIA also

fails to identify the location of all trees within the order limits so the scale of potential impacts on trees has not been adequately considered. SNDC has also requested that notable trees/overmature trees are treated as veterans as they will likely become future veterans given the 60-year lifespan of the proposed development.

Habitats and Biodiversity Net Gain (BNG)

7.4.8 The proposal will deliver at least 44.22% biodiversity net gain in habitat units, a minimum of 34.71% biodiversity net gain in hedgerow units and a minimum of 17.52% biodiversity net gain in watercourse. SNDC is seeking to secure these gains within the DCO as these will have a signifying benefit for biodiversity in the area. SNDC is however concerned that at the end of the scheme's lifespan these habitats will be returned to arable use. SNDC considers that this potential loss will have a significant negative impact on a host of species including bats, badgers, newts and birds. SNDC is keen to avoid this and is seeking commitment to retain habitats where possible. The Council therefore seeks assurance that the biodiversity gains relied upon in the assessment are adequately secured through the DCO and are not capable of falling materially below those presented within the application.

Species

7.2.9 The baseline surveys identified the presence of important species including barbastelle bats, badgers (and larger mammals) and skylarks. The proposal could have negative impacts on the movement and foraging of these species, and on setts and nesting (skylark)

7.5 Cumulative Impacts

7.5.1 The cumulative impact of this project with other NSIPs, solar farms, BESS schemes and grid reinforcements is a major concern. South Norfolk is hosting a substantial concentration of large-scale infrastructure.

7.5.2 A strategic approach to the implementation of the energy infrastructure projects in the area would align with strategic planning and would avoid piecemeal harm. However, in the absence of any such measures, the cumulative burden on South Norfolk is inconsistent with sustainable development and should not be underestimated.

Landscape and Heritage Cumulative Effects

7.5.3 Multiple solar PV sites, project substations, National Grid substation, and BESS alongside many other energy schemes will create a heavily industrialised rural environment and significantly alter the experiences and sense of place in the setting of heritage assets.

Ecological Cumulative Effects

7.5.4 Multiple projects increase pressure on habitats, hydrological systems and species, with overlapping works creating a risk of incremental degradation.

Community and Socio-Economic Cumulative Effects

7.5.5 Extended construction periods and overlapping project timelines will exacerbate disruption to residents, road networks and local businesses.

7.6 Socio-Economic and Community Effects

Overview

7.6.1 The Council recognises the essential national role of generating renewable energy including solar and the need to reinforce the National Grid with an additional substation. However, localised harms are substantive.

Tourism and Recreation

7.6.2 The district's tourism offer i.e. market towns, historic churches, Waveney Valley, Boudicca Way, museums and walking routes may experience reduced visitor appeal due to landscape and construction impacts.

Local Business and Community Impacts

7.6.3 Disruption during construction and changes to landscape character could affect hospitality, retail and cultural sectors. The Council also notes that despite hosting extensive infrastructure, there is no direct local benefit.

The widespread nature and scale of residual harms gives rise to the potential for in-combination effects, including through the adverse consequences of any proposed mitigation (e.g. effects of landscape mitigation on the setting of heritage assets as raised in sections 8.1 and 8.2 above). In order to assist the Examining Authority, the Council has prepared the below site-specific recommendations to reduce the level of harm for the project.

7.7 Site-Specific Considerations

7.7.1 Site 1

a) Limit PV to 3m in the field east of GM-FP18. The existing hedgerow would not provide meaningful filtering of a 4.5m array, particularly in winter.
b) Provide at least a 10m offset from GM-FP18, where panels would otherwise closely adjoin the route without planting mitigation.
c) Remove the field west of the National Grid Substation to preserve an open rural outlook to the west of GM-FP18/Narrowgate Way and GM-FP14. Consider removal of Site 1A

as the clearest means of retaining the outlook from the memorial bench at the GM-FP18/GM-FP14 junction.

d) Limit PV to 3m in the northern field of Site 1B to mitigate impact on the views from VL4-Site1.
e) The rural context of GM-FP14 would be substantially lost through the combined effect of panels, the substation and enclosing planting.
f) The LVIA appropriately identifies a significant effect at local VL2/Site1, but the effect at VP4/Site1 should also be significant because of the introduction of industrial/energy detracting features.
g) Effects on GM-FP14, GM-FP19 and GM-FP18 should not be shown as materially diminishing at Year 15 merely because planting establishes. No additional planting is proposed along GM-FP18, so its close-range effect would remain. Along GM-FP19, the tree belt would itself create enclosure, reduce glimpses into the countryside and make the route darker, particularly in winter.
h) Clarify how the pylon-line easement, within which tree planting may be restricted, affects the deliverability of screening at Site 1B.

7.7.2 BESS and National Grid Substation Site

a) Provide the missing photo sheets and visualisations for VLs 2, 3 and 4.
b) Assess the potential 4m acoustic barrier as part of the reasonable worst case. From TSM-FP3 and GM-FP19 it would be an overtly urban feature, visible in winter through planting, increasing enclosure and diminishing tranquillity.
c) The proposed linear tree belt may obscure lower BESS and substation elements but is not characteristic of the local landscape and would itself have an adverse effect on local character.
d) The tree belt would not wholly screen structures up to 13m high. An urban and infrastructural influence would remain at Year 15.
e) The local residual effect should remain significant and adverse because the loss of openness and rural context is not reversed by screening.
f) The PRoW assessment should not treat the effect on TSM-FP3 as materially diminishing at Year 15 where the route experience changes permanently from open to enclosed.

7.7.3 Site 2

a) Add assessment viewpoints on WA-FP43 and Via Beata north of Site 2C; their omission leaves an important gap in the evidence.
b) Replace uniform tree belts around Sites 2B and 2C with hedgerows and hedgerow trees, or locally appropriate woodland/coppice blocks where adequate space exists.
c) Identify significant adverse visual effects at VPLs 2 and 4 as a result of increased enclosure and loss of rural vistas.
d) Limit panels to 3m in Sites 2A and 2B to reduce effects on TSM-RB6, TSM-BR9, TSM-FP8, TSM-BR7 and motorists on the A140.
e) Treat the effect on TSM-FP8/VL6a as significant and adverse at Year 15: no planting mitigation is proposed, and the array would remain visible to the north along the route.
f) Do not assume that the effects on WA-RB31, TSM-RB6 and TSM-BR9 materially diminish at Year 15 where planting replaces open views with enclosure.

g) Assess WA-FP43 and TSM-BR7; both are likely to experience significant adverse effects from the change in open/undeveloped rural setting. PM-FP6 is omitted but is unlikely to experience a significant effect along its full length; the effect would be concentrated near the site.

7.7.4 Site 3

a) The relatively limited PRoW network reduces the number of affected receptors, but the LVIA identifies a significant adverse effect at VL4/Site3 adjoining the site.
b) Replace the proposed tree belt along HP-FP28 with a more characteristic hedgerow and hedgerow trees, and limit PV to 3m so that this treatment can provide useful filtering.
c) Remove the PV area west of HP-FP25 to preserve an open outlook on one side of the footpath and avoid compromising its entire setting.
d) Treat effects on HP-FP25 and HP-FP28 as major and adverse at Year 15 at the local route scale. Screening panels do not reinstate the lost open rural visual amenity.

7.7.5 Site 4

a) Clarify the function of the proposed community space and how it would be accessed; the current plan does not appear to show new public access.
b) Limit PV to 3m in the southern fields of Site 4A and the southern field of Site 4B adjoining LS-FP3.
c) In addition to effects already identified as significant, VLs 3 and 10/Site4 should be treated as significant because of the loss of rural vistas.
d) Provide organic-shaped woodland planting south of Site 4B, along the northern boundary of the proposed community space, rather than a uniform/linear block, to reflect local character and filter views from the south.
e) Effects on LS-FP3 and LS-FP4 should not be treated as materially diminishing solely because planting matures. Removing development east of the footpath would preserve an element of rural openness and would be an effective means of reducing harm.

7.7.6 Site 5

a) Add a representative view from School Road/Boudicca Way. The site visits confirmed visibility through gaps in the hedge and likely greater winter visibility.
b) At VL6/Site5, provide a continuous hedgerow or understorey component; trees within a hedgerow alone would not provide sufficient low-level filtering. Limit the relevant PV to 3m.
c) Limit PV to 3m throughout Site 5A and in the eastern part of Site 5B to reduce effects on MO-FP5 and MO-RB4 and respond to the higher land in part of Site 5A. A 3m limit is also recommended beside The Street to retain more of the lane's rural context.
d) Replace tree belts with hedgerows and hedgerow trees or use locally characteristic coppice/woodland of organic form in undeveloped parts of Site 5B.
e) VLs 1, 4 and 6/Site5 should also be treated as significant adverse effects because the LVIA underplays the loss of rural openness.
f) The effects on MO-FP11 and MO-FP5 should not be treated as materially diminishing at Year 15 where openness remains lost. No effect is expected on MO-FP9 because

development has been removed from its parcel. MO-RB4 should be assessed; significant effects are likely over part, but not the whole, of the route.

7.7.7 Site 6

a) Explain why CRC 6 is required when Site 6 is no longer proposed for solar development and is to remain agricultural.
b) APP-199 indicates that CRC 6 requires removal of planting. If there is no associated development need, the hedgerow removal should be deleted from the scheme.

7.7.8 Site 7

a) Remove development from the Site 7C field between HP-FP2 and HP-BR30/Pymar's Lane. It occupies high ground and is prominent from the north, including SN-FP25/VP3. The PRoW assessment identifies a moderate adverse effect, which is significant under the applicant's stated terminology.
b) Remove development from the southern fields of Site 7D, north (following field pattern) and south of SN-FP12, to avoid enclosing the footpath on both sides and losing its rural vista.
c) Remove development from Site 7F east of SN-FP10 and north of SN-FP27 to retain an open rural outlook from both routes.
d) Limit PV to 3m in the northern field of Site 7D beside SN-FP13, the southern field of Site 7F affecting VL15/HP-FP3, Sites 7G and 7H affecting Bussey's Loke, Site 7K beside VL13, and Site 7A affecting Boudicca Way.
e) Remove PV from the northern part of Site 7K to preserve the open rural context of SH-FP21.
f) The assessment of Boudicca Way is not sufficiently representative. It relies heavily on VL1/Site7 south of Site 7A, which itself results in a significant adverse effect at Year 15. The effect at VL8/Site7 should be higher than assessed and should remain significant and adverse because of the introduction of extensive human influence into a rural route experience.
g) Do not assume effects on SN-FP10, SN-FP12, SN-FP13 and SN-FP27 materially diminish at Year 15. Enclosure and infrastructural influence would remain even where planting screens the panels.
h) Site 7A occupies higher ground and is visually prominent. Its significant adverse effect at VL1/Site7 is particularly important because the receptor is on the long-distance Boudicca Way.

7.7.9 Site 8

a) Delete proposed trees along Market Lane and north of SH-FP22 where there is no development in the field, so that existing open vistas are retained.
b) Limit PV to 3m across Site 8A to enable hedgerows and trees to provide more effective filtering.
c) Remove PV east of SH-FP19 to preserve open views on at least one side of the footpath. Remove PV from the elevated and visually prominent part of Site 8A.
d) Treat the effects on SH-FP22 and SH-FP19 as remaining adverse at Year 15. The routes would become more enclosed, and this fundamental change is not removed by mature planting.

7.7.10 Site 9

a) Development is generally better accommodated because the site is enclosed and the west side of BR-FP6 remains rural.
b) Delete the proposed hedgerow across the undeveloped field. It is unnecessary for screening and would introduce avoidable enclosure and loss of an open vista.

7.7.11 Site 10

a) This site is comparatively better able to accommodate development because public access is more limited than at several other sites.
b) Limit PV to 3m in Site 10A and the southern fields of Site 10B to reduce effects on Wash Lane.
c) Do not assume the effect on Wash Lane materially diminishes at Year 15. The proposed planting would itself transform the lane into a more enclosed route.

8. Consideration of the Draft Development Consent Order (DCO)

8.1 Overview

8.1.1 South Norfolk District Council has reviewed the Draft Development Consent Order (DCO) accompanying the East Pye Solar project and has identified several areas of concern relating to the clarity, enforceability and completeness of the proposed Requirements. These matters have been raised previously in the Council's Relevant Representation and Statement of Common Ground discussions are ongoing.

8.1.2 The Council recognises that a clear and comprehensive set of Requirements is essential to ensuring that the construction and operation of this nationally significant infrastructure project can be appropriately controlled and that residual impacts on local communities and the environment are minimised.

8.2 Governance and Local Government Reform

8.2.1 The Council notes that proposals for local government reorganisation affecting Norfolk have been subject to change and are currently on hold. While the Council does not consider local government reform to be an examination issue in itself, it considers it important that the Draft DCO is drafted in a manner which ensures that all Requirements remain clear, operable and enforceable throughout the lifetime of the development, notwithstanding any future changes to local government structures or administrative arrangements.

8.2.2 To ensure continuity, resilience and future-proofing, the Council advises that the DCO Requirements should clearly specify the Local Planning Authority (LPA) as the discharging authority for all conditions. This approach would ensure that, regardless of structural changes to local

governance, the appropriate statutory body retains control over post-consent compliance mechanisms.

8.2.3 In addition, certain Requirements, particularly those relating to heritage, archaeology or environmental matters, should explicitly identify relevant statutory consultees (such as Historic England or the Historic Environment Service) to ensure that specialist advice is properly integrated into the discharge process.

8.3 Missing or Incomplete Requirements

8.3.1 The Council considers that a number of provisions within the draft DCO require further scrutiny to ensure that environmental mitigation relied upon throughout the application is capable of being effectively secured and enforced. Particular consideration should be given to the adequacy of:

- Requirement 5 (Detailed Design Approval)
- Requirement 7 (Landscape and Ecology Management Plan)
- Requirement 9 (Biodiversity Net Gain)
- Requirement 13 (Construction and Environmental Management Plan)
- Requirement 21 (Decommissioning and Restoration)

The Council also raise that there are no requirements to secure:

- Noise verification programme to monitor operational noise;

8.3.2 The Council is also concerned that Article 7 (Defence to Proceedings in Respect of Statutory Nuisance) may have implications for the protection of local communities from construction and operational impacts and considers that the necessity and scope of that provision should be carefully examined. Where mitigation measures are relied upon to reduce identified adverse effects, the Council considers that the DCO should secure clear, outcome-based obligations rather than relying solely upon the submission of management plans for future approval.

8.4 Summary of comments on the Draft DCO

8.4.1 In summary, the Council considers that the Draft DCO, in its current form, does not yet provide a sufficiently clear, enforceable or comprehensive framework for managing the environmental and community impacts of the project. Strengthening of Requirements and recognition of governance changes are all necessary to ensure that impacts are appropriately controlled throughout the lifecycle of the development.

9. Summary of Principal Issues for the Examination

Overview

9.1 South Norfolk District Council has prepared this LIR to assist the Examining Authority in understanding the localised effects of the East Pye Solar Project within the district. The project includes a 500mW solar farm, a Battery Energy Storage System 'BESS', up to three 132kV substations, up to three 400kV substations for grid connection infrastructure, and a new National Grid substation.

9.2 While the Council recognises the national need to support proposals for renewable energy and the contributions this would make towards meeting the UK's commitment to achieve net zero carbon emissions by 2050, the proposal gives rise to significant environmental, landscape, heritage and amenity impacts at the local level. These impacts and the adequacy of proposed mitigation form the core of this LIR.

9.3 South Norfolk District Council has identified several key issues that require particular attention during the Examination of the East Pye Solar Project. These issues represent the matters of greatest local significance, where impacts are potentially substantial and where further clarification, mitigation or amendments to the Requirements in the Draft DCO are necessary to ensure appropriate protection of the district's environment, heritage, communities and infrastructure.

Landscape and Visual Harm

9.4 The proposed introduction of sites for 4.5 metre rotating solar panels, BESS, substations, acoustic barriers, and associated electrical infrastructure within South Norfolk will lead to major changes in the district's rural character. The open and gently undulating landscape allows for long-distance views in which these sites will be highly prominent. The cumulative presence of other infrastructure e.g. existing pylons, substations, solar farms and BESS sites intensifies perceived industrialisation.

9.5 Particular concern arises from:

- The removal of vegetation including hedgerows and veteran trees (irreplaceable habitats under the NPPF);
- Potential planting and mitigation to lead to harmful impacts on the open settings of heritage assets; and
- Uncertain survey information for hedgerows and vegetation.

9.6 The current limitations of the survey and assessment information, for example, gaps or uncertainties relating to hedgerow condition and extent, create uncertainty regarding the full impact of the scheme. The Council's experience from other NSIPs indicates that additional implications can emerge after a Development Consent Order is granted, including the need for further tree or vegetation removal to facilitate temporary access, drainage requirements, or other construction related activities. These can

sometimes fall outside the defined Order limits, leading to unforeseen environmental effects.

Heritage Impacts

9.6 The project will result in minor negligible harm to multiple designated heritage assets, including listed buildings, conservation areas and scheduled monuments. Two Grade II listed buildings, Moulton Farmhouse and Hillside House are expected to experience a moderate degree of harm due to the impact to their settings.

9.7 The Examining Authority's attention is drawn to:

- The erosion of rural settings and long-distance views that contribute strongly to asset significance;
- Underestimation of harm for two heritage assets identified by the Council;
- Cumulative impacts from multiple energy and grid-related schemes altering the wider historic landscape.

Ecological Risks and Designated Sites

9.8 The project involves a number of sites containing various infrastructure associated with the development across the district.

9.9 Principle Issues include:

- Fragmentation of habitats across the order limits potentially impacting wildlife and protected species such as bats;
- Impacts on irreplaceable habitats and trees including the inadequacy of existing surveys for tree and hedgerow losses;
- Loss of created and enhanced habitats secured through the DCO during the decommissioning phase of the development.

Noise, Vibration and Pollution Concerns

9.10 There is insufficient baseline monitoring to determine the extent of construction noise, operational noise, and vibration impacts, especially in quiet rural areas. The proposed reliance on percussive piling is unsupported by geotechnical data and may result in significant nuisance.

9.11 Principle Issues include:

- The absence of evening background noise levels which are proven to have a significant drop from daytime noise levels, therefore current modelling and assessments could result in a significant observed adverse effect level (SOAEL);

- Lack of information regarding National Grid Substation to understand noise levels being generated from this element of the Project;
- Inadequate justification for reliance on percussive piling construction method;
- The need for additional requirements in the DCO.

Cumulative Impact of Energy and Infrastructure Projects

9.12 South Norfolk hosts an unusually high concentration of NSIPs, grid reinforcements, solar farms, BESS facilities and associated development. The combined impacts of these schemes, including overlapping construction periods, raise significant concerns regarding landscape change, ecological pressures, heritage degradation, traffic disruption and effects on community amenity.

9.13 The cumulative effect of all of the solar panel sites in addition to the multiple Project Substations and National Grid Substation, and the concentration of this around Great Moulton is of particular concern due to their combined visual dominance and impact on residential amenity and therefore should be given significant weight within the determination.

Draft DCO Requirements and Governance Issues

9.14 The Draft DCO contains several deficiencies that require rectification, including:

- Insufficient Requirements relating to landscaping, noise, contaminated land and lighting;
- Lack of safeguards ensuring specialist consultees are engaged in key approvals;
- The need to ensure that Requirements remain operable and enforceable notwithstanding any future local government reorganisation

9.15 Strengthening and clarifying the Requirements will be essential to securing acceptable environmental and community outcomes.

Socio-Economic and Community Effects

9.16 Town centres, heritage locations, walking routes and visitor-dependent businesses may face reduced attractiveness during construction and from long-term landscape change.

9.17 There is limited local benefit in terms of direct electricity supply, despite the substantial infrastructure being hosted within the district.

Conclusion

9.18 The Council identifies the following overarching issues to be key matters for the Examination:

- Significant visual and landscape harm;
- Moderate degree of harm to heritage assets requiring great weight;
- Insufficient noise, vibration and pollution assessment;
- Substantial cumulative impacts from multiple NSIPs and energy schemes;
- Gaps and ambiguities in the Draft DCO Requirements;
- Adverse socio-economic and community effects.

9.19 These matters are central to determining whether the proposed project, as submitted, sufficiently mitigates its local impacts and whether further measures are needed to secure an acceptable outcome for South Norfolk.

10. Local Authority Conclusions

10.1 Overall Assessment of Impacts

10.1.1 South Norfolk District Council acknowledges the national importance of expanding and reinforcing the electricity transmission network and generating renewable energy projects, supporting energy security and the transition to net zero. The Council recognises that the East Pye Solar Project contributes to these national objectives.

10.1.2 However, the local impacts of the proposed scheme are significant. Across multiple environmental and community receptors, heritage, landscape character, ecology, noise, amenity and socio-economics, the project introduces adverse effects that will be felt prominently within South Norfolk. Many of these impacts are long-term and not capable of full mitigation.

10.2 Summary of Key Residual Harms

10.2.1 The Council wishes to highlight the following residual harms as key matters requiring the Examining Authority's attention:

- **Landscape and visual harm:** The extent, scale, and prominence of the Project sites containing solar panels, BESS, project substations, and a National Grid substation, alongside harmful mitigation including acoustic barriers and dense planting strategies in the district's open topography, result in significant and long-lasting adverse effects, including the loss of rural tranquillity;
- **Heritage impacts:** Several heritage assets will experience minor negligible harm, but two assets are more likely to experience a

moderate degree of harm resulting from changes to their rural settings and long-distance views that contribute to their significance;

- **Ecological risks:** Potential impacts on protected species due to habitat fragmentation and insufficient information to assess the impacts on ancient woodlands and veteran trees as irreplaceable habitats;
- **Noise and vibration:** The lack of baseline noise monitoring and uncertainty surrounding piling construction methods and operational noise from all substations and BESS undermine confidence in the assessment of noise impacts in the ES;
- **Cumulative effects:** The district faces a uniquely high concentration of NSIPs and energy-related developments, resulting in substantial combined landscape, heritage, ecological and community impacts.

10.2.2 Taken together, these issues constitute a level of local harm that must be given significant weight in the planning balance.

10.3 Planning Balance and Overall Position

10.3.1 The Council's position is not that renewable energy development should be resisted in principle. Rather, the Council considers that the Examination should determine whether the identified local harms have been accurately assessed and whether the proposed mitigation and Requirements are sufficient to secure an acceptable outcome. The Council acknowledges that the project delivers national benefits by generating large scale solar renewable energy and reinforcing the electricity transmission network with the National Grid substation. However, these national benefits are achieved at the cost of very substantial localised harm, particularly in relation to the multiple substations, BESS, and extensive number of sites for solar PV arrays within the district and the cumulative impact of multiple major energy schemes clustered around key substations and rural landscapes.

10.3.2 In line with national planning policy, harm to heritage assets must be given great weight. The same applies to the loss of veteran trees, which are treated as irreplaceable habitats.

10.3.3 The Council’s overall conclusion is that:.

- The project, in its current form, results in significant adverse effects on landscape character, heritage settings, ecological assets and community amenity;
- These harms require strengthened mitigation, clearer and more comprehensive DCO Requirements and further clarification of construction and operational impacts;

- Without these changes, the Council considers that the proposal does not sufficiently mitigate its local impacts.

10.3.4 South Norfolk District Council remains committed to constructive engagement with the applicant and the Examining Authority. The Council will continue to work towards securing improved mitigation, enhanced environmental safeguards and a more robust framework of Requirements within the DCO to ensure that local communities, heritage assets and the district's rural landscape are appropriately protected.

10.3.5 Subject to the resolution of the issues outlined in this LIR and the securing of comprehensive, enforceable mitigation, the Council will confirm its final position during the Examination process.

11. Appendices

11.1 This section identifies the appendices that support the assessments and conclusions presented within the Local Impact Report (LIR). These materials provide the detailed evidence base underpinning the Council's evaluation of the East Pye Solar Project as it relates to South Norfolk District;

11.2 Appendix A – Relevant Development Plan Policies

11.2.1 This appendix includes the policy extracts referenced in Section 5 of this LIR, including:

- Greater Norwich Local Plan (2024): Policies 2 and 3;
- South Norfolk Local Plan (2015): DM1.4, DM3.8, DM3.13, DM3.14, DM4.4, DM4.5, DM4.8, DM4.9, DM4.10;

These extracts provide the statutory policy basis for assessing landscape, heritage, environmental quality, design and amenity impacts.

11.3 Appendix B – Maps and Plans

11.3.1 This appendix contains relevant constraints maps, indicative routing plans, and landscape character area plans in the following Examination Library Documents. These include:

- Order Limits: ES Document Ref 6.1.3, ExA Library Ref APP-039
- Indicative Masterplan: ES Document Ref 6.2.4.1 Figure 4,1, ExA Library Ref APP-059
- Landscape Character Areas (Tas Valley, Tributary Farmland, Plateau Farmland, Waveney Rural River Valley) – Landscape Susceptibility in Relation to Energy Generation, Storage and Transmission SPD 2026.

11.4 Appendix C – Cumulative Schemes List

11.4.1 This appendix sets out the full list of NSIPs and major TCPA applications referenced in Section 4 and Section 7 of this LIR, including:

- A47–A11 Thickthorn Junction;
- East Pye Solar Farm;
- Hornsea Three Onshore Works;
- Sheringham and Dudgeon Extensions;
- Multiple solar farms, BESS projects and grid-related schemes across the district.

11.4.2 The list provides a comprehensive basis for assessing cumulative landscape, heritage, ecological and socio-economic impacts.

11.5 Appendix D – Additional Supporting Material

11.5.1 This appendix provides the Council's consultation responses submitted at earlier stages and the Council's Relevant Representation.

11.5 The appendices listed above form an integral part of this Local Impact Report. Together, they provide the Examining Authority with the detailed evidence necessary to understand the full extent of the local impacts of the proposed development and the basis for the Council's conclusions.

Greater Norwich Local Plan

Document 1 – The Strategy

12. (Adoption Version for Councils, March 2024)

POLICY 2 - SUSTAINABLE COMMUNITIES

Introduction

176. The Sustainable Communities policy is wide ranging. It aims to ensure that the design of development is high quality, contributes to the establishment and maintenance of resilient and inclusive communities, promotes low carbon development and helps to address climate change. It is a key strategic policy, covering many aspects of the vision and objectives of the plan. Together with policy 3, which focuses on design taking account of historic and natural assets, the policy promotes well-designed places as required by section 12 of the NPPF.

177. The policy covers ten key social, economic and environmental issues which all developments must address through their design. These are set out in table 8 below. The table also references other relevant plan policies.

Table 8 - Key issues addressed by policy 2

Issue number in policy 2	Requirement and justification
1. Access to services and facilities	The design of development and the local availability of services play an important role in determining how much and how people travel. This is particularly the case on larger sites where good design can significantly influence travel habits. Developments are therefore required to provide convenient, safe, and sustainable access to new on-site services and facilities or to existing facilities as appropriate. This reduces the need to travel and provides local access to services and facilities, supporting their viability. Layouts that encourage walking and cycling also help to support healthy lifestyles. Sport England's Active Design document should be referred to. In addition, the policy requires sites to be designed to promote public transport use and accommodate parking without over dominating the site or providing a hazard. Strategic infrastructure is provided for through policy 4.
2. New technologies	This section of the policy requires development to make provision for the delivery of technology-based services and electric vehicle charging. Such a strategic approach is important for economic growth and will have environmental and social benefits, such as assisting in home working. The policy encourages developers to work with service providers on the delivery of a broad range of existing, developing and future technologies, with broadband, fibre optic and telecommunication networks a current focus. Developers must therefore ensure broadband infrastructure is provided for new developments. To do this, they should register new sites with broadband infrastructure providers. The preference is that all residential developments over 10 dwellings and all employment developments will provide Fibre to the Premises (FTTP) for high connection speeds. For smaller schemes, the expectation is that FTTP will be provided where practical. Where this is not possible, then non-Next Generation Access (NGA) technologies that can provide speeds more than 24Mbps should be delivered. The policy also supports the use of electric vehicles by requiring the provision of charging points.
3. Green infrastructure	Developments are required to provide on-site or off-site green infrastructure appropriate to their scale and location. The three main benefits of green

	infrastructure: biodiversity gain; the promotion of active travel and the reduction of flood risk, are key NPPF priorities. On-site provision will provide landscaping, street trees and other planting and will link and contribute to the further development of an area-wide green infrastructure network. This network, also promoted through policies 3 and 4, has now been in development in Greater Norwich for over a decade. Development of the green infrastructure network will be in accordance with existing and amended versions of the Greater Norwich Green Infrastructure Strategy and delivery plans, and other documents such as the River Wensum Strategy.
4. Densities	In line with the NPPF, developments are required through this policy to make effective use of land. To do this, the policy establishes minimum net densities for different parts of the area. It requires higher densities in the most sustainable locations. These are mainly in Norwich and, in particular, in the city centre where, dependent on design issues, high densities have and can be delivered. It also establishes a minimum density elsewhere to ensure the effective use of land. In determining the appropriate density for a development, regard will need to be had to design codes and the type and size of housing; for example, a greater number of 1- bedroom properties can be accommodated compared to 5-bedroom properties. The policy will be used with issue 5 below and with policy 3 which focuses on design taking account of historic and natural assets.
5. Design	Good design is key to sustainable development, place-making and helping to make development acceptable to communities. As a result, the NPPF requires local plans to support the creation of beautiful, well-designed places and buildings which respect and enhance local character. To achieve this, the policy requires development to take account of both existing and new design guidance. This allows for the development of area specific design guides, codes and masterplans which can reflect the wide range of development sites and opportunities in Greater Norwich.
6. Inclusive and safe communities	In line with the NPPF, this element of the policy covers social aspects of the design of development. It focuses on the promotion of resilient, safe and inclusive communities with good access to facilities, services and jobs which are designed to deter crime.
7. Environmental protection	This part of the policy covers a range of the environmental protection issues that new development must focus on. These are soil, air, water or noise pollution and land stability. To help achieve this, development should promote recycling, address ground conditions, protect surface and groundwater and separate un-neighbourly uses. The policy provides the strategic basis for more detailed policies and guidance.
8. Flood risk	Along with the overall strategy for growth, this element of the policy will ensure that flood risk is properly taken account of in the location of new development and that sustainable drainage is used. As evidenced by the Strategic Flood Risk Assessment, the great majority of development promoted through this plan avoids areas at risk of flood. Any mitigation required, mainly in parts of Norwich City Centre and East Norwich, will come forward as part of specific developments and will be guided by the level 2 Strategic Flood Risk Assessment.
9. Water Efficiency	Government policy expects local planning authorities to adopt proactive strategies to adapt to climate change, taking account of water supply and demand considerations. It allows local plans to set a higher standard of water efficiency than the Building Regulations where evidence justifies it. For housing development, only the higher Building Regulations standard for water prescribed by Government (110 litres per person per day) can be applied

	through local plans and more demanding standards cannot be set. For non-housing development, broadly equivalent standards can be required using BREEAM assessments. In Greater Norwich, evidence and justification on the need for water efficiency measures includes: • The Environment Agency (EA) has identified Greater Norwich as water stressed both in its 'Water Stress Area Final Classification (2013) and in the 2021 classification update. These are the primary source of evidence which support a tighter water efficiency standard. • The need for water efficiency is particularly significant in Greater Norwich given its proximity to internationally protected water environments, including the River Wensum and the Broads. • Anglian Water's strategic approach to providing water supplies to meet growth needs includes a major focus on water efficiency measures. • The Norfolk Strategic Planning Framework and the key relevant organisations, the Environment Agency and Natural England, all support retaining this approach which has been in place in Greater Norwich since 2011. • The cost of such a policy is usually negligible. It can be easily achieved through a flexible variety of measures to suit different types of homes and buildings. The cheapest approach is the use of water efficient fixtures and fittings. Solutions can also include the use of greywater recycling and rainwater capture. It will have no effect on development viability and will lead to financial savings for householders and users of other developments, along with carbon emissions reductions. Implementation of the standards for water efficiency will be supported by an updated advice note.
10. Energy	Point 10 of the policy requires development to be designed and orientated to minimise energy use and reduce the risk of overheating, an easily achievable and cost-effective means of promoting low carbon development. It also supports decarbonised energy supplies by promoting measures such as decentralised, renewable and low carbon energy generation, co-locating potential heat customer and suppliers, and battery storage. The Greater Norwich Energy Infrastructure Study (March 2019) shows that a positive approach to promoting energy efficiency and locally generated sustainable sources of energy, as well as promotion of the use of battery storage, is required to address local energy network capacity constraints and to ensure the timely delivery of growth. The study sets out that there are likely to be constraints on the electricity grid and recommends ways to avoid or reduce the costs of improved network connection which are relevant to all larger sites, and to those sites affected by grid constraints named in appendix 1. Measures to implement the policy, to be evidenced on a site-by-site basis through the Sustainability Statement, could include: • Semi-islanded approaches including high levels of on-site, renewable or low carbon generation and batteries.

	• Demand side responses, where on-site generation could be turned up or load reduced in response to network signals. • Investment in infrastructure delivered through an Energy Services Company, which can then provide a steady revenue stream for those involved. The NPPF requires a positive approach to large-scale renewable energy generation and the LEP strategy identifies energy as one of five high impact sectors with the potential for growth. Consequently, the policy positively supports such development, subject to the acceptability of wider impacts. In line with national policy, the exception is onshore wind energy development. No suitable sites for onshore wind energy have been submitted to the GNLP. The best way to display local support, as required by the NPPF, for onshore wind energy is through either a neighbourhood plan which requires a local referendum or through any other future local plan documents which may consider suitable sites.

Implementation

178. The policy will be implemented through:

- **Major developments being required to submit a Sustainability Statement.** This will be supported by supplementary planning guidance. The purpose of the statement is to show, on a site-by-site basis, how the varied aspects of the policy are addressed. The policy references use of national and local design guides and codes to ensure good urban design and encourages, but does not require, the use of the Building for a Healthy Life design tool, or any equivalents or future successors. This provides flexibility in how applicants produce their sustainability statements for housing developments. The policy also encourages master-planning using a community engagement process on larger sites 200 dwellings plus or 20,000 square metres for non-residential development. The purpose of this is to promote effective community engagement in the design of larger schemes. It also includes a requirement for Health Impact Assessments which will be provided for allocated sites of 500 dwellings plus, for non-allocated housing sites of 100 dwellings plus and for any housing proposal with a significant amount of housing for the elderly. These assessments will show how the health care needs of the new development will be provided for.
- **Housing developments of 100 dwellings or more being required to submit a Delivery Statement.** This statement is aimed at supporting timely delivery of development, a priority for this plan. It requires developers to set out the expected timing of the delivery of developments in their statements accompanying planning applications. Where delivery does not happen, it enables the local authorities to consider the use of legal powers to promote delivery, including compulsory purchase.
- **All minor developments also being subject to the policy's requirements**. This will be assessed on a case-by-case basis, taking account of site characteristics and proposed uses. Minor developments are not required to submit a Sustainability Statement. This is in line with the threshold for national requirements for Design and Access statements for major developments only and ensures that planning application submission requirements are proportionate.
- **Existing development management policies**, which detail some policy aspects such as environmental protection issues.

- **Supplementary Planning Documents and guidance**.

179. Potential applicants for planning permission for major developments are advised to contact Anglian Water Services in the early stages of producing a development scheme in order to ensure that there is adequate capacity, or capacity can be made available, in the wastewater network. The provision of capacity could affect the timing of development. In locations where there are known to be capacity issues the local authority will expect this engagement to have taken place and for it to be demonstrated that adequate capacity will be available to serve the development (see Appendix 1 Infrastructure Requirements for currently known locations with capacity issues). Applicants should also consider contacting Norfolk Constabulary for advice on crime and safety issues.

180. Overall, to foster sustainable, mixed and resilient communities, development should be high quality, contributing to delivering growth that is inclusive and meets identified needs, to enhancing the environment, to mitigating and adapting to climate change and to assisting in meeting national greenhouse gas emissions targets.

POLICY 2 – SUSTAINABLE COMMUNITIES

To contribute to the achievement of sustainable communities, development proposals should, where relevant, address the following matters:

1. **Ensure safe and convenient access for all, including by non-car modes, to on-site and local services and facilities such as schools, health care, shops, recreation/ leisure/community/faith facilities and libraries; encourage walking, cycling and public transport through the layout of development; and integrate parking to avoid it dominating the streetscape or being a hazard.**

2. **Make provision for accommodating technology-based services such as broadband, fibre optic networks, telecommunications and electric vehicle charging.**

3. **Create and contribute to multi-functional green infrastructure links, whether provided on-site or off-site, including through landscaping, street trees and other tree planting, taking account of local green infrastructure strategies and delivery plans.**

4. **Make efficient use of land with development densities taking account of accessibility and local character consideration. For residential development, it is expected that there will be minimum net densities of 40 dwellings per hectare in Norwich and 25 dwellings per hectare elsewhere in the Plan area. Higher densities are encouraged in and close to defined district and town centres, and in particular in the city centre. In the most accessible locations in Norwich, regard should be given to providing low or car-free housing in accordance with Policy DM32 of the Norwich Development Management Policies Local Plan.**

5. **Create beautiful, well-designed places and buildings which respect the character of the local area and seek to enhance it through appropriate design, having regard to any local design guidance (including design codes).**

6. **Promote an inclusive, resilient, and safe community through the provision of facilities and services commensurate with the scale and type of the development; and the design and layout of development reflecting best practice to deter crime.**

7. **Avoid risks of unacceptable levels of soil, air, water and noise pollution and/or land instability.**

8. **Avoid locating inappropriate development in areas at risk of flooding by applying the sequential and exceptions tests and ensuring that flood risk is not increased elsewhere. Sustainable drainage systems should be incorporated unless there is clear evidence that this would be inappropriate.**

9. **Ensure a high level of water efficiency. To achieve this:**
   i. **Housing development will meet the Building Regulations part G (amended 2016) water efficiency higher optional standard, or any equivalent successor;**
   ii. **Non-housing development will meet the BREEAM "Very Good" water efficiency standard, or any equivalent successor.**

10. **Protect water quality and ensure a low level of energy consumption. To achieve this development proposals should:**

i. Take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption and the risk of overheating.
ii. Provide for the use of sustainable energy, local energy networks and battery storage where appropriate.

Proposals for free standing decentralised, renewable and/or low carbon energy networks, except for wind energy schemes, will be supported subject to the acceptability of wider impacts.

Wind energy schemes will be supported where the proposal is in an area identified as suitable for wind energy development in the Development Plan i.e., within a Neighbourhood Plan or Development Plan Document; or in a Supplementary Planning Document, and consultation has been undertaken to identify planning impacts, these have been addressed, and the scheme has been demonstrated to have the support of the local community.

To assist this broad-based approach:

i. Planning applications for major developments will be required to be accompanied by a Sustainability Statement (including Health Impact Assessments as appropriate) showing how development will address the above matters that are relevant to the proposal. Housing development should take account of the National Design Guide (and any subsequent related publications) and optionally making use of tools such as Building for a Healthy Life (or any successor). Flood risk assessments will be provided separately in accordance with the NPPF.
ii. Master-planning using a community engagement process, as agreed with the local planning authority, will be encouraged on larger sites and particularly for proposed developments of 200 dwellings or 20,000 square metres plus.
iii. Delivery plans are required with planning applications for 100 dwellings plus to set out the expected timing of the delivery of developments. Where delivery cannot be demonstrated to be in accordance with agreed delivery plans for individual sites, the authorities may make use, where necessary, of their legal powers to bring about strategically significant development, including compulsory purchase. In considering the use of such powers regard will be had to any change of circumstances that might affect delivery, particularly economic factors, and the Delivery Plan will need to be updated accordingly.

POLICY 3 – ENVIRONMENTAL PROTECTION AND ENHANCEMENT

The Built and Historic Environment

181. The National Planning Policy Framework states that plans should set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats.

182. The Greater Norwich area has numerous heritage assets. Consequently, the historic environment is central to the character and quality of life of the Greater Norwich area and is a significant factor in its economic success through encouraging tourism and inward investment. Conserving and enhancing the historic environment will continue to reinforce what makes Greater Norwich an attractive place to live in, work and visit.

183. As well as the heritage assets that are easily visible, there are also those that are hidden below ground. As a long settled and productive area, Greater Norwich has a significant archaeological heritage which development can help to reveal.

184. As such, it is important to recognise that the historic character of the area is made up of a multitude of heritage assets. Individually, some may be more important than others, but even the lesser ones are important in contributing to overall character and quality. All the different elements of the historic environment need to be taken into consideration and conserved and enhanced where possible as part of the development of the area. Guidance for this can be obtained through a wide range of existing resources, such as historic landscape character assessments, conservation area appraisals, listed building and scheduled monuments information and archaeological records; but it is usually necessary to undertake a heritage impact assessment in accordance with guidelines produced by Historic England and local validation requirements to understand the impact of a proposal on the significance of a heritage asset. This would include the impact of development on the setting of a heritage asset, which can contribute to its significance, and can be undermined by proposals that have substantial mass or height that contrasts with neighbouring historic buildings and the wider area.

185. The strategic approach to heritage is first to consider the potential location of development, for example does the location itself "fit" well in relation to adjoining settlements, and does it avoid intruding in important views of heritage assets? This is addressed through the growth strategy set out in policy 1.

186. Following from this, the design of the development needs to respect the historic environment, be appropriate to its setting, seek to enhance the locality and provide measures to further the understanding of local heritage issues. Development should therefore draw upon existing historic character to lead to more positive change in the built and historic environment.

187. The aim should be to avoid harm to the historic environment. In certain cases, an element of harm to the historic environment resulting from development may be unavoidable. This will only be justified if the benefits of the development outweigh the harm, and the harm is kept to a minimum, taking into account the relative importance of the heritage assets in accordance with national policy.

188. The policy also includes a flexible approach to the use of heritage assets to achieve their retention whilst retaining their historic significance, and in this respect particular encouragement will be given to proposals for restoring those assets that are at risk of being lost. Historic significance potentially covers a broad range of issues such as artistic, aesthetic, architectural, cultural and social considerations.

189. The Greater Norwich Green Infrastructure Study provides information on designated Historic Environment assets in relation to green infrastructure provision.

The Natural Environment

190. Reflecting the Government's 25 Year Environment Plan, the NPPF places great weight on protecting and enhancing Greater Norwich's rich natural environment. It seeks to ensure that development not only avoids harm to natural environmental assets, but also encourages a local plan policy approach which actively protects, promotes and enhances biodiversity, so that development results in biodiversity net gain. Relevant legislation also has to be applied including the Water Framework Directive, which sets requirements to protect and improve the water environment, and the Habitats Regulations which set requirements to protect habitats and species.

191. The NPPF requires local plans to recognise the intrinsic character and beauty of the countryside and local landscape character. Accordingly, the policy requires development to respect local landscape character based on existing and any future landscape character assessments, avoiding harm to locally valued landscapes from inappropriate development. It continues the well-established approach in Greater Norwich of having strong landscape protection policies. To do this, it provides the continued strategic policy basis for more detailed, location specific development management policies covering the strategic gaps and landscape settings including river valleys, undeveloped approaches to Norwich and the setting of the Broads. This is the most suitable approach to landscape protection locally given that Greater Norwich does not have the exceptional circumstances required by Government to establish a Green Belt.

192. A key means of achieving biodiversity net gain is through the NPPF requirement that local plans *take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure*. The development of a multi-functional green infrastructure network was formalised locally through the Joint Core Strategy in 2011. It is essential that the network continues to be protected and developed further into the long term as green infrastructure aims to link fragmented habitats, allowing the movement of species and supporting biodiversity gain. It also has other benefits such as reducing flood risk and promoting active travel.

193. Tools such as the Defra biodiversity metric should be used to demonstrate the expected biodiversity net gain that will be achieved through development. A holistic approach to biodiversity gain should provide a range of biodiversity improvements.

194. Securing measurable gains for biodiversity is a national policy requirement and this is reflected in this policy. Any such gain needs to be significant in order to be credible which is why the policy requires a gain of at least 10% greater than the existing situation.

195. A Habitats Regulations Assessment (HRA) has been produced for the plan. It identifies in detail how internationally designated ecological habitats and wildlife sites in the wider area, including areas in the Broads and on the Norfolk coast, would potentially be impacted by recreational pressures likely to be generated by growth in Greater Norwich. The policy therefore sets a requirement that development mitigates impact on sites protected under the Habitats Regulations Directive.

196. The HRA identifies a range of mitigation measures to alleviate additional recreational pressure from additional growth planned in the Greater Norwich Local Plan. These include interventions at the sites themselves, providing suitable alternative natural green space (known as SANGS) and the implementation of a wider programme of green infrastructure improvements.

197. The HRA provides further information on SANGS, stating that this could take the form of a new country park containing woodland and waterbodies. This would be in addition to the new country park facilities which are already planned for the Growth Triangle.

198. The Joint Core Strategy identified the potential to create a new country park at Bawburgh Lakes to the west of Norwich. It would complement the existing country park to the east of the city at Whitlingham, with the parks linked by the Yare Valley green corridor. Its establishment remains desirable. However, the policy is not site-specific as other opportunities may be identified either through local green infrastructure strategies or through other means. For example, there are proposals being brought forward to develop the Broadland Country Park to the north-west of Horsford and new small-scale country parks, such as at Ladybelt Country Park in East Carleton, can provide valuable additional green infrastructure.

199. A Norfolk-wide study, the Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy, has been undertaken and has informed this Plan, including the approach to avoiding and mitigating the potential impacts on the most important protected wildlife sites (identified under the HRA Directive) that might arise from visitor pressure related to new residential developments. For the purposes of this policy, "residential development" excludes replacement dwellings, extensions to single dwellings and nursing homes. Based on the strategy, policy 3 sets out a two-pronged approach to avoidance and mitigation of impacts.

200. Firstly, a contribution of around £205 (plus allowance for inflation) from each new home is to be made towards direct mitigation measures on the protected sites.

201. Secondly, it seeks to avoid impacts on the protected sites through the provision of sufficient and suitable informal recreational greenspace elsewhere to reduce the number of visits to the protected sites. The Greater Norwich authorities currently have different informal recreational requirements on development set out in their Development Management policies local plans. These will continue to apply. The suitability of such greenspace will depend on a number of factors, including the size of the area, its accessibility and its quality, which together provide its attractiveness to users. However, as a guide and to ensure that adequate provision is made to reduce the impacts on the protected sites, this policy requires a minimum of 2 hectares per 1,000 population of suitable informal recreational greenspace to be provided by a residential development.

This figure has regard to the existing local standards, Natural England's Accessible Natural Greenspace standard and the Fields in Trust informal recreational space standard. In addition, the provision of the greenspace should reflect the standards set out in Natural England's Accessible Natural Greenspace standard.

202. The Norfolk Strategic Planning Framework includes county-wide policy objectives on environmental protection, landscape protection and biodiversity. Work supporting the NSPF includes a county-wide green infrastructure network map which provides the basis for more detailed mapping to support and inform local plans, including the GNLP. The updated green corridors map for Greater Norwich, including links to neighbouring areas, is in maps 8 A and B below.

203. The Greater Norwich Green Infrastructure Study outlines the existing green infrastructure, biodiversity and designated heritage assets for housing allocations within the area. It gives general comments about opportunities for potential enhancements of green infrastructure related to the allocations. Whilst this not intended to replace detailed site survey and design work, it is intended to assist the Development Management process. As well as being of importance for the natural environment, Green Infrastructure can have a role to play in enhancing and conserving the historic environment. It can be used to improve the setting of heritage assets and to improve access to it, likewise heritage assets can help contribute to the quality of green spaces by helping to create a sense of place and a tangible link with local history.

204. An updated Green Infrastructure Strategy is currently being produced. This should also be used to assist in identifying the most suitable green infrastructure provision to serve specific developments and contribute to the development of the network.

205. The policy therefore builds on the success of the JCS to ensure both continued long-term development of the green infrastructure network and that visitor pressure issues are addressed.

206. As the competent authority under the Habitats Regulations, the Greater Norwich local planning authorities must also ensure that development will have no negative impact on water quality through nutrient enrichment to internally protected habitat sites. As a result, policy 3 ensures that relevant developments will only be granted planning permission when there is certainty about the levels of nutrients which will be generated and mitigation so that the development will be nutrient neutral.

207. The relevant internationally protected habitat sites are designated under the Habitats Regulations Directive and are defined by Natural England and identified in the plan's HRA as being in an unfavourable condition in 2022.

208. The habitat sites are named in the policy. They are firstly the Wensum Special Area of Conservation (SAC), which is an internationally significant lowland chalk river that is currently affected by phosphorous enrichment. Secondly, the Broads SAC and the Broadland Ramsar consist of five separate Sites of Special Scientific Interest which include broads and fens, with some drained marshes. They contain rich and rare aquatic habitats and species which currently suffer from phosphorous and nitrogen enrichment.

209. The policy applies to development in the river catchments which could add pollutants to the protected habitats. The catchments cover the majority of Greater Norwich so that

development in the Norwich urban area and the main towns of Aylsham, Long Stratton and Wymondham, along with many service villages and village clusters, is impacted. The exception which is not affected is the area around Diss, Harleston and the Waveney Valley, Loddon and Acle. The issue also impacts other local planning authorities in Norfolk (see map 9 below), with the main towns of Dereham and Fakenham outside Greater Norwich also being affected.

210. To comply with the Habitats Regulations and Natural England advice, the policy applies firstly to residential developments leading to an increase in overnight accommodation. This includes new homes, student accommodation and care homes. Secondly, the policy applies to some types of non-residential development. These are developments which may draw people from outside the catchments of the SACs because of their scale or type, developments which may generate unusual amounts of surface water, or which may contain unusual pollutants in their surface water run-off. Tourist attractions, along with some uses which will need to be considered on their own merits, fall into this category.

211. Policy 3 consequently requires evidence to be submitted to show that mitigation has been secured to achieve nutrient neutrality. The evidence must show that this mitigation will be implemented prior to the occupation of relevant developments. Nutrient neutrality solutions must be retained in perpetuity, though short-term measures can subsequently be replaced by long-term approaches.

212. Therefore, proposals that require on-site mitigation will need to provide a costed management and maintenance plan to ensure they will not adversely affect the integrity of sites in an unfavourable condition, or alternative and equivalent means of demonstrating that the integrity of such sites will not be adversely affected. The plans must cover the lifetime of the development and should be accompanied by a monitoring framework. Proposals using off-site credits will need to submit evidence of the agreement with a mitigation provider to purchase adequate credits with their planning application.

213. The policy states that the nutrient neutrality requirement only applies whilst the protected sites are in unfavourable condition. Regular monitoring by the national environmental bodies and report in this plan's monitoring framework will provide updates.

214. The Greater Norwich partnership is working with other Norfolk local planning authorities, Anglian Water, Natural England, and other stakeholders to assist developers in accessing a wide portfolio of mitigation opportunities suitable for different scales of housing and other relevant development. Reflecting the scale of the issue affecting the area which led to a long period in which planning permissions could not be granted for affected development, this work has been funded both by national government and the local planning authorities.

215. In addition to a calculator provided by Natural England, a local nutrient neutrality calculator, the Norfolk Budget Calculator, enables developers to identify the scale of mitigation requirements on a site-by-site basis.

216. Evidence on a wide portfolio of the most suitable measures for use in Norfolk has been produced by consultants Royal Haskoning. For many sites, different types of off-site or on-site mitigation measures will be used in combination. The off-site measures will mainly be delivered through a Joint Venture company, Norfolk Environmental Credits. The company brokers delivery of a variety of mitigation options between providers, such as

landowners and developers. It secures mitigation and then issues certificates confirming the credits that have been purchased. Developers must submit the certificates with their planning applications.

217. This portfolio of mitigation measures includes:
    - Nature-based solutions such as silt traps.
    - Runoff management measures such as cover crops.
    - Wastewater management measures such as improvements to wastewater treatment works and
    - Demand management measures such as retrofitting water saving fixtures and fittings in existing properties.

218. Large-scale greenfield sites are generally able to provide dedicated on-site mitigation. It is estimated that around 60% of the homes in the plan will be on such sites. Some brownfield sites in Norwich will benefit from mitigation from a programme of retrofitting water efficiency measures in council housing. Therefore, the mitigation opportunities provided are of most importance to the developers of small and medium-scale greenfield sites and brownfield sites not benefitting from the retrofitting programme.

219. The portfolio of mitigation opportunities enables Habitats Regulations requirements to be addressed at a reasonable cost, limiting the impact on the viability of development. The Levelling Up and Regeneration Bill requires upgrades to Anglian Water's strategic wastewater treatment plants by 2030. This will lead to around a 36% reduction in phosphorus pollutants entering the watercourse from the treatment plants and a 65% reduction in nitrogen. The cost per dwelling of nutrient neutrality mitigation measures will be reduced once these improvements have been made.

220. Natural England will also provide off-site schemes and nutrient neutrality credits through nature and land-based solutions such as wetlands and woodlands. These will be medium to long-term solutions. These solutions will sit alongside mitigation options provided through Norfolk Environmental Credits. It is also expected that commercial providers will enter the nutrient neutrality market.

221. Government guidance on combining environmental credits for biodiversity net gain and nutrient mitigation has confirmed that "stacking" of environmental credits is permitted. This means that credits from the same activity on a piece of land can be sold separately for both biodiversity net gain and nutrient mitigation provided that the eligibility criteria for each market is met.

222. The impacts of nutrient neutrality requirements have been taken into account in the plan's housing delivery trajectory.

POLICY 3 – ENVIRONMENTAL PROTECTION AND ENHANCEMENT

The Built and Historic Environment

The development strategy of the plan and the sites proposed for development reflect the area's settlement structure of the city, towns and villages, retaining the separate identities of individual settlements.

Development proposals should enhance the built and historic environment through:

- **Being designed to create a distinct sense of place and enhance local character, taking account of local guidance such as conservation area appraisals and historic landscape character assessments.**
- **Avoiding harm to designated and non-designated heritage assets, including their setting, having regard to their level of significance in accordance with the requirements of the NPPF and relevant policies in other Development Plan Documents and Neighbourhood Plans.**
- **Providing a continued or new use for heritage assets whilst retaining their historic significance.**
- **Undertaking a heritage impact assessment if significant impacts to a heritage asset might arise.**
- **Where relevant, heritage interpretation measures should be provided to enhance the appreciation and understanding of local heritage assets.**

The Natural Environment

Development proposals should enhance the natural environment through:

- **Being designed to respect, conserve and enhance natural assets, taking account of local design and other guidance such as landscape character assessment;**
- **Avoiding harm to designated and non-designated assets of the natural environment, having regard to their level of significance (local, national, and international) in accordance with the requirements of the NPPF and relevant policies in other Development Plan Documents and Neighbourhood Plans.**
- **Following a hierarchy of seeking firstly to avoid impacts, mitigate for impacts so as to make them insignificant for biodiversity, or as a last resort compensate for losses that cannot be avoided or mitigated for. Adherence to the hierarchy should be demonstrated.**
- **Undertaking a relevant assessment (such as a landscape or ecological assessment) if impacts to a natural asset might arise.**
- **Provision of new, or conservation or enhancement of existing, green infrastructure to contribute (directly or indirectly) to the strategic green infrastructure network having regard to local green infrastructure strategies (identified indicatively in Maps 8A and 8B).**
- **Respecting landscape character and retaining important views and features, having regard to landscape character assessments and sensitive areas such as landscape settings, strategic gaps and green spaces identified in Local or Neighbourhood Plans, and to the importance of the nationally designated Broads Authority area and its setting.**

In applying the above, regard will be given to the level of importance of the natural asset.

In addition, development will deliver net biodiversity gain through the provision of on-site or off-site natural features, creating new or enhancing existing green infrastructure

networks that have regard to local green infrastructure strategies. It should be demonstrated that the gain to biodiversity is a significant enhancement (at least a 10% gain) compared to the existing situation.

All residential development will address the potential visitor pressure caused by residents of the development that would detrimentally impact on sites protected under the Habitats Regulations through:

- **The payment of a contribution towards the cost of mitigation measures at the protected sites and**
- **The provision or enhancement of adequate green infrastructure, either on the development site or nearby, to provide for the informal recreational needs of the residents as an alternative to visiting the protected sites. This will equate to a minimum of 2 hectares per 1,000 population and will reflect Natural England's Accessible Natural Greenspace Standard.**

Any development that would be likely to have a significant effect on a European site, either alone or in combination with other plans or projects, will be subject to assessment under the Habitat Regulations at application stage. If it cannot be ascertained that there would be no adverse effects on site integrity the application will be refused unless it passes the tests set out in Regulation 62, and any necessary compensatory measures will need to be secured.

Within the catchments of the River Wensum Special Area of Conservation (SAC), The Broads SAC and the Broadland Ramsar:

- **Residential development that results in an increase in the level of overnight stays; and**
- **Non-residential development that**
- **by virtue of its scale and type may draw people from outside the catchments of the SACs,**
- **and/or may generate unusual quantities of surface water,**
- **and/or, by virtue of the processes undertaken, may contain unusual pollutants within surface water run-off,**

must provide evidence to enable the local planning authority to conclude through a Habitats Regulations Assessment that the proposal will not adversely affect the integrity of sites in an unfavourable condition.

South Norfolk Local Plan

Development Management Policies Document

Adoption Version
October 2015



South Norfolk COUNCIL

Working with you, working for you

1.4 Environmental Quality and Local Distinctiveness

Reasoned Justification

1.29 Notwithstanding the need to consider the economic and social dimensions of all decisions (Policy DM 1.1), the Council is committed to ensuring that development proposals do not cause significant harm to irreplaceable **environmental assets**, and do make positive improvements in the quality of the built, natural and **historic environment** and people's quality of life. In accordance with the **National Planning Policy Framework**[i] this will include:

- moving from a net loss of bio-diversity to achieving net gains for nature;
- replacing poor design with better design;
- improving the conditions in which people live, work, travel and take leisure; and
- widening the choice of high quality homes.

1.30 In particular, all development proposals should demonstrate that full regard has been given to local circumstances and the distinctive local characters and qualities of the places found in South Norfolk. The Council will work with partners and stakeholders to identify and prepare information about these **environmental assets;** to help developers understand the important local natural, heritage and built assets and characteristics in the areas. For example the Council will work with the Local Nature Partnership – Wild Anglia, and the Norfolk Biodiversity Information Service, and with local special interest groups and parish councils to prepare conservation appraisals of conservation areas. Development proposals will also need to demonstrate that full regard has been given to the character of the Broads where they may have an impact.

1.31 The National Planning Policy Framework points to the importance of an inclusive design approach addressing the connections between people and places, and points to the desirability of new development making a positive contribution to local character and distinctiveness as part of supporting and building successful local communities and vitality.

1.32 The Council is committed to ensuring that development management decisions deliver the requirements of **Joint Core Strategy** Policy 1 'Addressing climate change and protecting **environmental assets**', and Policy 2 'Promoting good design'.

1.33 The development management policies and supplementary guidance produced by the Council will advise on how development proposals can achieve high quality by protecting important **environmental assets** and respond by making positive improvements to locally distinctive assets and characteristics. Relevant guidance will be produced to assist larger and smaller development proposals, for example: the South Norfolk Place-Making Guide SPD, Development in the Historic Environment SPD, the Residential Alterations, Conversions and Extensions SPD and South Norfolk Landscape Character Assessment. Development will be expected to contribute to bio-diversity enhancement and **green infrastructure** in the areas of most significant development growth and change

1.34 The **Design and Access Statements** prepared by developers to support planning applications should demonstrate an understanding and evaluation of **environmental assets** and distinctive local characteristics, and justify the proposed layout and design against an expectation that all new development should make a positive improvement. The statement should address the natural, influenced and built environment and locally distinctive characteristics of places.

1.35 In carrying out development management functions the Council will seek to avoid duplication of functions and overburdening of developers with unwarranted requirements, by working closely with those responsible for other aspects of environmental regulation, including activities requiring Environmental Permit approvals otherwise administered by the Council and/or Environment Agency.

Policy DM 1.4 Environmental quality and local distinctiveness

a) The Council will work with developers to promote and achieve high quality and positive environmental improvement from all development. All development proposals must demonstrate an understanding and evaluation of the important environmental assets including locally distinctive characteristics, and justify the design approach.

b) Designated assets will be protected in accordance with their natural and historic significance, as detailed in the Development Management Policies.

c) A net environmental improvement will always be sought and all proposals should avoid environmental harm or where this is not possible, adequately mitigate and compensate for the adverse environmental effects of development.

d) All development should take all reasonable opportunities to:

- **i. Make a positive contribution to local character and distinctiveness;**
- **ii. Enhance biodiversity to achieve a net gain for nature;**
- **iii. To improve the resilience of ecosystems to environmental change including through the provision of improvements to enhance identified environmental sites; stepping stones and corridors;**
- **iv. Protect environmental and water resources and enhance their efficient use;**
- **v. Deliver the provision of essential infrastructure including water and wastewater network upgrades, waste facilities', flood defences and green infrastructure;**
- **vi. Enhance, re-use and better reveal the significance of heritage assets;**
- **vii. Re-use buildings rather than demolish, recycle building materials and select materials to maximise environmental sustainability and minimise impact on scarce resources and environment;**
- **viii. Generate and utilise renewable energy in appropriate ways; and**
- **ix. Work with the characteristics of the location to ensure that the necessary mitigation measures are not disproportionate to the benefits of the scale of development proposed.**

Notes

- Important aspects of local distinctiveness that new development should respond to are identified addressed in Section 2 of the **South Norfolk Place Making Guide**; Section 4.2 of the Guide includes detailed guidance on appraising a site and its context. This should form part of the **Design and Access Statement** submitted with proposals.
- The importance of contribution to local distinctiveness is also reflected in guidance applying to domestic scale development, in the **historic environment** and setting in the wider landscape - see **Residential Alterations, Conversions and Extensions SPD, Development in the Historic Environment SPD,** and **South Norfolk Landscape Character Assessment.**
- Policies in Section 4 of the Development Management policies set out how the environmental dimension of a proposal will be considered. Policies DM 4.4 – 4.9 address the natural environment and **influenced landscape**, DM 4.10 address **heritage assets**. Policy DM 3.8 addresses design principles including the regard given to local distinctive character.
- Development Management policy DM 1.1 addresses the presumption in favour of sustainable development that balances the economic, social and environmental dimensions in both the immediate and longer term.
- Policy 1 'Addressing climate change and protecting environmental assets', and Policy 2 'Promoting Good design' apply the Vision and Objectives of the **Joint Core Strategy** to all development proposals.
- Sections 7, 10, 11, 12 of the **National Planning Policy Framework** in particular promote design and environmental quality, including the protection and mitigation of impacts. Para 15 requires local plans to set out how the 'presumption in favour of sustainable development' will be applied locally; para 58 refers to the need to "understand and evaluate" the "defining characteristics" and to respond and reflect these, while not preventing appropriate innovation. Para 61 addresses the "connections between people and places" and the contribution to sustainable communities, para 121 points to the "desirability of new development making a positive contribution to local character and distinctiveness".
- The statement '*Environmental Quality in Spatial Planning'* – English Heritage, Environment Agency and Natural England (formerly The Countryside Agency and English Nature) provides guidance on incorporating the natural, built and historic environment, and rural issues in plans and strategies. http://www.environment-agency.gov.uk/static/documents/Research/envqualityplansupp_1351829.pdf

---

- [i] The **National Planning Policy Framework** (paragraph 9) requires positive improvement in the quality of the built, natural and historic environment, and reflecting of local circumstances (paragraph 10).

3.8 Design Principles

Reasoned Justification

3.52 Good design is a key aspect of **sustainable development** to achieve social, economic and environmental objectives, and indivisible from good planning. All development should contribute positively to making places better for people[i].

3.53 The Council is committed to working positively with developers to achieve high quality and inclusive design for all development, including small and larger individual buildings, public and private spaces and wider area development. The Council will seek to ensure that new development will: function well; create attractive places and support community cohesion; optimise the potential of the site; respond to local character, history and distinctiveness; and be visually attractive as a result of good architecture and landscaping. In accordance with the **National Planning Policy Framework**, development of poor design that fails to take the opportunities for improving the character and quality of an area and the way it functions should be refused.

3.54 Reflecting the **Joint Core Strategy**, the Council places great importance on the need to promote and reinforce local distinctiveness, and the Council is committed to producing guidance, policies and information to help raise understanding and evaluation of these defining characteristics. This includes the South Norfolk Place Making-Guide SPD, a Residential Alterations, Conversions and Extensions SPD and other supplementary planning guidance and Conservation Area appraisals.

3.55 Good quality housing should provide for internal and external accommodation that is fit for purpose and suitable for its intended occupants. Homes must be designed to meet the demands of everyday life and offer the flexibility and potential to be occupied by householders with different needs over time.

3.56 Buildings that perform better than the minimum environmental standards are more sustainable in the long term, particularly in respect of sound insulation and energy efficiency. Well-proportioned rooms with good levels of natural light provide a better quality of life for occupiers, and will also be adaptable to meet changing circumstances over time.

3.57 The outdoor space around new homes may be provided as private gardens or as a communal amenity space. It should however be integral to the overall residential design of the site. Detailed guidance on the design and quality of outdoor space and arrangements of housing is set out in the **South Norfolk Place-Making Guide**. Provision of parking, refuse storage and utility space should not be detrimental to the

provision of suitable external amenity space; detailed guidance is referred to in the Notes below.

3.58 To ensure innovation and originality is not stifled and best practice is shared, the Council will also have regard to promote the sharing of best practice and will maintain a regular programme of local design review.

3.59 Reflecting Joint Core Strategy Policy 2, major development (500 dwellings or more) OR that of particular complexity, should be **masterplanned** using an inclusive recognised process demonstrating how the whole scheme will be delivered and related to adjacent areas. A lower threshold may be appropriate for new development in smaller settlements, and this should address the programming of timely infrastructure and so forth. Specific requirements are addressed in individual site allocation policies.

3.60 The importance of contributing to local distinctiveness, the **historic environment** and setting in the wider landscape applies at the smaller scale and to domestic scale development too - see Residential Alterations, Conversions and Extensions SPD, Development in the Historic Environment SPD, and Landscape Character Study.

Policy DM 3.8 Design Principles applying to all development

(1) The Council will work with applicants to achieve high quality design and positive improvement from all development, protect and enhance the environment and existing locally distinctive character and encourage innovation; the Council will refuse development that fails to take the opportunities for improving the character and quality of an area and the way the area functions.

(2) Major development should be masterplanned using an inclusive recognised process demonstrating how the whole scheme will be delivered and related to adjacent areas, including the programming of infrastructure requirements. A masterplan will also be required for sites of less than 500dwellings in the case of large developments incorporated into a smaller settlement or on sites of particular complexity.

(3) **Dwellings should be designed so that internal spaces are suitable, adaptable and will be able to accommodate a range of residents over time.**

(4) **Planning permission will be granted for development that has been designed to, where relevant to the proposed development: respect adjoining structures, spaces, routes and local landscape; provide an attractive, accessible and safe environment; and conform to the following criteria:**

(a) The scale, height, massing, form and appearance of development is designed with a satisfactory relationship of structures, spaces and routes within the site and a successful integration into the surroundings;
(b) The development is created with high standards of design, building materials, finishes and landscaping reflecting the use of distinctive local building traditions, materials and heritage assets where relevant; or innovative contemporary design solutions reflecting local context and reinforcing or creating local distinctiveness;
(c) Access is provided by routes and public spaces that meet different requirements of accessibility (including pedestrians, cyclists and people with mobility or sensory difficulties) without an unsatisfactory domination of traffic;
(d) A clear distinction is made between public and private spaces within the site; all public and private spaces to be suitable for their purpose, attractive, landscaped, safe; and with adequate lighting where provided that is carefully controlled to minimise overspill;
(e) Visually attractive frontages and hard & soft boundary treatments are created to adjoining streets and public areas, public spaces and the open countryside; all appropriate frontages to contain windows and doors that assist informal surveillance of the public realm by occupants of the site;
(f) Buildings and spaces are orientated to: gain benefit from sunlight and passive solar energy and wherever possible designed around a Sustainable Drainage system;
(g) The entire development is designed to reduce any actual or perceived opportunities for anti-social activity on the site and in the surrounding area;
(h) Landscaping of the development is designed to retain important existing natural features, reflect the surrounding landscape characteristics of the area and contribute to relevant objectives of the local Biodiversity Action Plan; and
(i) Convenient, safe and visually attractive areas are created for servicing buildings and parking of vehicles and cycles without dominating the development or surroundings.

Notes

Sections 7, 10, 11 & 12 of the National Planning Policy Framework promote design and environmental quality, including the protection and mitigation of impacts. Para 15 requires local plans to set out how the 'presumption in favour of sustainable development' will be applied locally; para 58 refers to the need to "understand and evaluate" the "defining characteristics" and to respond and reflect these, while not preventing appropriate innovation. Para 61 addresses the "connections between people and places" and the contribution to sustainable communities, para 121 points to the "desirability of new development making a positive contribution to local character and distinctiveness".

- **Joint Core Strategy** Policy 2 promotes good quality design that creates a strong sense of place and reflects local distinctiveness. The need to reflect local distinctiveness in development is addressed in the Place Making Guide SPD (Section 2) and Section 4.2 of the guide includes detailed guidance on appraising a site and its context. This should form part of the **Design and Access Statement**.
- Reflecting Joint Core Strategy Policy 2, all development of 10 units or more should be evaluated for the Building for Life Criteria and its successors.
- Development Management Policies expand on the necessary assessments of **environmental assets** and requirements.
- Further advice and guidance prepared by South Norfolk Council to help designers identifying important local characteristics and appropriate design response include:
    - **South Norfolk Landscape Characterisation Study** – published
    - **South Norfolk Place-Making Guide** – Adopted Supplementary Planning Document
    - **South Norfolk Design in the Historic Environment Guide** - (to be prepared)
    - **South Norfolk Residential Alternations, Conversions and Extensions Guide** - (to be prepared)
- Presentation of these documents on the Council's web site pages will include examples of updates, best practice and the results of design review.

3.13 Amenity, Noise and Quality of Life

Reasoned Justification

3.84 Planning policies seek to ensure a high quality design and quality of life for all existing and future occupiers of the land and buildings. All development proposals should take into consideration the impact on the living and working conditions of existing and future occupiers and the continued operation of the authorised uses and businesses surrounding the site. This applies to all development including changes of use and small scale building extensions.

Amenity

3.85 For planning purposes '**amenity**' is defined as the 'the desirable features of a place that ought to be protected or enhanced in the public interest'. These features include maintaining privacy and light, and ensuring the existing and potential occupiers are protected from pollution including that in the forms of noise, odour, vibration, air, dust, insects or artificial light pollution. The potential impact of development needs to be considered on a cumulative as well as individual basis, and indirect impacts such as traffic generation as well as more direct impacts also need to be considered.

3.86 New development consistent with the **Local Plan** and the continuance of existing businesses should not have unreasonable restrictions put on it because of the introduction of new and incompatible land uses. The policy therefore takes a cautious approach to ensure that new development forms a pattern which does not adversely affect the area as a whole in the future.

Noise

3.87 Planning decisions should avoid development that would give rise to noise that would have significant adverse impacts on health and quality of life. It is recognised that development will create some noise and a business wanting to develop in continuance of their business should not be unreasonably restricted if land uses have changed around them since they were established. Therefore development which is likely to

give rise to noise pollution should not be located close to land uses that are sensitive to noise, and new noise sensitive uses such as residential development should not be located in a noisy area.

3.88 Conditions will be used to reduce the impact of noise on quality of life. A precautionary approach will be taken and it may be necessary to apply conditions such as restrictions on opening hours etc. However, these conditions need to be proportionate, reasonable and not overly restrictive to new business. The existing back ground noise level will affect the impact of noise generating uses on the area and their effect on health and quality of life, and this should be reflected in any planning conditions imposed. Proposals also need to be considered both individually and cumulatively with special consideration given to the impact noise generating uses will have on the tranquillity of a rural area.

Lighting

3.89 **Amenity** and environmental quality can be impacted in other ways including by poorly designed and managed lighting. This is a particular issue in rural parts where the relatively 'dark skies' contribute greatly to character and amenity. References to useful guidance and advice are given in the Notes below.

3.90 The importance of tranquillity to wildlife should also be recognised. Increased noise and lighting in particular can have an adverse impact on certain bat and bird species.

Policy DM 3.13 Amenity, noise and quality of life

(1) Development should ensure a reasonable standard of amenity reflecting the character of the local area. In all cases particular regard will be paid to avoiding:

a. Overlooking and loss of private residential amenity space
b. Loss of day light, overshadowing and overbearing impact
c. Introduction of incompatible neighbouring uses in terms of noise, odour, vibration, air, dusts, insects, artificial light pollution and other such nuisances.

Planning permission will be refused where proposed development would lead to an excessive or unreasonable impact on existing neighbouring occupants and the amenity of the area or a poor level of amenity for new occupiers.

(2) In considering applications which may result in an increase in noise exposure, account will be taken of the operational needs of the proposed and neighbouring businesses, the character and function of the area including background noise levels at different times of day and night and the need to protect areas of rural tranquillity.

(3) Development will not be permitted where the proposed development would generate noise or artificial light which would be significantly detrimental to the amenity of nearby residents or the occupants of other noise sensitive uses. Proportionate mitigating measures including limiting conditions will be used to reduce the potential noise or artificial light impact to an appropriate level whenever practical to do so.

Notes

- **National Planning Policy Framework** Core Planning Principles para. 17 states that planning decisions should always seek to secure high quality design and a good standard of amenity for all existing and future occupants of land and buildings
- **National Planning Policy Framework** section Conserving Natural Environment Para 122- 123 addresses the conserving and enhancing of the natural environment.
- **Joint Core Strategy** Policy 7 expects all development to maintain or enhance the quality of life and well being of communities.
- Detailed guidance on noise is provided in *Noise Policy Statement for England* - Department for the Environment, Food and Rural Affairs. http://archive.defra.gov.uk/environment/quality/noise/policy/documents/noise-policy.pdf

- The Environment Agency have produced *Guidance for developments requiring planning permission and environmental permits under the Environmental Permitting* (England and Wales) Regulations 2010 (EPR). Planning and permitting decisions are separate but closely linked. Planning permission determines if a development is an acceptable use of the land. Permitting determines if an operation can be managed on

an ongoing basis to prevent or minimise pollution. Further advice is also available in a *Guide for Developers* and on the Environment Agency's web pages.
http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/LIT_7260_bba627.pdf

- *Further detailed advice and guidance used and subscribed to by the Council's Environmental Services is available, including*:
    - Technical Guidance: Planning on noise (incl. wind turbines) - draft based on PPG24 - Norfolk Environmental Protection Group
    - Planning and Pollution in Norfolk – Norfolk Environmental Protection Group
- Useful advice on the design of lighting to control light pollution is produced by the Institute of Lighting Professionals in association with others. Of particular relevance are guidance documents focusing on reducing obtrusive light, providing reasonably adequate lighting for crime reduction, and protection of bats and other sensitive species:
    - *Guidance Notes for the Reduction of Obtrusive Light GN01* – ILP: 2011 [redacted]
    - *A Guide for Crime Reduction Professionals* – ILP / ACPO Secured by Design: 2011 [redacted]
    - *Bats and Lighting in the UK* - Institute of Lighting Engineers / Bat Conservation Trust: 2009 [redacted]
- Norfolk County Council Environmental Lighting Zones Policy expect all public highways lighting to minimise light pollution in respect of all exterior lighting installations with reference to the Norfolk County Council Environmental Lighting Zones.

3.14 Pollution, Health and Safety

Reasoned Justification

3.91 Planning decisions should take account of whether the location and site has (or is capable of) suitable environmental conditions for the development proposed. Development management decisions will focus on whether the development is an acceptable use of the land and the impacts of the proposed use, rather than the control of processes or emissions which are subject to approval under pollution control and permitting regimes[i]. Planning decisions will assume that environmental regulatory regimes operate correctly.

3.92 The planning process plays an important role in determining the location of new development that might give rise to pollution problems. It is important that site conditions and the potential direct and indirect affects of development on health, the natural environment and general amenity are assessed and appropriate mitigation identified. However, the responsibility of securing the safe development of the land clearly rests with the developer or landowner.

3.93 Three aspects of pollution and safety are addressed in more detail below (although this is not intended as an exclusive list) and regard should also be given to Policy DM3.13 that addresses amenity more generally.

<u>Contaminated land</u>

3.94 Land should be suitable for the new use, ensuring that both human health and the environment are safeguarded from unacceptable risk. Sites which are known or suspected to be contaminated should be identified at an early stage.

3.95 For such sites, an assessment by a competent person should be submitted with the application determining whether or not the site is contaminated and demonstrating adequate remediation as appropriate for the proposed use. Where the extent or existence of contamination is unclear a precautionary approach should be taken.

Air quality

3.96 Air quality in South Norfolk is generally good and whilst there are currently no declared **air quality management areas** there are several areas of concern which are approaching air quality 'limits'. Development should not worsen air quality in any air quality management area that is designated.

3.97 Equally, development should not be permitted where it is likely to result in the inappropriate location of a sensitive use into a problematic area, and specifically, the need for the designation of an area as an air quality management area.

3.98 Where development is permitted (whether by the Council or Secretary of State) a section 106 agreement will be required to provided a percentage contribution towards appropriate local air quality management activities of the Council.

Water quality and the impact of water abstraction on water courses

3.99 It is an offence under the Water Resources Act 1991 to pollute ground or surface water; the Water Framework Directive requires there to be no deterioration in 'water status'.

3.100 Part of South Norfolk falls within Ground Water Source Protection Zones 1, 2 & 3 with principal and secondary aquifers are present. These are identified by the Environment Agency and their definition is subject to change over time as a result of the updating of technical modelling.

3.101 There is also the need to protect ground water sources from abstraction which would impact on wildlife conservation in the area. Given the close proximity of The Broads

Area and other sensitive areas such as **Sites of Special Scientific Interest** and **County Wildlife Sites** it is important that consideration is given to this when formulating development proposals and these sites are protected from over-abstraction and pollution.

3.102 Developers will need to be mindful of the potential for such changes in definition and seek advice from the Council's environmental services and the Environment Agency as necessary.

Health and Safety

3.103 There are a number of installations within South Norfolk that are used for handling hazardous substances including high pressure gas and oil pipelines. Whilst these installations are subject to control under stringent Health and Safety legislation it is prudent to avoid locating new development on or within the vicinity of them.

3.104 Where appropriate the advice of the Environment Agency and Health and Safety Executive should be taken to assess any additional public risk created by a proposed development. The installations that have been identified to the Council are shown on the Policies Map.

Policy DM 3.14 Pollution, health and safety

a) All development should minimise and where possible reduce the adverse impact of all forms of emissions and other forms of pollution, and ensure that there is no deterioration in water quality or water courses.

b) When assessed individually or cumulatively, development proposals should ensure that there will be no unacceptable impacts on:

i. Air quality
ii. Surface and ground water quality
iii. Land quality and condition

iv. Health and safety of the public

c) Permission will only be granted on or near contaminated land if it is subject to remediation which will make it safe for the proposed use. On a contaminated site or one suspected to be contaminated or within 250 metres (or on more if considered appropriate on a risk based approach) of an existing or disused landfill site, applications will need to be accompanied with an assessment of the extent of contamination on the site and any possible risks.

d) Developments which may impact on air quality will not be permitted where they have an unacceptable impact on human health, sensitive designated species or habitats, and general amenity, unless adequate mitigation can be ensured. Development will not be granted in locations where it is likely to result in an Air Quality Management Area being designated or the worsening of air quality in an existing Air Quality Management Area.

e) Permission will not be granted for development on or in the vicinity of hazardous installations including high pressure gas and oil pipelines unless the development would not give rise to additional public risk.

Notes

- The Environment Agency have produced *Guidance for developments requiring planning permission and environmental permits under the Environmental Permitting* (England and Wales) Regulations 2010 (EPR). Planning and permitting decisions are separate but closely linked. Planning permission determines if a development is an acceptable use of the land. Permitting determines if an operation can be managed on an ongoing basis to prevent or minimise pollution. Further advice is also available in a *Guide for Developers* and on the Environment Agency's web pages.
  http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/LIT_7260_bba627.pdf

  Additional Guidance available from the Environment Agency in *Groundwater protection: policy and practice (GP3)*

- The **National Planning Policy Framework** section on Conserving and Enhancing the Natural Environment provides further guidance. This is consistent with **Joint Core Strategy** Policy 7.
- The **National Planning Policy Framework - Technical Guidance** addresses development affected by contamination in detail.
- Policy DM 3.14 addresses Amenity and noise.
- Anglian Water's 'Asset Encroachment' guidance should be consulted at http://www.anglianwater.co.uk/developers/encroachment.aspx
- Further specialist advice and guidance on the assessment and mitigation of pollution is available (or is now being prepared) from the *Norfolk Environmental Protection Group*:
    - Land Contamination Reports
    - Planning and pollution in Norfolk
    - Land Contamination Reports – Advice for Consultants and Developers
    - Technical Advice: Air quality and land use planning
    - Technical Guidance: Development on Land Affected by Contamination – (final draft of the specific guidance relating to contaminated land)
    - Technical Guidance: Planning and noise (incl. wind turbine) is being drafted but will be based on PPG24 assessment methodology

4.4 Natural Environmental Assets - Designated and Locally Important Open Space

Reasoned Justification

4.26 The **National Planning Policy Framework** requires not only that important designated **natural environmental assets** are protected, but requires that all development seeks positive improvements to the quality of the natural local environment jointly and simultaneously with other improvements[i]. Development should protect and enhance all natural **environmental assets** including: valued landscapes (including those influenced by man-made features), geological conservation interests and soils, and minimise impact and provide net gains in bio-diversity where possible. The National Planning Policy Framework also recognises the wider benefits of **ecosystem services** to peoples' lives and communities.

4.27 Part (a) of the Policy addresses the important natural **environmental assets** to be protected from any harmful impact arising from new development, and requires that new development contribute to the positive improvement of these natural environmental assets where opportunities arise. Sites will be identified on the **Policies Map** and in supporting evidence; the sites of highest status which are designated at International, National and County-wide level. Other important assets such as the best and most versatile agricultural land are not shown on the Policies Map but are identified in supporting evidence. It should also be noted that changes to the County Wildlife Sites register may change over the lifetime of the DPD.

4.28 Part (b) of the Policy addresses other Important Local Open Spaces that are also to be protected and positively improved where opportunities arise. These too are identified on the Policies Map as locally recognised important open spaces and natural **environmental assets** which are important to local communities and the natural environment. A small number of sites are designated as Locally Important Open Spaces where recognition is not otherwise provided in material planning policies and appraisals.

4.29 Part (c) of the Policy develops upon **Joint Core Strategy** Policies 1 and 2. More widely, the Council will work with partners to evolve strategies to ensure individual new

development sites contribute effectively to the establishment and positive improvement of coherent ecological networks that will be resilient to future pressures. The basis of these strategies for Biodiversity Enhancement Areas and multi-functional **Green Infrastructure** Networks are set out in JCS Policy 1. The Council will work with partners (including the Local Nature Partnerships (Wild Anglia), the Norfolk Biodiversity Information Service and others to develop these strategies in more detail on a priority basis, addressing areas under most pressure for change first, in order to ensure appropriate development that contributes to the enhancement of these networks. Specific detail will also be included in **Area Action Plans, Site Specific Allocations and Policies,** and community led **Neighbourhood Development Plans**.

Proposal Map designations of International, National and County-wide status

4.30 The International, National and County environmental designations are all included on the Policies Map.

Proposal Map designations of Important Local Open Spaces

4.31 A number of locally important multi-functional open spaces were identified in the South Norfolk Local Plan (2003); the need to retain some of these and also to include some new designations has been identified through the public consultation on the **Site Specific Allocations and Policies** DPD. These designations are listed below, and are shown on Inset Maps as indicated below:

(1) Poringland Conservation and Fishing Lakes Area

4.32 The Poringland Conservation and Fishing Lakes Association provides public access for leisure purposes and is in frequent use. The **Joint Core Strategy** identified that development in Poringland/Framingham Earl would have to take particular account of surface water flood issues. The fishing lakes provide a valuable attenuation area for surface water.

4.33 The designation is shown on Map 4.4 (1).

(2) Land to the west of Hethersett High School

4.34 This land was allocated for use as public open space in the **South Norfolk Local Plan (2003)**, to help meet previously identified deficiencies in open space provision in the village. Since that time, the farm buildings have been converted to residential use with some of the former open space allocation now being in residential use.

4.35 The **Joint Core Strategy** identified a need for enhanced **green infrastructure** in Hethersett. Although this site does not presently afford public access to the countryside, it forms a valuable element of the existing green infrastructure in the village.

4.36 The designation is shown on Map 4.4 (2).

(3) Old Costessey

4.37 Old Costessey is situated in the valleys of the rivers Wensum and Tud.

Woodland is of 'immense scenic importance' (Landscape Character Assessment, LUC 2001); the woodlands in the Tud and Wensum Valleys create an important backdrop of trees and areas of heavily wooded, low-density development help give the settlement its character. Two important areas of woodland fall within the Old Costessey

Development Boundary, to the north of Townhouse Road (including Green Hills) and between The Croft and Folgate Lane. Nearby Carrs Hill Wood also forms part of this feature, but is outside the Development Boundary for Old Costessey.

4.38 The designation is shown on Map 4.4 (3).

(4) Brooke

4.39 An important part of the character of the Brooke Conservation Area is derived from the prominence of trees and hedges, some are parts of private gardens, others like the Meres, part of public places. (The feature of the Meres water features tightly bound by public space and located outside of the Settlement boundary.) These features are protected as **Heritage Assets** under policy DM 4.10.

4.40 Outside of the Conservation Area, the open space at the corner of Brecon Road contributes significantly to the character of Brooke and is therefore designated as an Important Open Space designation – see Map 4.4 (4).

(5) Diss

4.41 The form and character of Diss is very heavily reliant on the contribution made by various open spaces. A landscape history research carried out by the Norfolk Gardens Trust in 1997 identified a high number of ornamental gardens but a lack of small parks and puts this down to the industrial nature of the town in the 18th and 19th centuries. As such the public open spaces that have survived and emerged since the late 19th early 20th centuries are of a particularly high value, and have an historical background.

4.42 Previously designations under the **South Norfolk Local Plan (2003)** Policy IMP 3 are the following areas:

Fair Green: Important as a space, historically as the site of the medieval market, and a key setting for a number of listed buildings on the east and south sides:

The Park: Only came into public ownership in 1960, the main public access to the Mere. The view over the park and Mere to the town is unrivalled and a key element in the setting of the town.

The Mere and banks : The presence of the Mere dictated the pattern of the town and while the gardens and yards that form its boundaries on the three sides opposite the Park, have deteriorated over time, the open leafy character survives.

Parish Fields: An interesting space with the entrance off Mount Street purposely designed to enhance the setting of The Cedars a grand listed building on the road opposite. It is possible that the house was also remodelled to present its main elevation to the west to acknowledge the land opposite.

Mount Street Gardens: The land associated with the Manor House, The Grove and Eaton Lodge on the east side of Mount Street are remains of the ornamental gardens referred to above

Rectory meadows and school playing fields: Part of these grounds was associated with the Rectory, now Mere Manor, but is an important “green lung” bisected by a footpath.

4.43 These spaces contribute significantly to the special character and appearance of the Conservation Area in not just a visual sense, but socially, historically and architecturally. The designations are shown on Map 4.4 (5).

(6) Hethersett Village centre

4.44 This public open space and the adjacent public car park was created through the housing development at Great Melton Close. It is managed by the Parish Council and forms a small ‘village green’ space at the village centre. The designation is shown on Map 4.4(6).

Policy DM 4.4	Natural environmental assets - designated and locally important open space

a) The highest status natural environmental assets are identified on the Policies Map and in supporting evidence, and will be protected from any significant harmful impact arising from new development. New development impacting on these designated sites will be required to contribute positive improvement of these natural environmental assets where opportunities arise. International, National and County-wide level sites will be accorded the highest levels of priority.

b) At the Important Local Open Spaces identified in paragraphs 4.32 – 4.44 and on Maps 4.4 (1) – (6) and on the Proposal Map, development will only be permitted where it retains the open character and appearance of the site, where it respects the contribution which the identified open site or open frontage makes to the form and character of the Settlement and where there is no significant adverse impact on the setting of any existing building. New development impacting on these designated sites will be required to contribute positive improvement of these natural environmental assets where opportunities arise.

c) Developers will need to work with partners to evolve strategies to enable individual new development sites to contribute most effectively to the opportunities for the establishment and positive improvement of coherent ecological networks, Biodiversity Enhancement Areas and multi-functional Green Infrastructure Networks.

Notes

The Broads are internationally important with a national designation equal to that of a national park and fall within the Broads Authority planning area. However, development in adjacent areas of the district could impact on The Broads and the Council will liaise accordingly.

- See strategic diagrams for Bio-diversity Enhancement Areas, **Green Infrastructure** and the Green infrastructure Priority Areas at pages 28, 29 and 62 of the **Joint Core Strategy**. More detailed mapping and description will be prepared with partners on a priority basis, to identify a positive strategy to enhance multi-functional **green infrastructure** and bio-diversity to which relevant development might support. More detailed mapping will be made available through the Council's web pages as it becomes available.

- Further detail is provided in the *Green Infrastructure Strategy* (GNDP, 2007) and the *Green Infrastructure Delivery Plan* (GNDP, 2009). The latter document maps Core Biodiversity Areas for part of the district including the Hethersett / Cringleford Area.

[redacted]

4.5 Protection and Enhancement of Landscape Character

Reasoned Justification

4.45 The landscape of South Norfolk comprises a rich and often subtle diversity of character and features, whether natural or influenced by man. Outside the limits of the main built-up centres of the market towns and larger villages, expanses of agricultural land are punctuated by scattered settlements, woodlands, trees and hedgerows, commons, rivers, broads, and heaths.

4.46 The district has a slightly undulating topography with gentle transitions. River valleys provide the greatest natural variation in landform and contrast to the arable farmed plateaus, while man-made features such as the Roman town at Caistor St Edmund, railway lines and the dual carriageway by-passes for Norwich (A47) and Wymondham (A11) have imposed their own contrasts.

4.47 Throughout the district are identified assets that have helped enrich the landscape. There are many Registered Historic Parks, such as Kimberley, which has arguably one of the finest concentrations of veteran trees in the county, and also a number of locally significant parks and gardens. In addition are remnants of former estates, such as Costessey, the plantings of which still provide significant visual reminders of a grand past. Across the district are many sites of ancient woodland, and also an identified historic hedgerow pattern in the Dickleburgh area.

4.48 The landscape of the district includes four of the National Character Areas and studies commissioned by the Council have identified seven Landscape Types that share common characteristics of geology, topography and vegetation. The parts of the district within the Broads Authority area are subject to the Broads Landscape Character Assessment. The seven Landscape Types identified within the studies for this plan are: Rural River Valley, Tributary Farmland, Tributary Farmland with Parkland, Settled Plateau Farmland, Plateau Farmland, Valley Urban Fringe and Fringe Farmland. These in turn are further divided to give more detailed analysis.

4.49 Studies confirm the distinctive characteristics and special qualities of the five identified Rural River Valleys, the Valley Urban Fringe and their constituent Landscape Character Areas, within South Norfolk that are desirable to safeguard. They contribute:

- a distinctive character and sense of place;
- contain important/rare features and landmarks and diverse habitats;
- grazed pastoral valley floors; intimate and enclosed landscape with overall small-scale character; and
- enjoy a largely intact rural character, which in places is highly tranquil and undisturbed.

4.50 The Rural River Valleys and Valley Urban Fringe Extents are identified with the Landscape Character Areas to which they contribute.

4.51 The **National Planning Policy Framework** and **Joint Core Strategy** emphasise the importance of identifying and responding to **landscape character** and distinctiveness through good design. Development proposals will be expected to demonstrate how they have taken into account the key findings from the 2001 South Norfolk Landscape Assessment as updated by the 2012 review. This will be particularly relevant when the development sits in a location with distinctive and sensitive landscape characteristics.

4.52 The landscape character areas and river valley extents (Rural River Valley and Valley Urban Fringe) are shown on Map 4.5

Policy DM 4.5 Landscape Character and River Valleys

All development should respect, conserve and where possible, enhance the landscape character of its immediate and wider environment. Development proposals that would cause significant adverse impact on the distinctive landscape characteristics of an area will be refused.

All development proposals will be expected to demonstrate how they have taken the following elements (from the 2001 South Norfolk Landscape Assessment as updated by the 2012 review) into account:

- **The key characteristics, assets, sensitivities and vulnerabilities;**
- **The landscape strategy; and**
- **Development considerations.**

Particular regard will be had to protecting the distinctive characteristics, special qualities and geographical extents of the identified Rural River Valleys and Valley Urban Fringe landscape character types.

Notes

- Core Planning Principles para 17 (point 5) of the **National Planning Policy Framework** requires planning to account for the different roles and character of different urban and rural areas and recognising the 'intrinsic beauty of the countryside'. Section 11 addresses the conservation and enhancement of the natural environment including criteria for assessing proposals impacting on landscape. Paragraph 170 calls for landscape character assessments to be prepared in areas where expansion is considered.
- Sections 7 and 11 of the National Planning Policy Framework address how the impact of development on **landscape character** should be assessed.
- **Joint Core Strategy** Objectives 8 & 9 and Policy 2 address the need to reflect landscape character
- The South Norfolk Landscape Assessment Report (2001) identifies areas of distinctive landscape characters in the district. All development proposals should demonstrate how they have taken account of these characteristics.
- The source of Map 4.5 is the **2012 Local Landscape Designations Review** work on Landscape Character Areas and River Valleys in the Norwich Policy Area, carried out by Chris Blandford Associates. This confirms the boundaries of the Landscape Character Areas arising from the 2001 study findings and the Rural River Valleys and Valley Urban Fringe Extents. These will be identified on the Policies Map.
- The **South Norfolk Place-making Guide** also provides guidance in regard to landscaping.

4.8 Protection of Trees and Hedgerows

Reasoned Justification

4.68 The value of trees, woodlands and hedgerows is widely recognised and their existence contributes greatly to the identified landscape character areas within the district. Trees can offer many environmental, economic, social and climatic benefits. By their absorption of CO_2 trees help create a significant carbon sink and therefore can play a key part in helping to combat climate change.

4.69 The Council expects all development proposals to fully consider the existing trees both on and adjacent to the site. Development will be permitted where it can be demonstrated that there exists a harmonious and sustainable relationship between trees and structures.

4.70 Where necessary the Council will protect trees using Tree Preservation Orders (TPOs) in order to retain significant trees; tools such as the TEMPO (Tree Evaluation Method for Preservation Orders) system will be used to help identify trees that are suitable for preservation. In identifying suitable trees and woodlands for protection particular regard will be given to relevant priority Biodiversity Action Plan habitats, aged/veteran trees and ancient woodland.

4.71 Hedgerows are distinctive features of the countryside and are the most traditional form of field boundary in the district. Many date back to the first enclosure of the land and some, especially in the case of those in the vicinity of Dickleburgh and Rushall, are indicators of a much older land pattern. In addition to their visual benefits the network of countryside hedgerows often contain a great range of plant and wildlife species and can form important linkages between other habitats such as woods.

4.72 The Hedgerows Regulations 1997 make it clear that the presumption is in favour of retaining hedgerows that qualify as ‘important’ unless satisfied that the circumstances justify removal. On development sites, the Council will promote and encourage the retention of hedgerows; the presumption will be for the retention of all sections of ‘important’ hedgerows.

4.73 The Council will continue to promote the planting of new trees, woodlands and hedgerows as part of new developments (see Policy DM 4.9) and to complement existing features.

Policy DM 4.8 Protection of Trees and Hedgerows

The Council will promote the retention and conservation of significant trees, woodlands and traditional orchards and will serve Tree Preservation Orders where necessary.

The Council will presume in favour of the retention of 'important' hedgerows as defined by the Hedgerows Regulations 1997.

The Council will safeguard and promote the appropriate management of protected and other significant trees and hedgerows, unless the need for, and benefits of, a development clearly outweigh their loss.

Notes

- The importance and multiple benefits of protecting trees and hedgerows is clearly identified **National Planning Policy Framework** Section 11, paragraphs 117 and 118, and the **Joint Core Strategy** objectives 1, 8 and 9.
- Policy DM 1.4 requires development to avoid environmental harm and protect local distinctiveness, and Policy DM 3.8 sets out design principles that include retaining important natural features.
- The identified Landscape Character Areas in the district are detailed in the **South Norfolk Landscape Assessment** (Vol. 1 – Landscape Types of South Norfolk, Vol. 2 – Landscape Character Areas of the Norwich Policy Area, and Vol. 4 – Landscape Character Areas of the Rural Policy Area)
- The **Norfolk Biodiversity Action Plan** prepared Norfolk Biodiversity Partnership details action plans for important habitats and species and addresses the contribution that trees and hedgerows make to environmental biodiversity.
  http://www.norfolkbiodiversity.org/actionplans/

- Detailed regulations, recommended standards and advice for development affecting trees and hedgerows include:
    - The *Hedgerows Regulations 1997*
      http://www.naturalengland.org.uk/ourwork/regulation/hedgeregs/default.aspx

    - Forestry Commission - *The case for trees in development and urban areas, 2010.*
      http://www.forestry.gov.uk/forestry/infd-88nfvy

    - *BS 5837 Trees in relation to design, demolition and construction* – Recommendations.

4.9 Incorporating Landscape into Design

Reasoned Justification

4.74 Good quality landscaping should make an important contribution to good design. All development proposals will be expected to respect the character and distinctiveness of the local landscape, its pattern, vegetation type and landform; the Landscape Character Assessment provides advice on this.

4.75 Where this is relevant the design and specification of planting should support the strategy for new **green infrastructure** and **biodiversity**, and it will need to be resilient to the impacts of climate change.

4.76 Where possible, new development will be required to incorporate areas for Sustainable Drainage Systems; appropriate landscaping will be particularly important to ensuring the successful appearance and performance of these areas.

4.77 The landscaping of new development in towns and villages should also respect local built character and the **historic environment** – the South Norfolk Place-Making Guide and Conservation Areas character appraisals highlight important characteristics and guide how landscaping design might respond. Other factors such as 'designing out crime' and facilitating pedestrian movement will also have a bearing on landscape design.

4.78 The 'soft' (planting) and 'hard' (e.g. paving, street furniture) elements of a landscape design should be an integral part of a design and development, and should be considered from the outset. The design of boundary treatments can be particularly important, for example facing onto public spaces, on the edge of settlements / open countryside and facing public highways.

Policy DM 4.9 Incorporating landscape into design

Where appropriate, detailed development proposals must demonstrate a high quality of landscape design, implementation and management as an integral part of the new development.

The provision for new planted features (such as tree belts, hedgerows, wild flowers and specimen trees) is expected to form part of development proposals from their outset and should provide an appropriate landscape setting for the scheme.

'Hard' landscape features (such as paving, kerb stones, street furniture, boundary treatments etc) will reflect and where possible enhance locally distinctive character and styles where relevant; or innovative contemporary solutions reflecting local context and reinforcing or creating local distinctiveness and the setting of the development.

Landscape schemes will be required to respect the character and distinctiveness of the local landscape and should ensure that any land remodelling respects the local topographic character in terms of height, slope, angle and character. Landscape schemes should be clearly and properly specified.

Notes

- The importance and multiple benefits of incorporating trees, and soft landscaping into development is clearly identified the **National Planning Policy Framework** Section 11 and the **Joint Core Strategy** Objectives 1, 8 and 9, and Polices 1 and 2.
- The Joint Core Strategy requires development to further the achievement of the **Green Infrastructure Strategy** and *Norfolk Biodiversity Action Plan.* *http://www.norfolkbiodiversity.org/actionplans/*

- Policies DM 1.1 and 1.4 require development to make a net enhancement of the environment and take opportunities to protect and reflect local distinctiveness. Policy DM 3.8 sets out design principles that include incorporating landscaping as an integral part of design.

- The identified Landscape Character Areas in the district are detailed in the **South Norfolk Landscape Assessment** (Vol. 1 – Landscape Types of South Norfolk, Vol.2 – Landscape Character Areas of the Norwich Policy Area, and Vol. 4 – Landscape Character Areas of the Rural Policy Area).
- The **South Norfolk Place-Making Guide SPD**, **Development in the Historic Environment SPD** and *Conservation Area character appraisals and management plans* provide guidance on appropriate landscaping http://www.south-norfolk.gov.uk/planning/4021.asp

4.10 Heritage Assets

Reasoned Justification

4.79 South Norfolk has a considerable wealth of buildings and settlements of architectural and historic interest, with important examples from a range of historical periods, architecture styles and traditional methods of construction. Local building traditions are strongly related to the local availability of materials which dictated their form of construction and appearance. These indigenous characteristics help provide a 'sense of place' and contribute towards defining the local distinctiveness of the district. The South Norfolk Place-Making Guide SPD includes an overview of local context and the key characteristics of the various parts of the district – reflecting the historic built environment and landscape setting. A programme of Conservation Area appraisals is in place to add further detail in the designated areas and the Council is developing the **South Norfolk Development in the Historic Environment SPD** to provide specific guidance for development proposals to ensure that **heritage assets** are conserved in a manner that is appropriate to their significance.

4.80 The **National Planning Policy Framework** advocates that local plan policies should aim to ensure that developments "respond to local character and history, and reflect the identity of local surroundings and materials, while not preventing or discouraging appropriate innovation". It places "great weight" on the conservation of **heritage assets**, and how they can make a positive contribution to sustainable communities.

4.81 Heritage assets are defined by the National Planning Policy Framework as "a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest". It includes nationally '**designated heritage assets'** and other '**non-designated heritage assets'**.

4.82 The National Planning Policy Framework defines 'significance' in this context as "the value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence but also from its setting."

4.83 The ‘designated heritage assets’ in the district comprise over 3400 listed buildings, 53 Conservation Areas, 37 Scheduled Ancient Monuments, and 7 Registered parks and gardens. Where practical these are shown on the **Policies Map**.

4.84 In considering whether to grant planning permission for development which affects a listed building or its setting, s66 (1) of the Listed Buildings Act 1990 requires that the decision maker shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. S72 of the Act requires that in the exercise of planning and certain other stated statutory functions, special attention shall be paid to the desirability of preserving or enhancing the character or appearance of a conservation area. Applications will be considered as to whether they result in substantial harm or less than substantial harm as set out in the NPPF.

Policy DM 4.10 Heritage Assets

All development proposals must have regard to the historic environment and take account of the contribution which heritage assets make to the significance of an area and its sense of place, as defined by reference to the national and local evidence base relating to heritage.

Change of use, alterations and extensions affecting the significance of a designated heritage asset, including its setting, must have regard to and positively respond to, that significance.

Proposals must sustain, and where possible enhance and better reveal the significance of the asset and make a positive contribution to local distinctiveness.

Proposals must show how the significance of the heritage asset has been assessed and taken into account by reference to the Historic Environment Record, suitable expertise and other evidence/research as may be necessary.

Considerable importance and weight must be given to the desirability of preserving listed buildings, their settings and the character and appearance of conservation areas. Development should avoid causing any loss to a heritage

asset, or harm to it. Substantial harm or total loss will only be justified where it can be demonstrated that it is necessary to achieve substantial benefits or where the retention of the asset is unsustainable, no viable alternatives can be identified and the harm or loss is outweighed by the benefits of bringing the site back into use.

Less than substantial harm will only be justified where there are public benefits that outweigh the harm. In carrying out this planning balance, less than substantial harm will be afforded considerable importance and weight.

Proposals which adversely affect the significance of a heritage asset will only exceptionally be permitted where clear and convincing justification is provided.

Notes

- The **National Planning Policy Framework** Section 12 addresses the conservation and enhancement of the **historic environment**
- **Joint Core Strategy** Policies 1 and 2 address the protection of **environmental assets** (including built environment and **heritage assets**) and promotes good quality design that respects the historic environment taking account of conservation appraisals and the wider landscape.
- Guidance on the historic characteristics of places in South Norfolk and how to respond to these characteristics is set out in:
    - **South Norfolk Place-Making Guide SPD**
    - **South Norfolk Development in the Historic Environment SPD**
    - *Conservation Area character appraisals and management plans* *http://www.south-norfolk.gov.uk/planning/4021.asp*

- Many known heritage assets are also catalogued in the *Norfolk Historic Environment Record* maintained by Norfolk County Council. http://www.norfolk.gov.uk/Environment/Historic_environment/NCC081336

- English Heritage produces a variety of guidance and advice on the design response of proposals which affect heritage assets, and information on the use of traditional construction techniques. http://www.english-heritage.org.uk/professional/

- Where practical the location of nationally designated heritage assets is identified on the Policies Map. *Further details of listed buildings and Conservation Areas are available from the Council's web site* and the conservation team. *http://www.south-norfolk.gov.uk/planning/4021.asp*

Local Impact Report Appendix C

List of Major TCPA's for Cumulative Consideration

2018/0111: Land East of A140, Long Stratton

Land East of the A140: Hybrid Application on 131.7 hectares of land to the east of the A140 seeking outline planning permission for 1275 no. dwellings, 8 hectares of employment land for uses within Classes B1, B2 and B8, 2-hectare primary school site, community facilities site, associated infrastructure and public open space. Together with application for full permission for a bypass including roundabouts and junctions. Approved with Conditions.

2018/0112: Land West of A140, Long Stratton

Land West of the A140: Hybrid Application on 40.8 hectares of land to the west of the A140 seeking outline planning permission for 387 no. dwellings and 1.5 hectares of Class B1 employment land, associated infrastructure and public open space. 1.5ogether with application for full planning permission for a western relief road (including a roundabout access at the north to the A140 and a priority junction access to Swan Lane at the south) and with phase 1 housing consisting of 213 no. dwellings, associated infrastructure and public open space. Approved with Conditions.

2021/0569: Land East of Cranes Road, Hethel (Ask Tim if commenced??)

Proposed Development for installation and operation of ground-mounted solar farm and energy storage system. together with inverter platforms; control room; DNO station; storage containers; battery storage; security fencing & CCTV; temporary construction compound; and enhanced landscaping & ecological management. Approved with Conditions.

2021/1569: Land North and South of Norton Road, Loddon

Outline application for up to 130 open market and affordable dwellings, with all matters reserved except access. Pending Consideration.

2021/2437: Land East of Beccles Road, Loddon

Hybrid Application: Outline planning permission for a phased development for the erection of 9 self-build dwellings with all matters reserved except access. Full planning permission for the erection of 171 dwellings with access, parking, open space and landscaping. Approved with Conditions.

2021/2495: Land North and South of brick Kiln Lane, Swainsthorpe.

Installation of a solar farm comprising ground mounted solar panels, access tracks; inverter/transformers, substation; storage, spare parts and welfare cabins, underground cables and conduits, perimeter fence; CCTV equipment, temporary new site entrance and access track, temporary construction compounds, and associated infrastructure and planting scheme. Application is accompanied by an environmental statement. Approved with Conditions.

2021/2645: Land North of Stoke Lane, Dunston

The installation and operation of a Battery Energy Storage System to provide standby emergency electricity for National Grid in times of high electricity demand or when renewable energy projects are unable to fulfil demand. This would be for the installation of 130MW of modular battery units with ancillary equipment, including power conversion units, 132kV transformer compound, metering cabinet, switch room, DNO control room and welfare container. Approved with Conditions.

2021/2784: Land South West of Alan Avenue, Newton Flotman

Construction of 31 new dwellings (Class C3) with associated landscaping, drainage and highway works. Approved with Conditions.

2022/0067: Land to the East of Mendham Lane, Harleston

Proposed planning application for 354 residential dwellings, 91 extra care apartments, 16 extra care bungalows, public open space, allotments and 1.61ha of land for community use together with associated site infrastructure, demolition of existing agricultural buildings. Approved with Conditions.

2022/0867: Land East of Main Road, Swardeston

Construction and operation of Energy Balancing Infrastructure (EBI) comprising energy storage technology, to form up to two areas of modular or containerised structures. To include containerised or modular battery array, transformers and inverter area, switchgear and control room building(s), connection of EBI plant to the Hornsea Three Onshore Converter Station (ONCS), required access and internal roads, drainage systems, perimeter and internal fences, and required external lighting and lightning pylons. Development is located within the Hornsea Three ONCS area as consented by the Hornsea Project Three Offshore Wind Farm

Development Consent Order (DCO) in December 2020. The application is accompanied by an environmental statement. Approved with Conditions.

2022/2148: Land North of Caistor Lane, Caistor St Edmunds

Hybrid Application: Part 1. Detailed proposals for a 25.5 hectare country park together with associated infrastructure. Part 2. Outline proposals with all matters reserved, except for access, for a residential development of up to 178no. dwellings, serviced site for a new 420 place primary school, serviced site for a new community building, Step 7 FA Standard football pitch and a package of improvements to Caistor Lane. Approved with Conditions.

2022/2350: Ipswich Road, Dunston

Installation of underground electrical connection and communication cables between Bloy's Grove Solar Farm and Norwich Main Substation, with Temporary Construction Compound and associated infrastructure. Application is accompanied by an environmental statement. Approved with Conditions.

2023/0009: Land South of Cantley Lane, Ketteringham

240 MWp Battery Energy Storage System (EIA Screening Opinion). EIA not required.

2023/0617: Land North of Hickling Lane, Swainsthorpe

Construction and operation of a battery storage facility, underground cabling, fencing, drainage infrastructure, landscape planting and site access road on land to the north of Hickling Lane and up towards the Norwich National Grid Substation. Approved with Conditions.

2023/0908: Land at the junction of Gowthorpe Lane and Main Road, Swardeston

Development of 43 new dwellings and associated external works. Pending Consideration.

2023/1055: Land off Marsh Lane, Bracon Ash

Ground mounted solar array and ancillary equipment. Approved with Conditions.

2023/1386: Land South of Church Road, Woodton

Residential development for 50 dwellings with parking, landscaping and open space. Approved with Conditions.

2023/1418: Land North of Spirketts Lane, Harleston

Erection of 89 dwellings with associated landscaping and external works. Approved with Conditions.

2023/2037: Land West of Hethel Engineering Centre, Chapman Way, Hethel

Hybrid Application: 1) Outline planning application (including access and scale) for the development of modern facilities to support Lotus' production requirements. Proposals include new manufacturing (B2), production (B2), logistics (B8) and office (E(g)) buildings. (Note: Logistics B8 is purely for Lotus requirements only). 2) Full application for new road infrastructure to facilitate masterplan and improve access by mitigating width restrictions to Potash Lane. Approved with Conditions.

2023/3020: Former Site of 49 High Green, Brooke

Erection of 7 x single storey dwellings, 1 x two storey dwelling, garages and construction of a vehicular access. Approved with Conditions.

2023/3506: Land North of Beccles Road, Loddon

Outline planning permission for up to 85 dwellings, creation of new vehicle access, public open space, associated infrastructure and landscaping with all matters reserved except for access. Approved with Conditions.

2023/3610: Land South of Spirketts Lane, Harleston

Residential development of 162 dwellings with associated access, parking, open space, landscaping and surface water attenuation. Approved with Conditions.

2023/3857: Land West of The Fields, Tacolneston

Development of 21 dwellings, garaging, open space, vehicular and pedestrian access, drainage and other associated works and infrastructure. Pending Consideration.

2023/3858: Land at Norwich Main Substation, Dunston

Underground point of connection cables (for battery storage development) located beneath non-operational land within the Norwich National Grid Main Substation. Approved with Conditions.

2024/2476: Land West of Hall Road, Winfarthing

Outline planning permission for 21 dwellings with all matters reserved. Approved with Conditions.

2024/1245: Phase 1 and West of A140, Norwich Road, Long Stratton

Variation of condition 7 of 2018/0112 - amendments to house types and corresponding changes to layout and landscaping (phase 1 only). Approved with Conditions.

2024/1336: Norwich Main Substation, Dunston

Extension of the existing Norwich Main 400 kV Substation to the west and includes associated temporary access roads. Works include:

Extension of the existing substation platform to the west by approximately 250m x 188m. Extension of main and reserve busbar to accommodate addition of customer bays. New bus sections. Bus couplers and circuit breakers. Infrastructure works for customer connections. Extension of substation perimeter to accommodate the new infrastructure and the delivery of a minimum of 10% biodiversity net gain, linked with the proposed Landscape Mitigation Strategy. Approved with Conditions.

2024/1734: Land East of Main Road, Swardeston

Variation of conditions of permission 2022/0867 (Construction and operation of Energy Balancing Infrastructure (EBI) comprising energy storage technology, to form up to two areas of modular or containerised structures. To include containerised or modular battery array, transformers and inverter area, switchgear and control room building(s), connection of EBI plant to the Hornsea Three Onshore Converter Station (ONCS), required access and internal roads, drainage systems, perimeter and internal fences, and required external lighting and lightning pylons. Development is located within the Hornsea Three ONCS area as consented

by the Hornsea Project Three Offshore Wind Farm Development Consent Order (DCO) in December 2020. The application is accompanied by an environmental statement.)- Condition 2 - Approved Plans, Condition 4 - Construction Traffic Management Plan, Condition 6 - Drainage Strategy, Condition 7 - Code of Construction Practice, Condition 9 - Soft Landscape works, Condition 10 - Ecological Mitigation, Condition 11 - Tree Protection. Pending Consideration.

2024/3750: Hall Farm, Land North of Hickling Lane, Swainsthorpe

The development of a 400MW Energy Storage System, including a 132-400kV substation and associated infrastructure. Approved with conditions.

2024/3786: Land North and South of Brick Kiln Lane, Swainsthorpe

Variation of conditions 1 (time period of permission), 2 (approved plans), 3 (decommissioning) 7 and 8 (site access) of 2021/2495. Approved with Conditions.

2024/3817: Land to the North of Station Road, Tivetshalll St Margaret

Solar photovoltaic (PV) farm development with ancillary infrastructure, security fencing and access. Approved with conditions.

2024/3858: Land north of Hickling Lane, Swainsthorpe

Variation of conditions 2, 3, 4, 5, 6, 9, 10, 11, 12, 13 & 15 of 2023/0617 - (2) Revised plans, (3) Access Design, (4) HGV Parking, (5) On-site Parking for Construction Workers, (6) Construction Traffic Management Plan (CTMP), (9) Landscaping Plan, (10) (Landscape & Ecological Management Plan (LEMP) , (11) Lighting, (12) Arboricultural Impact Assessment, (13) Archaeology & (15) FRA & SWDS. Pending Consideration.

2025/0004: Land West of Mill Road, Winfarthing

19 no. dwellings, public open space provision, 2 new vehicular accesses off Mill Road / The Street and associated site works. Pending Consideration.

2025/0806: Land West of Wymondham Road, Bracon Ash

The installation of a Battery Energy Storage System (BESS) including associated infrastructure and landscaping. Approved with Conditions.

2025/1150: Land North of Church Road, Aslacton

Outline planning application with all matters reserved (except access) for the erection of up to 36 dwellings, including amenity space, landscaping and all associated infrastructure. Development Management Committee authorised approval subject to S106 and Nutrient Neutrality resolution.

2025/1152: Land North of Hill Farm, Wacton Road, Forncett St Peter

The installation of a Battery Energy Storage System (BESS) including associated infrastructure and landscaping. Approved with Conditions.

2025/1442: Land East of Back Road, Yelverton

Construction and operation of a circa 15MW Solar Farm, comprising the erection of solar panels mounted on metal frames, centralised inverter housing, spares container, new access tracks, underground cabling, perimeter fencing with CCTV cameras and access gates, temporary construction compounds, landscaping, and all ancillary grid infrastructure and associated site works. Development Management Committee authorised approval subject to PRoW resolution.

2025/1689: Land North of the junction of Market Lane and Carr Lane, Great Moulton

Erection of a Battery Energy Storage System (BESS) and associated infrastructure including access, drainage, landscaping and other incidental works. Pending Consideration.

2025/2000: Land South of Semere Lane, Dickleburgh

Installation and operation of a solar farm together with all associated infrastructure, works and equipment, including landscape and ecological enhancement and access for a temporary period of 40 years. Pending Consideration.

2025/2275: Land East of Mulbarton Road, Keswick

Construction and operation of a Battery Energy Storage System (BESS) and associated infrastructure including battery container units, medium voltage stations, 400/132/33kV substation, 2 No. 33kV customer substation, DNO control room, storage and welfare containers, fire water pumphouse, water storage tank, CCTV cameras, fencing, security gates, access tracks, landscaping and attenuation pond. Pending Consideration.

2025/2789: Land East of Norwich Road, Tacolneston

15 No. residential dwellings with access road, open space, landscaping, drainage basin and other associated infrastructure. Pending Consideration.

2025/2855: Toadabode, Woodrow Lane, Great Moulton

Outline planning permission for 7 no. detached residential dwellings all matters reserved except layout and scale. Pending Consideration.

2025/2930: Land off St Mary's Road, Long Stratton

Development of 45 affordable residential dwellings together with associated public open space, landscaping, highways and engineering works. Pending Consideration.

2025/2952: Roadside Nurseries, Main Road, Swardeston

Demolition of former nursery buildings and application for full planning permission for the erection of 30 No. dwellings and associated infrastructure. Pending Consideration.

2025/3955: Land East Bungay Road, Poringland

Outline application (all matters reserved except vehicular access) for the construction of up to 160 dwellings together with new vehicular access, parking, public open space, play space, attenuation basins and enhanced landscaping. Pending Consideration.

2025/3957: Land South of Swan Lane, Tharston

Outline application (with all matters reserved except for vehicular access) for the construction of up to 103 dwellings together with new vehicular accesses, parking, public open space, play space, attenuation basins and enhanced landscaping. Pending Consideration.

2026/1895: Wild Rose Farm, Ipswich Road, Long Stratton

Demolition of two poultry sheds and replacement with two new sheds; construction of additional new poultry shed; new access road to serve the wider farm site, together with associated landscaping and operational development. Pending Consideration.

2026/1407: Land Adjacent Peartree Farm, The Street, Tivetshall St Mary

Outline planning permission for up to 21 dwellings, with all matters reserved (except means of access), including new access from The Street, new pedestrian and cycle access from Mill Road, open space, landscaping, drainage, and associated infrastructure works. Pending Consideration.

2026/1819: Land North and South of Stoke Lane, Swainsthorpe

Request for Screening Opinion under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 in relation to proposed solar photovoltaic installation

2026/2226: Land West of A140, Norwich Road, Long Stratton

Submission of Reserved Matters pursuant to outline planning permission ref. 2024/1245: access, appearance, scale, landscaping, layout, and levels: 76 no. dwellings, public open space, and associated works, Long Stratton West - Phase 2 [The outline planning application was an EIA application, accompanied by an ES]. Pending Consideration.

List of DCO's for Cumulative Consideration

EN020027: Norwich to Tilbury (South Norfolk)

EN010080: Hornsea Project Three Offshore Windfarm (South Norfolk)

EN010109: Sheringham and Dudgeon Extension Projects (South Norfolk)

TR010037: A47-A11 Thickthorn Junction (South Norfolk)

TR010040: A47 Blofield to North Burlingham (Broadland)

TR010038: A47 Tuddenham to Easton (South Norfolk)

EN0110019: EcoPower Suffolk Solar (Mid Suffolk)

EN010060: Progress Power Station (Mid Suffolk)

EN0110010: High Grove Solar (Breckland)

EN0110013: The Droves Solar Farm (Breckland)

South Norfolk Council
Horizon Centre
Peachman Way
Broadland Business Park
Norwich
NR7 0WF

[redacted]
Infrastructure Planning Director
By email: [redacted]@stantec.com

18 December 2024

Dear [redacted]

Planning Act 2008: East Pye Solar Project

South Norfolk Council's Response to the informal public consultation to the non-statutory pre-application consultation undertaken by Island Green Power Ltd (IGP) for the proposed East Pye Solar and Battery energy storage system (BESS) Nationally Significant Infrastructure Project (NSIP).

The proposed NSIP, known as East Pye Solar, looks to deliver up to 500 megawatts (MW) of homegrown, renewable electricity through ground-mounted solar photovoltaic (PV) panels. We are advised this would be enough electricity to power approximately 115,000 homes and businesses annually. The Project would also include a battery energy storage system (BESS). This would provide a balancing system for the grid, allowing electricity generated by the PV panels to be stored at times of low demand, then exported onto the system when demand increases. The sites currently being considered to host the solar PV, BESS, substation and associated equipment are at multiple locations, amounting to approximately 1,100 hectares (2,718 acres) of land.

The Council understands that the project would assist in meeting the UK's energy ambition to achieve net zero carbon emissions by 2050 and the Government's Clean Energy target of 2030. The provision of clean energy, however, needs to be balanced with the impacts the proposed project will have on our District such as on our landscape; heritage assets; loss of agricultural land when food production is a vital part of our economy and nationally in terms of food security; and our communities who host these projects but receive no direct benefits. The Council is aware of a number of NSIP Solar Farms potentially coming forward within this part of South Norfolk, together with existing and proposed TCPA schemes, the cumulative impact of which these will have on our District is of concern.

Main Technical Issues/considerations

The Project will be classified as 'EIA development' under the Infrastructure Planning (EIA) Regulations 2017. As such Island Green Power Ltd is required to undertake an EIA for the Project, which for an NSIP requires an EIA Scoping Report which defines and agrees the

scope of the Environmental Statement with the Planning Inspectorate – the Council has been advised that a Scoping Opinion request will be submitted in the first part of 2025; and a Preliminary Environmental Information Report (PEIR) will provide preliminary details of the environmental information and preliminary findings of the EIA undertaken.

Given the information provided by the developer is very limited due to the stage the project is presently at, the following are the main issues the Council would like to raise in this response and wishes to reserve the right to raise other issues as the project moves forward to the Statutory public consultation.

Impact on Heritage Assets

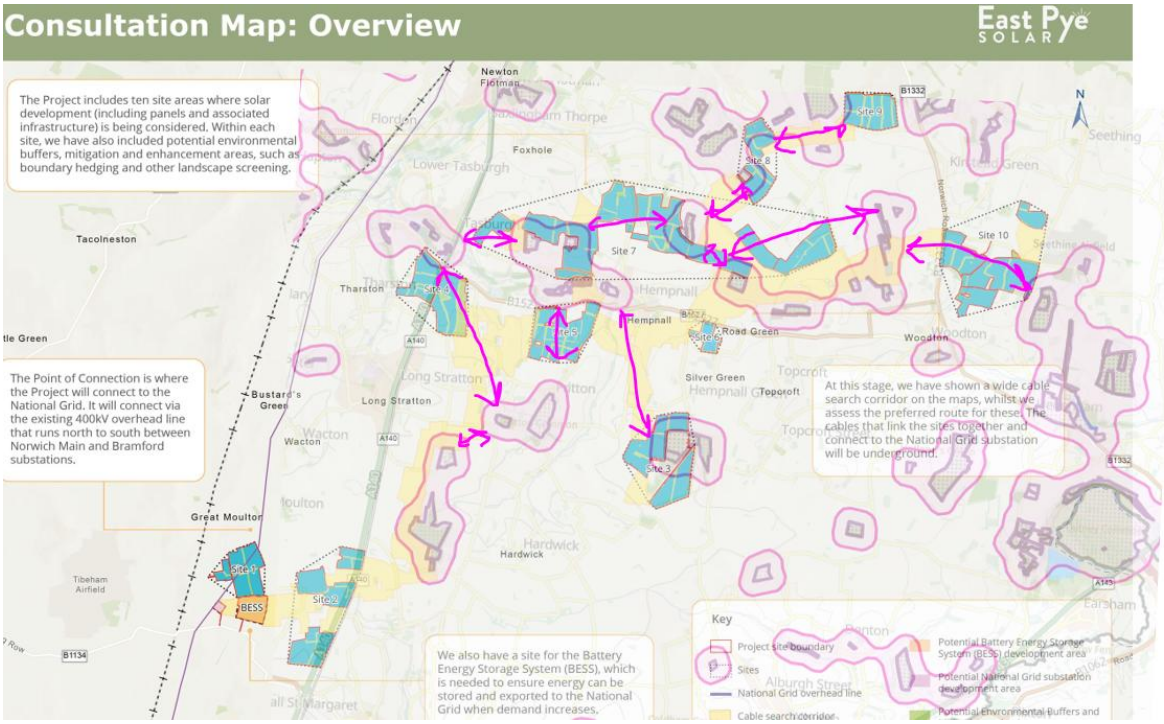
The EIA should include a Heritage Impact Assessment. At this point no information has been provided to comment upon. The Council's Senior Heritage and Design Officer would however, comment that the long Stratton bypass needs to be taken into account, especially the new views that will be created towards St Michael's church from the new footbridge etc which have importance in terms of the connection from Long Stratton to the church (there is an existing parish footpath).

The Council will also expect non-designated heritage assets to be identified that will likely be affected and whilst any assessment needs to be proportionate to their significance, the degree of impact should not be considered to be less simply because of the generally lower level of significance of non-designated heritage assets compared to designated heritage assets; the level of impact needs to be judged on how it may impact on the characteristics of each particular asset.

Impact on Ecology

The Council's Ecologist has commented as follows:

Biodiversity Net Gain: EN-1 Overarching National Policy Statement for Energy sets out national policy for energy infrastructure, affecting decisions by the Secretary of State on NSIP applications for energy development. Section 4.6 relates to Environmental and Biodiversity Net Gain. To paraphrase, the statement expects energy NSIPS to contribute to and enhance the natural environment by providing net gains for biodiversity, and are encouraged to do so via submission of the latest version of the biodiversity metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes (noting that this data should be presented in full as part of their application). It would therefore be expected that the application to the Secretary of State would comply with EN-1 and demonstrate, as part of the EIA, how the proposal will deliver a net gain. The Norfolk Local Nature Recovery Strategy is due to be published in 2025 (a draft is expected shortly) but in the interim https://norfolkcounty.maps.arcgis.com/apps/instant/atlas/index.html?appid=a9fab5d2d4834b00b7a8e39dab09ae1f will assist in helping to identify wider environmental outcomes for example restoration of ghost ponds, and creating bigger, better and more joined up habitats. Natural England have also recently release 'The Environmental Benefits from Nature Tool available here 'https://publications.naturalengland.org.uk/publication/6414097026646016) which should be used to inform the application, to help identify/enable wider benefits for people and nature from BNG. On the map below I have overlaid the Lawton zones map with the proposal which demonstrates how the proposal could help link up biodiversity sites. Similarly, restoration of ghost ponds would be strongly encouraged alongside enhancement of existing ponds. I would also look at the Long Stratton bypass landscape scheme as this could help inform the BNG plan.



The proposed solar farm has an anticipated lifespan of 60 years, so it would be expected that habitats are managed and monitored for the duration (with updated management and monitoring plans secured via the DCO, to be submitted to the LPA at appropriate intervals). At the end of the lifespan of the solar farm it would be expected that habitats would be retained rather than restored to former use, although a decommissioning environmental management plan should be provided. Consideration could also be given to utilizing any additional biodiversity units delivered.

Consideration should also be given to the use of locally sourced green hay, and how the proposed meadows would be managed given that mowing and removal of arisings would be difficult because of the arrays. Meadows require soils with poor nutrients (which is achieved in part by removal of arisings), however the proposed fields are agricultural in nature and thus likely to be nutrient rich (pH will also be important). The submission will need to show how poor soil nutrients be achieved?

Fencing: Due to the scale of the proposal fencing plans will need to consider movement of animals (including deer). Badger gates would not be favoured to prevent them being locked (suitable gaps on runs/ set at regular intervals would be acceptable.

CCTV: Any lighting required for CCTV would need to be designed with regard to potential impacts on nocturnal wildlife.

Mapping Scale: It is requested that consideration be given to the scale of maps when presenting data (e.g. UK Habs.) due to the scale of the proposal. The maps/plans need to be legible (GIS shape Files would be ideal as we can zoom in and out and turn layers on and off).

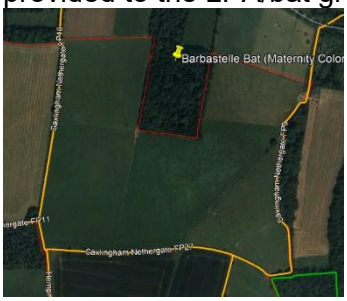
Barbastelle Maternity Colonies: From the meeting on the 27th November, I note you have been engaging with Natural England and have discussed (and hopefully) agreed the scope of the ecological surveys. However, I would like to draw to your attention known a barbastelle maternity colony at Tyrells Wood (adjacent to the search area for the cable route) and in woodland surrounded on two sides by Site 7 (data available via British Island Bats Volume

one. and via Norfolk and Norwich Bat Group).

In 2023 research by Bristol University found a strong negative effect of solar farms on foraging and commuting bats. I would encourage further engagement with Natural England specifically regarding barbastelle bats, and the survey methodology (with specialist survey methods (radio tracking) utilized) to establish if the colonies still utilize woods adjacent and in close proximity to the proposed panels. Consideration will need to be given to the mitigation hierarchy with regards to siting the solar panel sites (e.g. site 7) – I would be concerned about the proposed enclosure of woodlands, and possible fragmentation caused by the solar panels on bats.

The EIA will need to consider the impacts on bats, and specifically barbastelle.

If the DCO is granted it would be asked that ongoing monitoring is undertaken (with the results provided to the LPA/bat group etc.



Drainage: For your information remedial drainage works to field drains have been required post DCO on a long distance onshore cable scheme. Due to the nature of the agreement the applicant needed to submit full planning applications to the LPA to carry out these works. Because of this they have been caught by BNG.

Lighting: It would be anticipated that a lighting strategy aligned with Bat Conservation Trust guidance forms part of the submission. This will ensure impacts to bats and other sensitive species are minimized as far as possible and this will be included in the construction, operational and decommissioning environmental management plans.

EPS Licensing (Mitigation/Compensation): As discussed at the meeting on the 27th November, please liaise with the DLL licensing team at Natural England to ensure there are sufficient ponds to compensate impacts of the proposal as well as ensure plentiful supply for other developments (in 2024 there was a deficit of DLL ponds in Norfolk caused, in part, by NSIPs, which affect other development. Enhancement of existing ponds would also be expected.

The submission should also demonstrate how mitigation measures for different impacts will be delivered alongside each other.

Desk Top Study: Norfolk Biodiversity Information Service will be contacted for species data but there is a lot of ecological information available in ecological reports associated with planning applications which I would encourage you to acquire e.g. 2022/1803.

County Wildlife Sites and Roadside Nature Reserves: The red line effects (incorporates/surrounds) several County Wildlife Sites:
CWS 107 Lower Spring Wood, CWS 2035 Beckett's Wood, CWS 106 Saxlingham Grove, CWS 112 Nunn's Grove, CWS 100 Fritton Grange Meadows, CWS 105 Pope's Wood, CWS 2110 D'Oyly's Grove, CWS 90 Spring Wood, Hempnall, CWS 97 Wood Green (for GCN), CWS 99 Tyrels's Wood and New Plantation (rough list). It would be expected that the mitigation hierarchy is adhered to and any impacts to CWS avoided.

Negative impacts on Roadside Nature Reserves would also be expected to be avoided e.g. by careful consideration of the location, and Horizontal Directional Drilling.

Landscape and Visual

A full Landscape and Visual Impact Assessment should be part of the EIA, undertaken in accordance with the accepted industry guidance. The Council is reviewing - under separate correspondence - proposed viewpoints as submitted by the project's landscape architect; at this stage - due to both the scale of the scheme and resource limitations - consideration of these is likely to be based on desk study only.

Due regard should be given to South Norfolk Landscape Character Assessments when producing the Landscape Visual Impact Assessment for the EIA. The Landscape Character Assessments are comprehensive, detailed studies of the landscape and environment. In 2001 Land Use Consultants undertook a Landscape Character Assessment of the South Norfolk District.

This work was updated and reviewed by Chris Blandford Associates in 2012 to provide evidence to support the emerging new Local Plan. The Chris Blandford Associates 'South Norfolk Local Landscape Designations Review' work should be read in conjunction with the 2001 Landscape Character Assessment.

The Council will expect Island Green Power Ltd fully consider cumulative landscape impact of the project, including the existing infrastructure in the area.

Existing Trees and Hedgerows

It is expected that there will be tree survey information and arboricultural assessment sufficient to illustrate any anticipated implications of the proposed scheme both on and off site. Any existing hedgerows that are proposed for removal are to be assessed against the 'importance' criteria of the Hedgerows Regulations.

Our local plan policy DM4.8 presumes retention of important hedgerows unless the need for, and benefits of, a development clearly outweigh their loss.

Landscape proposals

In addition to mitigation, opportunities for landscape enhancement should be demonstrated that accord with the strategies set out in the Landscape Character Assessment. Works to reinstate, restore and rejuvenate existing landscape features are encouraged and a long-term management plan for the full life of the scheme will be expected.

Noise and Pollution

The key noise and pollution considerations are the impacts of the construction of and the operation of the proposal on the amenities on local residents.

In view of the above, with regards to specified works to be undertaken issues relating to Control of Noise, Air Quality, Artificial Light, Waste Management, Pollution Prevention, Contamination Assessment and Mitigation, Glint and Glare and Working Hours should be submitted as part of a detailed construction management plan. The Council wishes to be assured that issues relating to hours of construction, siting of any standby generators, good

practise procedures, prior notification of constructional noise, floodlighting, movement and storage of waste materials, public safety, dust control, emissions are addressed. Equally a Health Impact Assessment to form part of the EIA, which specifically addresses electronic magnetic radiation.

Economic Development and skills

Island Green Power Ltd are requested to produce a Skills and Employment Strategy to deliver training, skills, and employment opportunities to the local economy. It is essential to South Norfolk that the economic benefits are maximised for the communities that are hosting the project which could have a significant impact on their environment.

Economic Impacts – existing businesses

The Council considers the proposal could have a potential detrimental impact on a number of established businesses in the district and we will expect full consideration of the businesses affected by the project.

Concerns have already been raise regarding Tibenham Airfield and the potential impact glint and glare from the project could have in terms of the operation of that commercial airfield.

Bringing Power into Norfolk

The proposals as set out, do not bring any direct or immediate benefit to Norfolk in terms of bringing clean energy to existing, planned development. Norfolk has significant planned housing and employment growth and therefore Island Green Power should give consideration to how Norfolk could potentially benefit from the project.

Community Benefits

The Council is aware that other developers have and are proposing to provide Community Funds for the benefit of those communities affected by NSIP's. It is requested that Island Green Power equally commit to providing a Community Benefit Fund to seek localised benefits to South Norfolk communities to offset the impacts the project will create.

Tourism and visitors

South Norfolk with its Market Towns of Diss, Harleston, Loddon and Wymondham; numerous Heritage assets including Saxon and Norman Churches; the Waveney Valley; Boudicca Way; museums; walking and cycling routes; associated accommodation; and venues for example, provides a rich tourism/visitor offer. The Council considers a full assessment of the impacts of the project would have on known features, directly and indirectly should be provided.

Yours sincerely

[redacted]

[redacted]

Assistant Director – Planning
South Norfolk Council

South Norfolk Council
Horizon Centre
Broadland Business Park
NR7 OWF

The Planning Inspectorate
The Square,
Temple Square House,
Temple Quay
Bristol BS1 6PN

Date: 12 February 2025

Dear Sir/Madam.

Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (The EIA Regulations) – Regulations 10 and 11

Application by East Pye Solar Limited (the applicant) for an Order granting Development Consent for the East Pye Solar (the proposed development)

Scoping Consultation

Thank you for your consultation dated 15 January 2025. We have reviewed the documents submitted and would like to make the following comments. The technical officer-level comments are made without prejudice basis and South Norfolk Council as host Local Authority reserves the right to make further comments during the Development Consent Order process.

South Norfolk Council considers in general that the Scope of the documents are sufficient to meet the requirements of the assessment of the project from our areas of expertise. However having regard to the documents submitted we would comment as follows, these comments follow on from our response to the applicant's non-statutory consultation:

Landscape and Visual

A full Landscape and Visual Impact Assessment should be undertaken, including where necessary a Townscape Assessment. This should consider all potential impacts, both during construction and in operation, and the cumulative impacts with other TCPA and NSIPs where appropriate.

Specific comments:

Arboriculture

- As existing trees and hedgerows are an undisputed feature of the sites and receiving landscape it is expected that tree surveys will be available to inform the scheme's detail design and be part of the submission for examination. From experience of previous NSIPs we do not consider that this can be left until final design as proposed in 5.13.3. Without detailed surveys of (at least) the potentially affects areas, it is difficult to fully weigh up the implications of the proposals.

- Furthermore, whilst the Scoping refers to the Hedgerows Regulations a few times, there is no specific reference to 'important' hedgerows and a presumption of their retention.

Consultation

- Just to confirm that, further to the situation described at 7.4.48, we have now provided notes on all the proposed viewpoint locations.

Ecology and Biodiversity

The EIA should consider ecological impacts associated with construction, operation (and maintenance) and decommissioning phases. Ecological surveys are currently being undertaken. The Council notes that the EIA will consider the ecological mitigation hierarchy, but it should also consider the biodiversity net gain hierarchy. A minimum of a 15 m buffer is requested around County Wildlife Sites as part of measures to avoid impacts on them.

Specific comments:

Ecological Surveys

- The Zone of Influence also needs to consider the Core Sustenance Zones for different bat species. Consideration should also be given to undertaking of surveys of trees within (I would suggest) 15 m of the site boundaries to consider impacts on roosts within proximity to the site which could be impacted. The Scoping Areas, and the scope of surveys, should be agreed with Natural England. Species surveys would be expected to be undertaken in line with best practice, and by suitably qualified and experienced ecologists. With regards to general biodiversity enhancements consideration should be given to veteranisation, and creation of natural roosting features in preference to installation of bat/bird boxes.

Great Crested Newts

- Re para 8.5.30 - Natural England have advised that there is a limitation on the availability of compensation ponds in Norfolk in 2025 with DLL being available for developments needing 1 or fewer compensation ponds. East Pye should therefore consider undertaking surveys to ensure that you have sufficient data to inform a mitigation licence application if DLL is unavailable.

Badgers

- Re para 8.5.40 - the Badger Trust updated the badger surveys guidelines in 2024 which should inform the assessment.

Ancient/veteran trees

- Re para 8.7.2 – consideration should also be given to the buffers around veteran/ancient trees, and consideration to vehicle tracking movement in their vicinity.

Ancient woodland

- Consideration should be given to the possible presence of ancient woodland where parcels are smaller than 2ha.

In combination impacts

- South Norfolk Council presently has a TCPA application for a solar farm 2024/3817 whose boundaries overlap with East Pye.

SuDS

- SuDS should be enhanced for the benefit of wildlife, with standing water provided.

Cultural Heritage

The EIA should include a Heritage Impact Assessment. The Council will also expect non-designated heritage assets to be identified that will likely be affected and whilst any assessment needs to be proportionate to their significance, the degree of impact should not be considered to be less simply because of the generally lower level of significance of non-designated heritage assets compared to designated heritage assets; the level of impact needs to be judged on how it may impact on the characteristics of each particular asset.

Specific comments:

- We are concerned at para 9.4.6 which states “As non-designated heritage assets can be identified during the planning process it is proposed to undertake consultation with South Norfolk Council to confirm whether they consider any historic features within or surrounding the Site to be non-designated heritage assets.” The Council expects the applicant to identify/initially select sites of potential assets.

- With regard to some wording used in the Scoping, Page 224 of the statement states “Proposals which adversely affect the significance of a heritage asset will only exceptionally be permitted where clear and convincing justification is provided.” Para 213 of the NPPF states “Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification”. This is different phrasing, and The Council would suggest that reference is made to ‘harm’ as well as ‘adversely affects’. Also, any harm should require clear and convincing justification. and should be weighed against public benefits.

- It is important to consider impact from permanent access roads (for example disrupting historic field patterns and access) as well as the fields where the equipment and solar panels will be located.

<u>Environmental Impacts</u>

- In 5.2.11 the table indicates that PM2.5 will be compared against 20ug/m3 where The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 state the legal limit to be 10ug/m3 by 2040 with an interim target of 12ug/m3. The Council considers this should be corrected.

Consultation:

- Additionally, we note that in section 11.4.17 the report states that South Norfolk Council have not responded to the Noise Method Survey Statement. This is incorrect as we responded to the applicant on the 14th of November 2024.

<u>Cumulative Impacts</u>

South Norfolk Council are aware from the TEC register that there are a number of NSIP level projects as below:

Noventum – Long Stratton 460MW solar farm and BESS and connection to North Anglia Connection Node A 400kv
Elmya - Gissing by RPC (Renewable Power Capital) Elmya Carnation Devco ltd - 900MW solar farm and BESS with connection to North Anglia Connection Node A 400kv.
ENSO Green - Long Stratton– Solar Farm 400MW and connection into North Anglia Node A.

Whilst none of these are at pre-application stage at this point in time and it is appreciated therefore cannot be therefore be taken into account, given the need for energy delivery by 2030, it is considered that one or more will come forward during this projects Development Consent Order process. The Council would expect should this occur that, given the location of these projects that the cumulative impact assessment will need to be carried out.

Equally the impacts of TCPA applications and pre-applications/scoping opinions should be considered, the details of which are available on the Council’s website and can also be provided by the Council.

<u>Social Economics</u>

South Norfolk l considers that this topic should be scoped in. The effects and disruption for local business should be fully assessed for Construction and Operation, as well as the significant cumulative effects This is considered relevant given the proximity of the known NSIP Norwich To Tilbury Consultation. We also consider the EIA will need to consider appropriate mitigation and compensation to these groups given the large scale of the development proposed and longevity of the project. Equally, South Norfolk with its Market Towns of Diss, Harleston, Loddon and Wymondham; numerous Heritage

assets including Saxon and Norman Churches; the Waveney Valley; Boudicca Way; museums; walking and cycling routes; associated accommodation; and venues for example, provides a rich tourism/visitor offer. The Council considers a full assessment of the impacts of the project would have on known features, directly and indirectly should be provided.

Agricultural Land

South Norfolk is a largely rural District and of which a significant part of which is farmland and is considered an important part of our local economy and also for food production. The potential loss of high-quality (Best and Most Versatile land) agricultural land has not been addressed/quantified and therefore the Council considers this should be scoped into the EIA. Equally the effects on farm business and rural economy should be scoped in for the construction and operation and the significant cumulative effects of known NSIP (i.e Norwich to Tilbury) and TCPA schemes.

Impact on Airstrips

The proposed sites are located close to a number of airstrips and therefore it is considered that the impact on whether the Glint and Glare could compromise aircraft safety and also their operation should be considered in the EIA.

Health/Fire risk

The Council has concerns regarding combustible equipment, particularly the BESS and considers potential impact should be addressed as part of the EIA.

South Norfolk Council wishes to continue to engage with the developer to seek to minimize the impact of the development on its communities and environment in a constructive and respectful manner and welcome the developer's comments that there will be continued consultation through the process.

Yours faithfully

[redacted]

[redacted]
Area Planning Manager and Nationally Significant Infrastructure Projects (NSIPs) Lead Officer
t [redacted] e [redacted]
South Norfolk Council

[redacted]
Infrastructure Planning Director
By email: [redacted]

South Norfolk Council
The Horizon Centre
Peachman Way
Broadland Business Park
Norwich NR7 0WF

Tel: 01508 533789 Email:
[redacted]
andbroadland.gov.uk

6 August 2025

Dear [redacted]

Planning Act 2008: East Pye Solar Project

South Norfolk Council's Response to the Statutory Consultation, between 18 June and 6 August 2025, undertaken by Island Green Power Ltd (IGP) for the proposed East Pye Solar and Battery energy storage system (BESS) Nationally Significant Infrastructure Project (NSIP).

This is the response from South Norfolk Council of **Strong Objection** to the principle of the proposed project, together with technical and procedural grounds. This objection is made without prejudice to any future representations, including the Local Impact Report and representations at Examination.

Overview of the project

The proposed NSIP, known as East Pye Solar, looks to deliver up to 500 megawatts (MW) of homegrown, renewable electricity through ground-mounted solar photovoltaic (PV) panels. We are advised this would be enough electricity to power approximately 115,000 homes and businesses annually.

The scheme comprises of the construction, operation and maintenance, decommissioning of a ground-mounted solar photovoltaic (PV) generating station and associated development, including:

- A BESS;
- A number of 132kV substations location within the Solar PV Sites;
- Two 400kV substations, one adjoining the BESS site and one within Site 5; and
- A new National Grid substation operated by National Grid Electricity Transmission plc.

The scheme also involves grid connection infrastructure including works to the existing 400k overhead line and associated pylon(s), which may include relocation or moving existing pylons, new pylons, temporary replacement pylons and restringing of overhead line. Undergrounding electricity cabling will run between the Solar PV sites within the Cable Route Corridor to connect to the BESS and National Grid Substation.

The operational phase of the scheme is expected to be 60 years. The project site currently being considered to host the Solar PV, BESS, substations, cable route corridor and associated equipment

are at multiple locations, amounting to approximately 2,232 hectares (ha) of land.

The Council understands that East Pye has yet to finalise the layout of the scheme at this stage in the process and therefore does not show the precise locations and extent of the project, which will form part of the formal Development Consent Order submission.

Summary of our Position

South Norfolk Council raises a **Strong Objection** to the principle of the proposed project, together with technical and procedural grounds. This objection is made without prejudice to any future representations, including the Local Impact Report and representations at Examination.

The Council understands that the project would assist in meeting the UK's energy ambition to achieve net zero carbon emissions by 2050 and the Government's Clean Energy target of 2030. We are supportive of renewable energy schemes demonstrated by consented TCPA planning applications within South Norfolk and the Council's own offices and its initiatives.

The provision of clean energy, however, needs to be balanced with the impacts the proposed project will have on our District such as on our landscape; heritage assets; tourism; economy; loss of agricultural land when food production is a vital part of our economy and nationally in terms of food security; combined construction of projects via impacts such as traffic, noise/disturbance/pollution; and our communities who host these projects but receive no direct benefits. The Council raises significant objection at this stage due to the lack of clarity and accessibility in the PEIR with key technical appendices (on ecology, cumulative impacts, landscape impact etc) either incomplete or insufficiently detailed at this stage. The technical assessment that follows sets out some of the issues with the level of information and therefore the extent to which the applicant has sufficiently grappled with these issues and therefore engaged us and the community on these at this stage.

The Council is aware of a number of NSIP Solar Farms potentially coming forward within this part of South Norfolk; the recent pre-application for Tasway Energy Park for at 700MW Solar and BESS NSIP, together with consented and proposed TCPA schemes. Norwich to Tilbury National Grid NSIP which is about to be submitted formally for its Development Consent Order and the consented National Highways and Off-Shore windfarm NSIPs. The significant cumulative impact, these Projects and TCPAs will have on our District has not been adequately explored and is of serious concern.

Given the seriousness of our concerns, the Council is unable to support the proposed East Pye NSIP and raises a strong formal objection.

The Council has been sent a significant number of copies of our communities' responses to the Statutory consultation, raising concerns regarding the Project and procedural matters in respect of the consultation. The Council expects East Pye to demonstrate that it has taken fully into account our communities concerns; how it has addressed them; and how the representations have helped shape and inform the project, given East Pye has not yet formalized its layout and detailed design of the Project and states the reason for this is the project will *evolve 'from environmental and technical surveys we are carrying out and feedback we receive through consultation and engagement' .*

The Council considers that there has been inadequate consultation and engagement to date, there has been no topic/thematic/technical workshops/meetings with our technical specialists for example, the contact has been via emails and limited, which is strikingly different from the Council's experience with other NSIP developer at pre-application stage. This together with the level of information available has meant that the Council considers at this point in time that the applicant has failed to meet the statutory requirements under Sections 42, 47 and 48 of the Planning Act 2008.

Main Technical Issues/considerations

The Project is classified as 'EIA development' under the Infrastructure Planning (EIA) Regulations 2017. As such East Pye is required to undertake an EIA for the Project, which for an NSIP requires an EIA Scoping Report which defines and agrees the scope of the Environmental Statement with the Planning Inspectorate – the Scoping Opinion was issued in February 2025 by the Planning Inspectorate; and a Preliminary Environmental Information Report (PEIR) prepared to provide preliminary details of the environmental information and preliminary findings of the EIA undertaken.

The PEIR has been published as part of this Statutory consultation for review and comments. Below are the Council's technical comments in respect of the PEIR, which are made on a without prejudice basis to the comments set out above and the Council wishes to reserve the right to make further comments, at the formal submission stage of the Development Consent Order and in its Local Impact Report. Equally, the technical comments should be taken together with the formal comments the Council provided under the non-statutory consultation.

It is noted that the information in the PEIR is preliminary, and further work is being undertaken to refine the assessment of likely environmental effects. The final findings of the EIA process will be reported within the ES which will be submitted with the DCO Application.

Impact on Landscape, Trees and Hedgerows

The Council's Landscape Architect has commented as follows and this should be taken together with the previous comments made:

I have reviewed the documents submitted for this PEIR in the context of my remit. The scale of the proposal, and timeframe for responses, has limited this to deskbased consideration only, with no specific field visits at this stage.

I have focused my considerations on the following elements of the submission:

- Commitments Register
- PEIR Chapter 2: Environmental Impact Assessment Methodology
- PEIR Chapter 3: The Site
- PEIR Chapter 5: Scheme Description
- PEIR Chapter 7: Landscape and Visual

<u>Commitments Register</u>

Chapter 7: Landscape and Visual (pages 5/6) – it would be good to include the terms 'restoration' and 'reinstatement' of hedgerows. This is an opportunity for a large-scale improvement and, where appropriate, to plant new hedgerows along historic lines.

Reference should be made to BS5837 and other tree protection advice (such as that for veteran trees) within Chapter 7 (in addition to refs in Chapter 8 commentary).

I could see no reference to safeguarding PRoW access during works, or indeed any benefits in this regard.

<u>PEIR Chapter 2 Environmental Impact Assessment Methodology</u>

No comments

PEIR Chapter 3 The Site

3.13: For ease of reference, could the BESS site be annotated on the plans, as the two colours used to show the Sites and this are similar

3.15.6: It is worth mentioning that existing gaps can be replanted as part of mitigation/enhancement.

PEIR Chapter 4 Reasonable Alternatives and Design Evolution

No comments

PEIR Chapter 5 Scheme Description

5.2.59: We would expect that the route of the proposed cable runs would seek to avoid tree roots completely

5.2.63: Trenchless crossings might be required if tree roots cannot be avoided.

5.2.67: Access should be designed to avoid loss of any trees, regardless of the status. Consideration should be given to utilising temporary traffic management (such as traffic lights) in order to achieve temporary access during construction without the need to remove mature trees unnecessarily.

Table 5.1: It might be worth adding veteran trees as a criterion in its own right.

Table 5.2 illustrates some significant key differences between tracker and fixed panel options; will these be considered separately by the LVIA?

PEIR Chapter 7 Landscape and Visual

The submitted landscape and visual information has been produced in accordance with the accepted industry guidance. It currently considers the project up to the point where it will be operational and, as such, offers a 'worst case' for anticipated landscape and visual effects. I have previously given feedback on the proposed viewpoint locations, and it is good to note that the majority (if indeed, all) of my suggestions have been addressed (including some additional viewpoint locations.

The landscape and visual assessment thus far has identified that there will be adverse effects within both categories. This is not surprising given the nature and scale of the proposal. The Council recognises that the assessment work only considers the construction and immediate operation stages (Year 1), which will before any landscape-related mitigation (such as planting, hedgerow restoration etc.) will have had a chance to establish. The undertaking to complete the landscape and visual assessment to include the Year 15 situation is noted and will be expected in order to inform the Council's input to the Examination. The Council is concerned about the potential for long-term and/or permanent significant landscape and visual effects that could result from this proposal.

It is also noted that Chapter 19 (Cumulative and in-combination effects) also identifies significant adverse effects for the construction, Year 1 operation, and decommissioning stages; Year 15 Operation is yet to be assessed.

Detailed remarks relating to Chapter 7:

Table 7.1
3.14.5: Should the reference to NCC be to SNC instead?
3.14.6: I have been unable to find details of NCC's Environmental Lighting Zones Policy
Page 6 includes details of an email dated 07.02.25 and notes that no response was received. My records show that I provided an acknowledging response on 13.02.25.
For avoidance of doubt, the phone call and email dated 09.04.25 referenced on page 7, was with me – SNC Landscape Architect.

7.2.21 – Assessment of hedgerows against the 'importance' criteria set out in the Hedgerows Regulations 1997 is welcomed. The 'importance' or otherwise will be most pertinent in any situations where existing hedgerows are proposed for removal (whether partial or in full). The Council requests that this information be available at Examination stage.

7.2.22 – Trees may have an importance other than by virtue of being ancient and/or veteran. Definition will be helpful, and the term important might be confusing if referencing hedgerows at the same time.

7.5.2 (and elsewhere) - SNC takes the view that hedge-laying per se is not necessarily the only prescription; any appropriate management will be considered towards the greater aim of landscape restoration and enhancement.

Appendix 7.8 – Arboriculture Technical Note

The Note presents information about trees and woodlands that are potentially affected by the scheme but excludes the proposed cable route at this stage. In order to understand the full implications, the Council expects that a full arboricultural impact assessment for all proposed elements of the scheme be available for the Examination. The final scheme should demonstrate that arboricultural impacts will be avoided wherever possible. It is also expected that any off-site issues (for example to achieve temporary construction access)

1.1.4: includes: "The survey was primarily focused on the recording of ancient and veteran trees features" – The Council expects that the arboricultural information provided for the Examination accords proportional consideration of all trees that are potentially affected by the proposals.

1.2.10: As the accuracy of GPS positions cannot be guaranteed, if potential conflict exists then the Council considers that this should be confirmed on site prior to approval of scheme, not commencement of works.

1.2.13: Whilst it is appreciated that there will be instances when accurate measurements in the field are not possible, it is requested that the estimated diameters should be highlighted in the survey schedules. We would argue that, unless there are clear reasons otherwise, estimated values should be especially cautious.

1.2.19: Given the nature of the land uses for the proposed sites, the current absence of tree protection orders (TPOs) is not unusual; this merely indicates that there have been no 'threats' to warrant such interventions. The absence of TPOs should not be taken as an indication that no trees are present that would be worthy of formal protection. Furthermore 1.2.19 contradicts the information given in 1.1.6 regarding trees in conservation areas.

1.2.20: The Hedgerows Regulations are dated 1997; 2024 saw the introduction of The Management of Hedgerows (England) Regulations.

1.2.29: Whilst this mentions nine woodlands bordering the sites, only three woodlands are mentioned in 1.1.5, 1.4.2 and included in table 1.1 (Tree Quality Assessment Summary).

There appears not yet to be an assessment of hedgerows against the 'importance' criteria of the Hedgerows Regulations 1997. It is expected that a full assessment against all the criteria will be undertaken for any hedges that are proposed to be removed for the scheme (including any works required offsite for access/transportation requirements).

Mitigation planting:

Whilst no details are yet designed, experience of other electricity infrastructure schemes has shown that there can be potential issues and uncertainties in the provision of replacement planting if necessary outside the DCO extent, which then become reliant on landowner co-operation for the long term. This proposal has separate sites linked via cable connections that will run across land that is to be returned to agricultural use, so it will be imperative to establish clear responsibilities for the management of the mitigation planting and other landscape actions for the lifetime of the scheme.

Impact on Heritage Assets and Design Comments

The Council's Senior Heritage and Design Officer has provided the following comments:

At present Heritage chapter of the ES is still being produced so the ability to assess the impact of the proposals on the setting of heritage assets is limited. I note on the masterplan areas have already been outlined for mitigation, but it is difficult to assess whether the effect of mitigation without clear identification of the level and nature of the impact/harm on the heritage assets that it is seeking to mitigate. Unfortunately, the maps so far submitted are also not that clear for identifying the assets affected and features within their context (see later) and these should be clearer when the ES submitted.

PEIR Chapter 10 Cultural Heritage

Table 10.4 - There are no registered battlefields so this can be deleted.

Rather than having Locally Listed Buildings, I would suggest Non-designated heritage assets. We do not have a local list of buildings as such, but we do identify building in conservation areas as being local significance as part of the planning process.

There are local list buildings in neighbourhood plans – but this is not the local authorities local list so needs to be clearly identified as separately where they may exist so that it is clear how they have been identified.

I am not sure what "Asset where the significance is limited by poor preservation and poor survival of contextual associations" If a building then this would affect whether we consider it a non-designated heritage asset if original condition/appearance of the building has been lost and or altered. It will also depend on use and historic relationships and what values are placed on those types of significance, and whether these of more significance than physical appearance e.g. former school building that has been significantly altered. It should be clear in the ES what significance is being attached to an NDHA as this will consequently affect how the proposals will impact upon it.

10.2.17 - It is noted that full assessments will be presented in the ES. I would advise it would be prudent to allow me to comment on a draft before it is submitted which may avoid the need for

representation at the hearing, particularly if a more minor issue which can be agreed.

10.4.7 - “SNC refers to Locally important buildings in their neighbourhood plans which they regard as non-designated heritage assets” – should be clear what assets that have been identified in neighbourhood plans and not by the local authority as selection criteria can differ between different neighbourhood plans.

10.5.2 - “For indirect impacts to heritage assets through changes to their settings, this embedded mitigation involves the incorporation of appropriate setbacks, buffers and landscaping to minimise infringement on any views. I consider it important here that any mitigation such as planting should be designed in a manner that also fits in and is contiguous with the landscape character, which contributes to the setting.” E.g. selecting right tree species, character of woodland to fit in with existing character such as wooded plantations. Poor planting schemes can in themselves be considered harmful.

As state above Peir report Vol II Figures 9.11-21 showing HER monument records and Figures (i.e. potentially showing non-designated heritage assets that have been identified) is not very clear for assessment.

Similarly figure 10.1 to 10.10 do not show clearly the location of the heritage asset and surrounding character in terms of map form – and is no better when zoomed in. This similarly affects consideration of viewshed and ZTV maps. It would be better if these were larger scale or at least the ability to zoom in to get a clearer understanding of the ways in which the setting and contribution to significance can be appreciated.

As with above, at present the masterplan has been produced showing proposals for mitigation which shows areas for landscaping, although there is as yet no detail on how these will be designed and how these seek to mitigate any harm to the setting of heritage assets arising of the type of screening provided.

It is important to note that although screening may help to mitigate harms arising it may not fully remove them, and can potentially result in its own harm, such as removing existing views and relationship a heritage asset has to it context such as being adjacent to open countryside – a farmhouse within the setting of its agricultural fields for example. Screening may also block important views such as views of heritage assets from public footpaths for example. Para 39 of the HE Setting guidance that states:

“For some developments affecting setting, the design of a development may not be capable of sufficient adjustment to avoid or significantly reduce the harm, for example where impacts are caused by fundamental issues such as the proximity, location, scale, prominence or noisiness of a development. In other cases, good design may reduce or remove the harm, or provide enhancement. Here the design quality may be an important consideration in determining the balance of harm and benefit.

Para 40 emphasises the importance of well-designed screening. This will be particularly important where it is in close proximity to assets affected and may also result in other impacts such as views within the wider setting and the relationship between built development and landscape character. Para 40 of the guidance states:

“Where attributes of a development affecting setting may cause some harm to significance and cannot be adjusted, screening may have a part to play in reducing harm. As screening can only mitigate negative impacts, rather than removing impacts or providing enhancement, it ought never to be regarded as a substitute for well-designed developments within the setting of heritage assets.

Screening may have as intrusive an effect on the setting as the development it seeks to mitigate, so where it is necessary, it too merits careful design. This should take account of local landscape character and seasonal and diurnal effects, such as changes to foliage and lighting. The permanence or longevity of screening in relation to the effect on the setting also requires consideration. Ephemeral features, such as hoardings, may be removed or changed during the duration of the development, as may woodland or hedgerows, unless they enjoy statutory protection. Management measures secured by legal agreements may be helpful in securing the long-term effect of screening.

Impact on Ecology

The Council's Ecologist has commented as follows and in addition to her previous comments:

Thank you for the opportunity to comment on the PIER Commitments Register and the Preliminary Environmental Impact Report (PEIR) for the East Pye which contains the initial findings of the Environmental Impact Assessment resulting from the construction, operation (and maintenance), and decommissioning phases of the proposed scheme. This response (to Chapter 8) is provided in my capacity as Principal Ecology and Biodiversity Officer on behalf of South Norfolk District Council.

PEIR Commitments Register

The standalone Commitments Register sets out the schedule of environmental mitigation measures and commitments that will be adopted during the construction, operation and decommissioning phases of the Scheme.

The mitigation hierarchy has been used to inform the layout as it currently stands with measures such as HDD proposed to avoid important ecological receptors. The cable corridor is currently being refined. The Register is a live document. We welcome preparation of the register and requested that:

a. the Commitments Register reflects all proposed commitments from the various ecological (and arboricultural) receptors as they arise, to include (as per government guidance) the buffers, and delivering a minimum 10% BNG. (At the moment it omits mention that the Decommissioning Management Plan (DEMP) will be informed by updated ecological surveys (this is identified in section 8.6.23 of Chapter 8 but not carried through)). I would also note the DEMP should be informed by an updated Arboricultural Impact Assessment (AIA), Tree Constraints Plan (TCP) and an Arboricultural Method Statement (AMS).
b. Consideration is given to what will be retained post development and at the Register identifies where ecological enhancement will be retained post decommissioning (shown on appropriately scaled plans). (I note the site will mostly be returned to its former use following decommissioning and with careful design
60-year-old habitats such as hedges, trees and ponds could be retained),
c. The Register identifies which receptors are sufficiently important or sensitive to warrant HDD, and where HDD (Details in Chapter 5 – Scheme Description) will be used – e.g. beneath Lower Spring Wood CWS and Hempnall Beck (Chapter 9
Water Environment), and
d. A commitment is made to not using any fertilizer, pesticide or herbicide within the LEMP

PEIR Volume 1

The PEIR will be updated as survey data becomes available, and the design evolves. Ecological

surveys are currently ongoing. Pending completion of the ecological survey work please consider the following comments on the submitted information:

Ecological enhancements
Potential ecological enhancement options being explored are identified in section 5.2.76 and it is requested that consideration is also given to the creation and/or restoration of ponds (see Appendix 1 below for details of the ghost pond layer which is available again), and veteranisation of trees to create more natural nest and roost features (in preference to installing small bird/bat boxes). Soft landscaping plans should reflect the local character and use locally sourced plants. Consideration should also be given to enhancing important bat flight lines/foraging areas. The enhancement measures should be reflected in the Commitment Register.

Ecological offset/buffer
Welcome the buffers set out in Table 5.1. It is requested that it include buffers to protect:
a. veteran trees,
b. important bat flight lines, and
c. identify dark corridors around important ecological features.

PEIR Chapter 8 Ecology and Biodiversity

The scope of the EIA has been revised and broadly (Consultation responses are provided in Table 8.1 and 8.2 and the tables in 8.3 and 8.4 identify what has been scoped in and out) agreed with the Planning Inspector and consultation with stakeholders (including Natural England) and will consider potential impacts on International and National designated sites, non-statutory designated sites, irreplaceable habitat, priority habitats and protected notable species (Chapter 8: Paras 8.1.6 – 8.1.10, and Table 8.1).

With regards to Table 8.1 (PINS ID 3.15.10) the LPA does not raise any concerns about scoping out reptiles, widespread amphibians, hazel dormice and from the EIA as significant effects are unlikely to occur due to the habitats impacted. Also, hazel dormice are not present in South Norfolk. Precautionary method of working would be sufficient to ensure these species are not harmed.

On page 12 there is reference to ‘NCC’ in the SNC section (below). Please can the table be amended as these comments were not made by SNC (NCCs is the planning authority for minerals/waste, highways and the flooding and their comments should be considered with this regard).


NCC requests that the following species/groups will need consideration in the ES:
- Bats
- Breeding birds

Regarding cumulative effects (page 31) details are emerging for the 700 MW Tasway Energy Park (https://taswayenergypark.co.uk/) to the west of Long Stratton. They are planning to start the consultation process this autumn/winter.

It would be useful if a plan showing the areas that were not accessible to the surveyors could be made available as part of the examination to help visualise the unknowns (Para 8.3.8).

New CWS are designated annually by the CWS partnership so it would be advisable to update the desktop survey at intervals to consider ensure any new CWS/RNRs are identified early and

considered (Para 8.3.9).

The assessment should include consideration of whether the scale of the proposals, with large areas of solar arrays, and noise (e.g. from inverters), could have a discouraging impact on the movement and foraging of bat species (especially Barbastelle bats from the maternity colony).

Biodiversity Net Gain
We welcome East Pye's commitment to delivering at least a 10% Biodiversity Net Gain (Chapter 8, paras 8.3.18 – 8.3.19) which should be secured as part of the
DCO. Can it be confirmed if a minimum of 10% BNG will be delivered across all land within the DCO corridor (including the cable corridors). The commitment should be included within the Commitments Register. For ease:

a. Because the BNG metric will be a large document could the onsite habitat baseline be broken down by site/sub-site to make it easier to understand?
b. Can separate baseline maps be provided (perhaps as part of a BNG Statement (or similar)), with reference clearly made to them on the 'start tab' of the metric.

Can the baseline maps also include the areas/lengths for each parcel.

c. Condition assessments should be provided in their Excel format and clearly linked to each sub-site.
d. Please identify, as far as possible, what habitats will be created post development, and
e. Save the metric in its entirety (rather than unused tabs)

Ecological Survey Scope and Schedule
Where the CRC crosses watercourses water vole surveys are advised because in the event of a multiple bentonite breakouts into the watercourse an alternative crossing point may need to be identified (Table 8.9).

Ancient Woodland
In line with Natural England's Standing Advice, we would suggest the 30m buffers provided around the ancient woodland (Chapter 5, table 5.1) are considered as part of the wider ecological network (connecting ancient woodland/priority habitat and veteran trees) and planted with semi-natural habitats such as woodland and a mix of grassland and scrub. These habitats should be retained post decommissioning.

Embedded Mitigation
Para 8.6.1 quotes the ecological mitigation hierarchy noting it also applies to BNG. The Biodiversity Gain Hierarchy (set out in legislation) is however subtly different to the ecological mitigation hierarchy so this should be reflected within Chapter 8. The application should therefore also consider how existing habitats can be enhanced.

Para 8.7.202 notes 'linear terrestrial, riparian and aquatic habitats that will remain within the Site post-decommissioning'. For clarity can the application (perhaps in the form of a Biodiversity Net Gain Statement), clearly show which habitats will be retained post decommissioning.

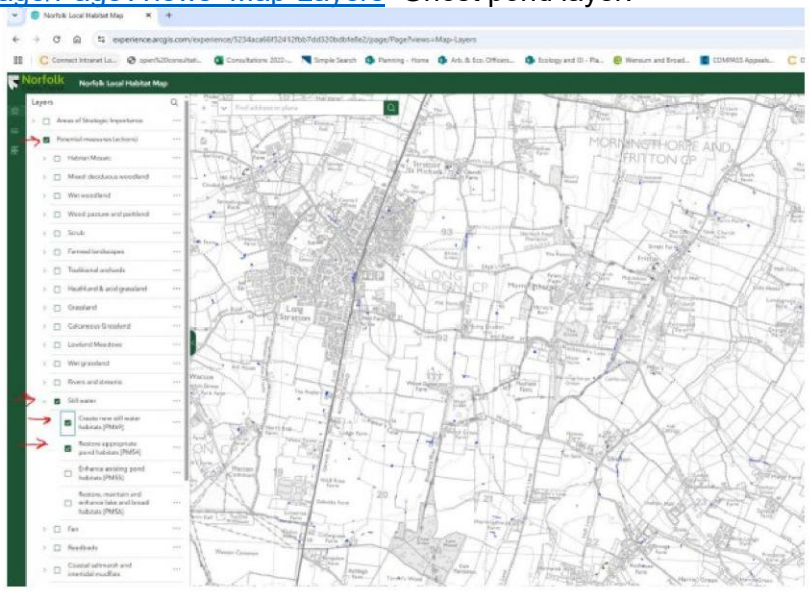
DLL 20. Please can you liaise with NE's DLL delivery team regarding pond supply (GCNDLLStrategy@naturalengland.org.uk). This will help the delivery team (which is separate from the licensing team) ensure sufficient ponds are available for East Pye and other (non) NSIP applications.

PEIR Volume III- Appendices

Appendix 1.2 Statement of Expertise: contains details of the person who authored the ecology chapter. Please can details of the ecologists who completed the surveys also be provide/be available on request.

Appendix 5.1 Draft Design Principles 2.1-2.12 relates to an environmental led design approach which includes ecological considerations, and 3.1-3.5 relate to BNG and Nature recovery – it would be desirable to include restoration of ponds/ghost ponds. It should also reflect commitments in the Commitment Register (including the ecological buffers.

My attachment referred to above:
Appendix 1. Ghost pond restoration & pond creation opportunities Ghost Pond restoration https://experience.arcgis.com/experience/5234aca66f32412fbb7dd320bdbfe8e2/page/Page?views=Map-Layers Ghost pond layer:



Ghost pond layer: Potential measures – still water – Restore appropriate pond habitats.
Create new ponds: Potential measures – still water Create new still water habitats

For example in sub site 7c there is potential to restore two ghost ponds



Environmental Protection

The Council's Environmental Management Officer has commented as follows:

PEIR Chapter 5 Scheme Description

5.2.10 – Solar PV Panels - Percussive piles are not acceptable as a form of fixing and screw piles should be advanced as the preferred means of fixing.
5.2.53 – Motion sensing lighting - It is recommended that the lighting is not motion sensing but is an actively controlled one which will be used by security who monitor the site via infrared CCTV.
5.5.5 – Construction activities - The councils recommended working hours are
08:00 – 18:00 Monday to Friday, 08:00 – 13:00 on Saturdays, No work on
Sundays or Bank Holidays
5.5.31 – Decommissioning Management - it is uncertain why the ODEMP is to be produced as processes will significantly change over the 60year life cycle of the solar farm. This would probably be better secured via a Requirement.

PEIR Chapter 12 Noise and Vibration

12.2.2 – Noise – Solar PV Tracking Motors (Operational Phase Only):
Given the number of panels which will be operating at the same time. Even if this has been scoped out, it should be included in the overall noise assessment.

Noise – Maintenance and Replacement of 132Kv and 400Kv Substations, National Grid Substation, BESS, Solar PV Arrays:
No objection to the scoping out of the maintenance aspect. However, any replacement of plant should be agreed with the LA and be supported by evidence that their noise levels are the same of lower than the those initially installed. This should be included in the report.

Table 12.4 - Site 5 & 400Kv Substation:
NSR29 and NSR30 are defined as having a medium sensitivity. This is understood as they are classed as a commercial enterprise. However, as a nursery the occupants are considered to have a high sensitivity. As such they should be considered to have a high sensitivity.

12.2.13 – Clarification of what are the hours outside of which a S61 would be applied for?

12.2.14 – There is no indication of whether alternative accommodation will be offered and at what threshold this will happen.

12.2.23 – Operational noise should be at background or below. 5dB is considered to be LOAEL and is not considered to be acceptable.

12.2.25 – Is this the noise levels at the facia? The Nursery should be considered to be high sensitivity due to the sensitivity of the occupants even if it is a commercial premises.

12.2.31 – It is recommended that the noise assessment is undertaken for both sites. This can guide the site selection, such that the least impact from operation noise is achieved and the least amount of mitigation is required.
12.2.34 – The councils recommended working hours for noisy works are 08:00 – 18:00 Monday to Friday, 08:00 – 13:00 on Saturdays, No work on Sundays or Bank Holidays. Work outside this will require a S61 agreement, this should be stated in the report.

12.2.35 – Where construction compounds are proposed to be present, these should be assessed

using BS4142 as, due to their operational time the noise impact could be considered to be that of a fixed installation.

12.6.3 – Percussive piling is not considered to be appropriate, and other types of piling (e.g. Screw piles) should be considered as this will remove the percussive noise impact.

12.6.19 – Details of the proposed mitigation measures are required. Mitigation measures should be expanded to cover all NSRs where the predicted noise levels exceed the background noise level.

12.6.20 – Significant details and consideration of the mitigation measures proposed for the BESS and Sub-stations as these could pose a significant impediment to the development.

12.6.23 – A Major Adverse effect would not be acceptable. This needs to be clarified prior to the submission of the DCO or we would have to object to the application due to the impact on the amenity of the residents.

12.6.25 – The outdoor amenity space of the NSRs should be assessed as part of the process. This is to include evening and weekends when it can be expected that the occupants will be in residence. This I more critical during summer months when the receptors are more likely to be outside and the solar farm and associated equipment are functioning at their highest noise level.

12.6.31 – 12.6.35 – the works to be undertaken during the decommissioning are not known at this time as and such any predictions are guesswork at best and the DCEMP should be provided nearer the time of decommissioning and be covered by a condition.

12.7.3 – The mitigation should be down to background noise levels and not to LOAEL.

12.8.1 – This should be covered by a BS5228 assessment, and percussive piling should not be utilised, and an alternative should be proposed.

12.8.3 – The threshold should be the background noise level and should not be exceeded.

Table 12.24 - Operational and Maintenance Phase - Operational Noise from 400kV Substations, National Grid Substation, Battery energy Storage, Solar PV Arrays – This should be classified as **Unknown** as at this time the details of the BESS and substation are not known.

PEIR Chapter 13 Air Quality

13.4.7 – This is incorrect. The Councils have a number of Earthsense Zephyrs positioned in the area. This data can be made available upon request.

Appendix 13.1 Construction Dust Risk Assessment
All Paragraphs – PM2.5 should be included as a consideration throughout the Construction Dust Risk Assessment.

1.1.3 – This should include PM2.5 as well as PM10.

1.1.5 – This should include PM2.5 and should also discuss and consider the impact of the particulate matter including the existing background levels.

Table 1.9 - Monitoring – Real time monitoring is recommended, which should include PM2.5.
Waste Management – Burning of waste is not acceptable form of waste operation and it should be

clearly stated that it will not be undertaken.

PEIR Chapter 16 Ground Conditions

16.1.11 – Consultation should also be with SNDC as they are responsible for any contaminated land investigation under Part 2A of the EPA1990.
Table 16.12 - Off-site 5) RAF Hardwick, should include PFAS as a potential contaminant.
Appendix 16.1

2.5.17 It is considered that investigation of the airfields should be undertaken given the potential for contamination to exist. Sources could include FIDO as well as de-icers, and firefighting foam residue (PFAS).

Table 5.2 - It is considered that the Hazard Classification Score is too low for potential sources of contamination which are present on site. Off site is acceptable due to the distance.

PEIR Chapter 17 Electromagnetic Fields

The text associated with the figures all mention the drop off from underground cables, even when the figures relate to overhead cables. This needs to be clarified.
A comparison of the changes between the 1998 ICNIRP and the 2010 ICNIRP should be included. This should include a direct comparison of the appropriate health criteria.

PEIR Chapter 18 Other Environmental Matters

18.4.14 – The number of residential receptors has not been provided.

18.4.65 – This section does not comply with what the Glint and glare assessment says. The G&G states that of the remaining 68 dwellings 46 will require mitigation.

Appendix 18.1 Glint and Glare Assessment
The Glint and Glare assessment states that embedded mitigation measures are in place but does not discuss what they are. Additionally, if this is to comprise the planting of vegetation (hedges etc), how long will it take to the vegetation to grow sufficiently such that they do effectively block the predicted glare?

PEIR Chapter 19 Cumulative and In-combination Effects

Table 19.7 - Noise. It cannot be said that the cumulative operational noise will only be minor adverse and that it is not significant as the noise impact of the BESS and Sub-station have not been assessed.

Final comments

Above are my conclusions on the information provided in the available documentation. However, I note the distinct lack of information relating to the proposed BESS and Sub-station. I also note the comments provided by the consultant, that state that the BESS and Sub-station may have a Major Adverse effect. Based on my experience I consider that the proposed BESS and substation could significantly impact amenity such that it would be a Statutory Nuisance. As such unless significant mitigation can be proposed I would have no choice but to **object** to the project.

Please note that the noise levels which I consider to be appropriate for the proposal to be emitting would be at or below background noise levels (LA90), which should be applied to all noise sensitive

receptors.

Agricultural Land

NPS EN-1 states that applicants should seek to minimise impacts on Best and Most Versatile (BMV) land (defined as land in grade 2, 3a of the agricultural land classification) and preferably use land in areas of poorer quality (grades 3b, 4 d 5). Further detail is given in NPS EN-3, where paragraph 2.10.29 indicates that land type should not be a 'predominating factor in determining the suitability of the site location'. However, paragraph 2.10.29 also states that where 'the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land avoiding the use of Best and Most Versatile agricultural land where possible'. Paragraph 2.10.30 of NPS EN-3 does not prohibit the use of BMV agricultural land, and paragraph 2.10.31 recognises that agricultural land is likely to be used and where this occurs, the applicant should explain their choice.

An Agricultural Land Classification survey has been undertaken, the result of the survey is below. Which indicates 80% of the land s grade 2 and grade 3a and only 19% on grade 3b and 4.

Table 15.8: ALC Results (of area surveyed which covers sub-Sites, BESS and part of Substation)

ALC Grade	Description	Area (ha)	Proportion (%)
1	Excellent quality	0	0
2	Very good quality	436	40
3a	Good quality	432	40
3b	Moderate quality	170	16
4	Poor quality	30	3
5	Very poor quality	0	0
NA	Non-Agricultural	10	1
Total	**Total**	**1078**	**100**

This loss of BMV land (given that food production is a vital part of our economy and nationally in terms of food security) raises concerns and whilst the Project lifetime is up to 60 years, therefore temporary and reversible, the loss of BMV should the Project be granted consent would be immediate and over a significant period of time. The Council also is concern regarding the cumulative impact other Projects for similarly large Solar NSIP's and TCPA proposals, could result in a significant loss of BMV land and the impact this would have on our District.

Economic Development and skills

It is essential to South Norfolk that the economic benefits are maximised for the communities that are hosting the project which will have a significant impact on their environment.

The PEIR advises that an Outline Skill, Supply Chain and Employment Plan will be prepared in consultation with relevant consultees, which is welcomed, and the Council would wish to have an input into this plan.

It is noted that it is estimated that the construction phase of the project would support 258 workers per day, equivalent to 217 full time jobs and peak at 694 workers, equivalent to 583 full time jobs in month 6 of the construction programme. It suggests further 660 direct jobs, during construction. In total the project will support 1,006 net directly and indirectly, of those 73 are anticipated to be for people living

in South Norfolk,181 elsewhere in Norfolk, 252 in the rest of the East of England and 501 outside the region. Whilst it is appreciated the construction period is temporary and the benefits of the provision of jobs, an area of concern for the Council however is the need for temporary accommodation, given 50% of the scheme's construction workforce is likely to be sourced outside of the region and particularly when taken into consideration the other NSIP Projects consented and being built out: RWE Vanguard and Boreas (cable routes and Convertors stations); Hornsea Project Three (cable routes and convertor station) and Equinor (cable routes and convertor station); 3 National Highway Schemes and the NSIP projects coming forward such Norwich To Tilbury and other potential Solar Farms. It is therefore considered that a full assessment will need to be undertaken as part of the EIA, to assess the wider impacts arising from the proposed project, in combination with other NSIP developments.

Tourism and visitors

South Norfolk with its Market Towns of Diss, Harleston, Loddon and Wymondham; numerous Heritage assets including Saxon and Norman Churches; the Waveney Valley; Boudicca Way; museums; walking and cycling routes: venues and accommodation for example, provides a rich tourism/visitor offer. In reviewing the documentation, it is not considered that East Pye have fully assessed the impacts that the project would have on the known features, directly and indirectly and not in combination with the other NSIP's and developments as set out in the above paragraph.

Community Benefits

It is considered that East Pye should commit to providing a package of community benefits, to seek localised benefits to South Norfolk communities to offset the significant impacts the project will create. The Council would welcome further discussions with East Pye Grid regarding an appropriate community benefit package.

Conclusion

South Norfolk Council strongly object to the principle of the proposed project, together with technical and procedural grounds as set out above.

We expect East Pye to fully take into account the comments the Council has provided and those made by our communities as part of all the pre-application consultations stages. Notwithstanding our position, the Council will continue to engage with East Pye to seek to minimise the impact of the development on its communities and environment in a constructive and respectful manner.



Assistant Director – Planning
South Norfolk Council

South Norfolk Council
The Horizon Centre
Peachman Way
Broadland Business Park
Norwich NR7 0WF

[redacted]

Infrastructure Planning Director

By email: [redacted]

Tel: 01508 533789 Email:
[redacted]

28 November 2025

Dear [redacted]

Planning Act 2008: East Pye Solar Project

South Norfolk Council's Response to the targeted Non-Statutory Consultation, between 22 October and 26 November 2025, undertaken by Island Green Power Ltd (IGP) for the proposed East Pye Solar and Battery energy storage system (BESS) Nationally Significant Infrastructure Project (NSIP).

This is the response from South Norfolk Council who maintains its **Strong Objection** to the proposed project. This objection is made without prejudice to any future representations, including the Relevant Representation and Local Impact Report and representations at Examination.

Introduction

The Council has previously responded to East Pye on their non-statutory consultation between 23 October 2024 and 6 December 2024 and Statutory Consultation between 18 June 2025 and 6 August 2025, the concerns raised in our previous comments still stand and this response is to the targeted non statutory consultation.

The Council understands that following the Statutory Consultation, the developer has continued to refine the Project, which has resulted in a series of amendments/changes to the scheme, which have been set out below:

- Confirmation of the proposed location of the new National Grid substation within site 1B and that the applicant will not be pursuing the additional option to the south.
- Confirmation of the location and size of the project substation in Site 1B (which is proposed to increase from132 kv to 400 kv).
- Additional solar pv panels in part of site 7D.

- Additional small parcels of land have been added included adjacent and to the northeast of Site 1; and to the southwest of Site 1, associated with the works connecting the National Grid Substation to the existing overhead transmission electric lines.
- Changes to the Site Boundary Area to accommodate localised changes, to include additional land added throughout the Scheme associated with updates to highway visibility splays; and to accommodate Abnormal Indivisible Loads (AIL) that could result in highway works, removal of street furniture and/or vegetation removal, have been included.
- For the Phase Two statutory consultation, potential AIL routes to the Site were identified from different ports of entry, likely vehicle configurations and potential constraints along each route. Further appraisal of the AIL routes to the Site has been undertaken, and updated information is provided.
- The proposed construction vehicle routes strategy has been changed following the Phase Two statutory consultation, based on stakeholder feedback, design evolution, local road network constraints and seeking to internalise construction vehicle movements within the Site.

The technical specialist's comments made below are given on a without prejudice basis and South Norfolk Council's comments made in its previous formal response to the Statutory Consultation still stand. It is noted that there has been no further meaningful information provided to address the issues and concerns raised by the Council at the Statutory consultation.

The Council equally notes that the developer states within the consultation documentation that: *The additional areas and associated activities including their nature, extent and duration have been reviewed as part of the environmental assessment. The additional areas do not change the likely significant effects of the environmental impact assessment that are set out in the Preliminary Environmental Information Report (PEIR), the findings from which we sought views on for our Phase Two (statutory) consultation. Information in relation to construction traffic routes was addressed in Chapter 11 Transport and Access, of the PEIR, at the Phase Two Statutory Consultation stage.* Therefore, no revisions or updates have been made to the PEIR in support of the changes made.

Given that East Pye have now confirmed the proposed location of the new National Grid substation within site 1B and the size of the project substation in Site 1B (which is proposed to increase from 132 kv to 400 kv) it is considered that updated information should have been provided as part of this targeted consultation (which is expanded upon below in the technical comments).

Main Technical Issues/considerations

Cumulative Impacts

There are a number of NSIP Solar Farms potentially coming forward within this part of South Norfolk; the recent pre-application for Tasway Energy Park for a 700MW Solar and BESS NSIP, presently in its phase one consultation, together with consented and proposed TCPA schemes. Norwich to Tilbury National Grid NSIP which is in its examination phase and the consented National Highways and Off-Shore windfarm NSIP's. The Council is concerned that the

cumulative effects of these projects, together with existing infrastructure will result in:

- Landscape and Heritage Harm as a result of industrial-scale infrastructure incompatible with rural character;
- Ecological Impact as a result of potential loss of habitats and biodiversity
- Community Disruption due to noise, disturbance and disruption during construction and operation phases;
- Economic Consequences due to negative impacts on local businesses and tourism.

The overlapping construction periods, likely spanning years rather than months, will exacerbate these impacts. Therefore, the significant cumulative impact, of these Projects and TCPAs will have on our District is of serious concern.

Impact on Landscape, Trees and Hedgerows

The Council's Landscape Architect has commented as follows and this should be taken together with the previous comments made:

The proposed extents, and the reasons for, the proposed additions to the development boundary areas raise concerns that cannot be allayed without detailed information.

Many of the locations included appear to have existing mature trees and I would not support the removal of these purely to achieve temporary constructional needs. Whilst all potential tree loss merits scrutiny, particular concern is registered for the locations that are part or wholly within, or adjacent to the conservation areas of Saxlingham Green, Saxlingham Nethergate and Long Stratton. Hedgerows may be less of an issue, especially if they could be coppiced to achieved temporary clearances, then allowed to re-grow.

Some of the locations' explanatory notes do not make it explicit as to whether the potential areas of vegetation removal are for the long-term operational accesses to the scheme. Where this is the case, then it needs to be demonstrated that the proposed access arrangements are sited in the least harmful way and that no (less harmful) alternative is possible.

Impact on Heritage Assets and Design Comments

The Council's Senior Heritage and Design Officer has provided the following comments:

It is good, with regard to the grade II listed building, Broadgate Way, to the southwest of Great Moulton that the National Grid substation is not going to be in the southwest corner close to that asset. However, being to the north in site 1B will place it in closer proximity to a number of designated heritage assets within Great Moulton which are currently characterised by backing onto or towards expansive rural open countryside to the south.

The size of the substation is proposed to change from 132 kV to 400 kV. There are no detailed details yet on the design, and it is a concern that this will also result in larger and a taller structure – the consultation has suggested that the height is increasing from 7m to 13m, however there are no details whether 13m will be the tallest element but only small part of the substation, or whether the station will have a volume and massing where 13m will be across a

large part of the site. This is likely to be very visible and intrusive when seen within the setting of surrounding heritage assets particularly those to the north and Moulton Farmhouse to the east. The impact is yet to be assessed by the heritage consultants so more detailed required in order to assess heritage impact.

The suggestion of more panels in parcel 7D is likely to result in only relatively low level of harm to nearby designated heritage assets in terms of impact on their setting. There is potential for it be visible from the upper storeys of designated assets in Saxlingham Green (which is also a conservation area) but there is some physical detachment and possible mitigation in the field to the north however no details of what this may be have been provided yet.

I note that "additional small areas of land throughout the Scheme to accommodate Abnormal Indivisible Loads (AILs) that could result in highway works, temporary removal of street furniture (benches, bins, bollards, etc.) and/or vegetation removal." Some of these areas are close to heritage assets, however my understanding is that with the nature of the changes this is unlikely to be result in such as significant change to the setting of a listed building to be considered significant in terms of effect.

I am however concerned that a long stretch of road is marked for alterations through the villages of Saxlingham Nethergate and Saxlingham Green, which are conservation areas. There are no details as to what the alterations may entail, however the grass verges, vegetation and street furniture all contribute to the character and appearance of the conservation areas, so it is likely that proposals will have an impact on the conservation areas as a designated heritage asset.

Environmental Protection

The Council's Environmental Management Officer has commented as follows:

From the additional information provided, it is apparent that the location of the substation and BESS have now been decided. As such the Noise impact assessment needs to be updated to include the variation in plans. Additional information is also required for Air quality, and some changes are needed to the contaminated land specification.

These are detailed in my previous comments and have not been addressed. As such I object to the application until such time as the issues that I raised have not been dealt with to my satisfaction.

The above are my conclusions on the information provided in the available documentation. I note the comments provided by the consultant, that state that the BESS and Sub-station may have a Major Adverse effect. Based on my experience I consider that the proposed BESS and sub-station could significantly impact amenity such that it would be a Statutory Nuisance. As such unless significant mitigation can be proposed I would have no choice but to ***object*** *to the project.*

Please note that the noise levels which I consider to be appropriate for the proposal to be emitting would be at or below background noise levels (LA90), which should be applied to all noise sensitive receptors.

Conclusion

The Councils comments are only in respect of the 'Targeted Consultation Information Change Note' of 20 pages, which provides limited information other than the changes set out in the introduction above and also noting that the PEIR has not been revised or updated. The Statutory Consultation response which sets out in detail the concerns of the Council regarding the proposed Project still stands and should continue to be taken account of.

The impacts the proposed project will have on our District such as in:

- Landscape and visual effects with the introduction of large-scale solar, substation and BESS into sensitive rural landscapes, causing permanent change to character and views on our landscape;
- The adverse effects on designated heritage assets;
- The ecological impact with the loss and fragmentation of habitats, with potential impacts on protected species and biodiversity;
- The agricultural land loss with permanent and temporary loss of productive farmland including BMVL, affecting rural economy, when food production is a vital part of our economy and nationally in terms of food security;
- The impact on our communities via traffic, noise, pollution, visual intrusion and disruption during construction and operation who host these projects but receive no direct benefits.

still give serious concerns in regards to the proposed development which have not been addressed via this targeted consultation, South Norfolk Council maintains its strong objection to the principle of the proposed project.

We expect East Pye to fully take into account the comments the Council has provided and those made by our communities as part of all the pre-application consultations stages. Notwithstanding our position the Council will continue to engage with East Pye to seek to minimise the impact of the development on its communities and environment in a constructive and respectful manner.

Yours sincerely

[redacted]

Assistant Director – Planning
South Norfolk Council

Dear Sir/Madam,

Relevant Representation On Behalf of South Norfolk District Council

Island Green Power East Pye Solar Farm Development Consent Order (Application Reference: EN0110014)

This representation is organised in three main Parts:

Part I: Background and context for South Norfolk District Council.
Part II : Key concerns on a topic-by-topic basis.
Part III: The Council's concerns with the Requirements.

PART 1: BACKGROUND & CONTEXT

1. Background & Context

1.1 South Norfolk District Council ("the Council") acknowledges that the proposed development would contribute towards meeting the UK's legally binding commitment to achieve net zero carbon emissions by 2050 and the Government's Clean Energy target of 2030. The Council is broadly supportive of renewable energy schemes in principle which is demonstrated by the array of consented TCPA planning applications across the South Norfolk District. However, in determining this application, the Examining Authority must apply the statutory test under section 104 Planning Act 2008, having regard to the relevant National Policy Statements, including the need to assess whether the identified benefits of the proposal outweigh its adverse impacts. The relevant policy framework for this application comprises the Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Renewable Energy Infrastructure (EN-3), read together, and where relevant EN-5 in respect of associated network infrastructure.

1.2 In this context, the Council has identified substantial harms arising from the development including heritage, landscape, ecological, and amenity impacts. The Council's position is that these harms are significant and must be given appropriate weight within the section 104 planning balance, alongside the national need case. This representation therefore focuses not only on the nature and extent of those impacts, but also on ensuring that the Development Consent Order ("DCO") contains robust, precise and enforceable

provisions. The Council has, and will continue to, engage constructively with the applicant, Island Green Power, on detailed drafting. However, points of principle arise where the current drafting introduces uncertainty, excessive flexibility or insufficient control, which could undermine the ability of the decision-maker to be satisfied that the development accords with the relevant NPS and the statutory framework under section 104. These matters are set out below.

1.3 The Council wishes to make a relevant representation regarding the proposed DCO. This representation addresses two key areas:

1.3.1 The substantial harms arising from the principle of the project and sitespecific impacts; and

1.3.2 The need for robust controls within the DCO to ensure those harms are not exacerbated by excessive flexibility, lack of precision or inadequate timeframes for discharge of requirements.

2. Project Overview

2.1 The East Pye Solar project is a proposal by Island Green Power for a 500mW solar farm, a Battery Energy Storage System ("BESS"), up to three new 132kV substations, up to three new 400kV substations for grid connection infrastructure and a new National Grid substation.
2.2 This Project is wholly within the South Norfolk District, sited in predominantly rural areas, resulting in significant effects on heritage assets, landscape character, amenity, and ecology.
2.2.1 Key concerns include:

2.2.1.1 Significant visual intrusion from solar panels, BESS, and substations in open countryside;
2.2.1.2 Significant adverse impacts on multiple listed buildings and historic farmsteads;
2.2.1.3 Loss of, and significant implications for, hedgerows and trees (including veterans), with implications for ecology and local amenity;
2.2.1.4 Major adverse impacts on amenity as a result of the BESS and multiple substations;
2.2.1.5 The further matters referred to below.

2.3 While the Council acknowledges the national benefits of the project, these local harms are substantial and must be afforded significant weight in the planning balance.

3. Council Position

3.1 South Norfolk Council recognises the essential need to generate renewable energy to meet national targets and the need for a new National Grid substation to increase capacity within the electricity transmission network to accommodate significant new energy generation from offshore wind farms and consented TCPA planning applications in the district. However, the Council strongly objects to the project and continues to raise concerns about the specific harms the development will cause which are set out below.

4. Summary of Harms

4.1 Before considering detailed drafting, it is essential to emphasise that the applicant's planning documents identify substantial and significant harms associated with this project. These harms are by virtue of the nature of the development and its location and must be given substantial weight in the planning balance.

4.2 Key harms include:

4.2.1 Landscape and Visual Effects: Introduction of solar panel equipment, BESS infrastructure, and multiple substations into sensitive rural landscapes, causing permanent change to character and views.

4.2.2 Heritage Impact: Adverse effects on the setting of multiple designated heritage assets, including Grade II listed buildings, with harm assessed by the applicant as less than substantial and minor adverse.

4.2.3 Ecological Impact: Loss and fragmentation of habitats, with potential impacts on protected species and biodiversity.

4.2.4 Agricultural Land Loss: Permanent and temporary loss of productive farmland including BMVL, affecting rural economy.

4.2.5 Residential Amenity: Noise, visual intrusion and disruption during construction and operation.

4.3 These harms are not minor or incidental. They represent a degree of harm that arises from the fundamental nature of the project and its route selection. They must be accorded very significant weight in the overall planning balance. These are addressed in more detail in Part 2. For the most part the assessment of harms in the application documents is accepted and adopted. The reason for highlighting the harms is to ensure that the very significant harms of the project are properly acknowledged and weighed in the balance.

4.4 The harms identified in the application documents are substantial and significant. They must be given very significant weight in the planning balance. The DCO must include robust controls to ensure these harms are not compounded by inadequate drafting or procedural weaknesses.

4.5 This Relevant Representation sets out the Council's principal concerns regarding the proposed development. Detailed technical analysis and any supporting evidence will be provided in the Local Impact Report at the Examination stage.

PART II: KEY CONCERNS BY TOPIC

5. Impact on Heritage Assets

Significance of Harm

5.1 Under Sections 66 and 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990, decision-makers must give special regard to the desirability of preserving listed buildings and their settings. This duty establishes a statutory presumption in favour of preservation, which must be given considerable importance and weight. The Council agrees that proposed development would result in less than substantial harm to the significance of the heritage assets affected.

5.2 Paragraph 212 of the National Planning Policy Framework (NPPF) requires that great weight be given to the asset's conservation, irrespective of the level of harm. Paragraph 213 NPPF further requires that this harm must be weighed against the public benefits of the proposal. In addition, paragraph 215 provides that this harm must be weighed against the public benefits of the proposal, including securing its optimum viable use. While the harm identified is less than substantial, it nevertheless should carry great weight in the decision-making process, as required by Sections 66 and 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990.

5.3 The approach to assessing the impact of the proposals on affected heritage assets, as set out in the Environmental Statement, is generally supported. However, it should be emphasised that Grade II listed heritage assets are designated for their national significance, and policy requires that “every effort should be made to preserve them”. Accordingly, it is incorrect to describe such assets as being of only regional value as stated in Table 10-3 of the Cultural Heritage Chapter [APP-046].
5.4 It is agreed that no designated heritage assets will be directly affected, although the proposals will affect the setting of various heritage assets and the way in which the setting contributes to appreciating and experiencing the significance of those assets. The Council disagrees as to how much the proposals affect the setting of some heritage assets as set out in more detail below.
5.5 It is accepted that Grade II heritage assets will generally have a medium level of sensitivity. However, sensitivity also depends on the specific nature and character of the asset, and its significance may be affected in each case. For example, the impact may be greater where solar panels are in close proximity and affect key views from and to principal elevations, as with Moulton Farmhouse (1373270) and Hillside House (1050216). By contrast, where views from and to the asset in the direction of the solar panels make less of a contribution to its overall significance, the asset is less sensitive to changes to its setting.
5.6 The impact on heritage assets has been described as low adverse harm, on the basis that only limited harm to the setting would occur and that the asset can still be appreciated from other aspects of their setting without being affected. However, given the markedly different character of the proposals when compared with existing local character, it is considered that the overall scale of effect should be assessed as moderate rather than minor, as set out in Table 10-5 [APP-046]. This constitutes a significant effect, as the setting would not be preserved. The harmful impacts on the various assets, as outlined below, should therefore be taken into account in the determination.

Impact on Setting of Heritage Assets

5.7 It should be noted that the experience and appreciation of heritage assets within their setting is not dependant on public access. However, the presence of footpaths can enable a greater number of people to experience and appreciate the asset, particularly in terms of views. In many cases, these footpaths and bridleways are themselves historic routes and connections between settlements that were not formalised as roads, and in some instances remain as trackways defined by longestablished hedgerows to each side. Examples include Hundred Lane (RB19) in Great Moulton and the initial section of the path from the small cluster of buildings between Saxlingham Nethergate and Saxlingham Green.
5.8 Although these historic paths and routes have not been identified as non-designated heritage assets in accordance with paragraph 216 NPPF, they together with dispersed designated heritage assets, which are often located in isolated positions away from settlements, form important components of the historic agricultural landscape experienced when moving through the area. As such the project may have a detrimental cumulative impact. This matter will be considered in further detail in the Local Impact Report.
5.9 The design, type and characteristics of the proposed solar panels are of concern. Owing to their appearance, the solar panels and substations will introduce an incongruous, alien and industrial character to the rural landscape. At a height of up to 4.5m, the proposed rotating solar panels would be particularly visible, and their movement and changing orientation would increase their prominence within the
setting of the heritage assets. They would also be significantly taller than a typically maintained historic field boundary hedge, further heightening their visual impact.
5.10 The height and design of the 4.5m panels limit the effectiveness of the proposed landscape mitigation measures, such as hedge planting and hedge reinforcement. As a result, tree planting has been proposed in some areas. However, this could have adverse effects including loss of important views and the introduction of a sense of enclosure within what is currently an open

landscape. Also, reliance on tree planting for screening due to the height of the panels, would extend the time required for vegetation to mature and provide effective mitigation.

5.11 There is limited detail regarding the extent to which tree planting would provide effective screening beyond the indication that native deciduous species are proposed. During winter months, when there is less foliage, such planting would offer less effective screening unless established as denser tree belts. While thicker tree planting plantation may better reflect historic landscape features such as plantations and coppices, the indicative masterplan does not clearly define the proposed density of planting or how it will be managed in certain areas. Also, the proposed tree planting will represent a long term and permanent change. It is therefore important its design responds appropriately to the local landscape character, and does not, in itself, give rise to harm, for example by creating an increased sense of enclosure or enclosure by resulting in the more permanent loss of important views. Para 40 of Historic England Setting Guidance Note states that "*screening can only mitigate negative impacts, rather than removing impacts or providing enhancement, it ought never to be regarded as a substitute for well-designed developments within the setting of heritage assets*."

5.12 Within areas close to designated heritage assets, a secured design parameter within the DCO should require the use of lower-height fixed panels at 3 m to minimise harm. This would reduce visual intrusion and enable more effective screening by native hedgerow planting, avoiding the need for extensive tree planting. The use of 4.5 m high panels should be restricted to locations where they would have the least impact, and where any screening through tree planting would not introduce additional adverse effects on the setting of heritage assets. In sensitive locations, including the setting of heritage assets and where views to and from an asset may be materially affected, the design parameters should require lower-height panels supported by hedgerow screening and intermittent hedgerow trees.

5.13 Assets notably impacted by the project during operation are:

5.13.1 Moulton Farmhouse, Barn Cottages, Hillside House, Cedar House, Wood Farmhouse, Grove Farmhouse, Hill House, and Hill Cottages (Grade II)

5.13.2 Low Farm (Non-Designated Heritage Asset)

Site Specific Heritage Concerns

Site 1B

5.14 The Council is concerned at the impact of the proposal on the setting of Grade II Moulton Farmhouse (1373270). The front elevation of the heritage asset faces west and is visible from FP13 at its west end, with its prominent vernacular thatched roof contributing positively to the surrounding rural character in views. Although an agricultural field remains to the west of the asset, the site would be located only 150m from the listed building. There is some existing hedge and tree planting that already provides a degree of screening, and this is proposed to be supplemented. However, this would not be sufficient to effectively screen the solar panels in views if the panels are 4.5m in height. Due to the visually incongruous and industrial nature of the panels, the level of harm should be considered moderately adverse and therefore significant, equating to a low to medium level of less than substantial harm.

5.15 To reduce the level of harm and more effectively mitigate the impact, it is suggested that the field immediately west of the proposal is also omitted. This would allow uninterrupted views toward Moulton Farmhouse from FP13 and enable a more extensive part of the asset's setting to be preserved. It would also reduce the impact on the north side of Hundred Lane (RB19), which would otherwise feel more enclosed and experience a change to its character as a result of the additional landscape planting proposed to either side. This approach would also reduce the impact to a low level of less than substantial harm.

5.16 There are currently views across the field toward the BESS and 400kV substation, located approximately 280m away from Barn Cottages (1050010). A 4m high solid fence is proposed for noise mitigation. It is unclear whether this is also intended to enclose the 400kV substation to

the south. If so, such a fence would represent a very unusual and incongruous feature within the landscape. Due to the distance and the presence of intervening buildings that limit intervisibility, it is agreed that the proposal would result in a minor adverse effect and lower level of harm.
5.17 To ensure that the level of harm to the heritage asset is minimised, it is advised that the landscape planting is of sufficient depth to form a substantial and dense tree belt to screen the acoustic fence. As the planting would be located to the south of the substation and would not affect sunlight to the solar panels, it could comprise a particularly dense area of tree cover, connecting to the existing wooded coppice to the west. The proposed tree planting would also be set at a sufficient distance from the heritage asset to avoid creating a harmful sense of enclosure.
5.18 Overall, the Council considers that, without the proposed mitigation changes and strengthened landscape strategy set out above, the development would result in a moderate and therefore significant level of harm to the setting of Moulton Farmhouse and associated heritage assets; such harm must be afforded considerable weight in the planning balance and requires further design amendments to ensure impacts are appropriately avoided and reduced.

Site 2A

5.19 The proximity of solar panels to Grade II Hillside House (1050216), originally constructed as a workhouse, is a concern. The asset has a strong historic connection to the surrounding agricultural landscape of the Depwade Hundred which it served, with many of the rural poor very likely to have been working the land as labourers, this being the principal employment in rural areas during the 19th Century. It is also likely that inmates from the workhouse were hired to work in the surrounding fields. It is therefore erroneous for the Cultural Heritage chapter to suggest that the asset was only historically connected to Pulham Market, as it was designed to house 400 inmates from a large surrounding area.
5.20 The former workhouse is a large and imposing three-storey building designed in a classical style, with its principal elevation facing west. The central section contained the boardroom, porters lodge and offices, as well as the chapel to the left side. It was a designed to be a highly visible and prominent building on the turnpike road, asserting a strong sense of authority over the surrounding area. The building would have held significant meaning to those working in the surrounding fields.
5.21 The close proximity of the proposed screening would create a sense of enclosure for views from the asset over agricultural land to the west, and also detrimentally affect views of the asset from the west from footpaths BR9 and FP8. Rather than screening the solar farm, the planting would screen the heritage asset from views and restrict views from it. The proposal would result in a moderate adverse level of effect and would be considered significant, as it alters the setting of the principal west-facing elevation.
5.22 It is therefore advised that, in order to provide more effective mitigation and to reduce the level of harm, the field immediately to the west of the asset should remain in agricultural use as a visual break, preserving part of the asset's setting to the west. Furthermore, the solar panels should be limited to 3m in height to reduce their visual impact and allow them to be screened by supplemented hedgerows, rather than extensive tree planting.
5.23 Overall, the Council considers that, in the absence of the mitigation measures identified and appropriate design controls, the proposal would result in a moderate and therefore significant level of harm to the setting of Hillside House, and this harm must be afforded considerable weight in the planning balance in accordance with statutory duties and national policy.

Site 4

5.24 It is agreed that given the distances involved and the ability to appreciate the heritage asset from other aspects of their setting, the scale of the effect will be relatively minor and at the lower end of less than substantial harm. However, the nature of the solar panels means that the

proposals will be very imposing and incongruous within wider landscaping setting of the assets, in particular Cedar House (1304177). To further reduce impact and harm, it is advised that, in this more sensitive area, the height of the solar panels should be also limited to no more than 3m.

5.25 Overall, while the level of harm is assessed as low and at the lower end of less than substantial, the Council considers that further mitigation through reduced panel height is necessary to ensure that the setting of Cedar House is appropriately preserved and that harm is minimised in accordance with national policy and statutory duties.

Site 7C

5.26 It is acknowledged that two Grade II heritage assets namely, Wood Farmhouse (1373238) and Grove Farmhouse (1050330), have a relationship, in terms of their setting, with the proposed area to their north. Wood Farmhouse is located further away from the site and at a lower elevation, such that only its roof is visible from footpath FP2 to the north-east. Grove Farmhouse is orientated so that its side gable faces north, and views from the footpath are also affected by intervening curtilage farm buildings. The two assets are, however, closely related to their wider landscape setting as traditional rural farm buildings within an agricultural context.

5.27 The proposal provides a setback from the assets, with landscape tree planting comprising native broadleaf woodland and linear tree belts intended to screen the panels and mitigate harm. However, this would create a sense of enclosure to the north, contrasting with the currently relatively open farmed landscape character. While the landscaping measures would be permanent and designed to screen taller 4.5m high solar panels, a preferable approach would be to use natural hedgerow planting with 3m high solar panels, thereby preserving the sense of rural agricultural openness that currently exists to the north of the assets.

5.28 Overall, while the level of harm may be limited, the Council considers that the current approach to mitigation introduces its own low adverse effects, and that a revised design utilising lower panel heights and hedgerow planting is necessary to preserve the openness and character of the agricultural setting and to minimise harm to the heritage assets in accordance with national policy and statutory duties.

Site 7D

5.29 There is an important cluster of historic buildings to the north of the site, including Hill House (1152265) and Hill Cottages (1373062), and Low Farm, which although unlisted, is of some age, appearing on earlier maps and featuring a steep roof that was likely originally thatched. This forms a historic grouping of rural dwellings, where views over surrounding landscape are important, as is the preserved farmland around the cluster which provides a visual break between the Saxlingham Nethergate and Saxlingham Green Conservation Areas. There is also a historic trackway, now forming footpath FP13, running from the cluster to the south-west.

5.30 The solar panel installations have the potential to be visible when passing through the landscape from the north, with direct views towards the proposal site before the road bends to the east, due to the relatively open character of the landscape. The masterplan shows an area of mitigation to the south of the buildings although. However, it is unclear what this will comprise and whether the intention is for it to be native broadleaf woodland. Dense tree planting could result in its own visual harm by creating excessive enclosure in an area that is currently characterised by more open views. It is therefore recommended that the field to the south should remain undeveloped to provide a more spacious rural setting and that the existing tree plantation visible to the south-east is extended to create a visual buffer with ecological benefits, helping to preserve the wider setting of the heritage assets.

5.31 Overall, the Council considers that, without the proposed refinements to avoid

overenclosure and retain openness to the south, the development would result in low adverse harm and the low end of less than substantial harm to the setting of this historic group and the visual and functional relationship between the two conservation areas. Such harm should be afforded appropriate weight in the planning balance in accordance with national policy and statutory duties.

Site 9

5.32 The rural landscape and agricultural setting are important to the village, parts of which are designated as a conservation area. The site would not be visible from the street to the north within the High Green Conservation Area. Properties along High Green, including the heritage assets have a dense tree cover to the rear, although there may be some visibility from the gardens at the west end. At current the proposals are for tree planting and infilling of gaps within the existing hedgerow. However, within the landscape surrounding Brooke, tree plantations are a characteristic feature of the wider rural setting of the conservation area. It is therefore recommended that the buffer strip to the north side of the proposed solar panels is of a sufficient depth and density to provide effective screening and to integrate with existing landscape characteristics.

5.33 Overall, the Council considers that, subject to the provision of a sufficient and appropriately designed landscape buffer, the development has the potential to minimise impacts on the setting of the conservation area; however, this mitigation must be robustly secured to ensure that the rural character and visual relationship of the area are preserved in accordance with national policy and statutory duties.

5.34 Planning Balance

5.34.1 Impacts to heritage assets must be given substantial weight in the planning balance. Even where the magnitude of impact is categorised as low, noticeable changes to the setting can justify classification as moderate adverse harm to the setting of listed buildings. Such effects represent a meaningful level of harm to heritage assets and require robust mitigation and clearly defined DCO requirements to ensure impacts are not exacerbated during detailed design.

6. Landscape and Visual

LVIA Overview

6.1 Chapter 7 of the Environmental Statement provides a comprehensive assessment of potential landscape and visual effects. Given the scale and nature of the project, it is unsurprising that the assessment concludes there will be residual moderate significant adverse effects on landscape character and visual amenity at multiple locations from which the application site is visible. The Council acknowledges that, within South Norfolk, there are no alternative sites that would avoid such effects.

6.2 The LVIA also concludes that there will be a major significant adverse effect on the Tas Tributary Farmland and Great Moulton Plateau Farmland landscape character areas, as these are both sensitive and generally open in nature. The BESS and substations will appear as industrial and incongruous features within the landscape and are likely to be visible due to the open nature of the countryside in these areas.

As such, they will cause detrimental harm to the landscape setting.

Arboricultural Concerns

6.3 The Arboricultural Impact Assessment (AIA) [APP-150] notes arboricultural surveys undertaken by two separate companies between 2024 and 2026. The Council request Island Green Power confirm the methodology used to identify veteran trees to demonstrate

consistency of approach between the two contractors, and to provide supporting evidence of these assessments

Hedgerow Assessment

6.4 The Council notes that no explicit Hedgerow Regulations Assessment has been completed or submitted as part of this DCO and has significant concerns regarding the approach taken to identifying important hedgerows. APP-119 states that in the absence of an Important Hedgerow Survey, it has been assumed that there are a number of Important Hedgerows across the Order Limits, with Section 5 indicating that this assessment is based solely on ecological value. This approach excludes hedgerows that may be important for historic reasons (e.g. pre-enclosure field systems). The Council is therefore concerned that the full implications for important hedgerows have therefore not been assessed and considers this information is essential to inform the Examination. Accordingly, the Council requests that the submission of a Hedgerow Regulations Assessment is provided to the Examining Authority, to ensure that all important hedgerows are properly identified and assessed prior to the determination of the DCO.

Outline Landscape and Ecology Management Plan (OLEMP)

6.5 The Outline Landscape and Ecology Management Plan [APP-199] sets out landscape mitigation measures, including Broadleaf Woodland, Linear Tree Belts and Individual Trees, Scrub, Native Hedgerows, Native Hedgerow with Trees, Instant Hedgerow, Flower Rich Pollinator, Tussocky Grassland, Neutral Grassland, Modified Grassland. The Council has the following comments.

6.5.1 As noted above in Section 5 of this representation, the introduction of woodland and tree belts into the predominantly open and rural landscape may create a sense of enclosure. This has the potential to be detrimental to the setting and experience of heritage assets and may also appear out of character with the open countryside;

6.5.2 The OLEMP also states that where Instant Hedgerows are not available, close-boarded fencing may be used to provide screening for glint and glare and visual amenity. The Council strongly objects to the erection of close-boarded fencing in the countryside for this purpose, as this would appear significantly out of character and harmful to the landscape, even with hedgerow planting alongside these fence panels;

6.5.3 Confirmation is required as to whether all “important” hedgerows have been identified. The Council considers that there may be systemic omissions of certain categories (see above) and failure to identify or survey hedgerows that may meet the criteria for importance;

6.5.4 The Council notes that the proposed landscape planting around the three 400kV substations comprises of the flower-rich pollinator mix, native hedgerow with trees, and some native linear tree belts at a greater distance. Due to safety requirements, the Council understands that trees can’t be planted in close proximity to the substations or along their boundaries. However, this does result in the substations appearing as prominent and visually intrusive elements within the open landscape;

6.5.5 The planting schedules propose a species mix that appears overly prescriptive; replacement planting should instead reflect the original species composition or be tailored to site-specific conditions.

6.6 Although the locations of ancient woodland are identified by Project Section within the application documents, there is no corresponding identification of veteran tree specimens. This information is necessary to enable the Council to properly review and provide informed comments.

7. **Noise and Vibration**

Noise Lack of Detailed Assessment

7.1 The Council considers that the Environmental Statement provides insufficient detail to assess potential noise and vibration impacts during both construction and operation. The BESS has not been modelled at the worst-case scenario for assessment and there is therefore no certainty regarding the adequacy of the proposed mitigation. Daytime hours have been used to assess the low frequency noise from the BESS and substations. However, to assess a true worst-case scenario morning, daytime, evening and nighttime should all be assessed. This is of particular concern give that the BESS is likely to be one of the main sources of noise for this project.
7.2 Table 12-22 [APP-048] presents noise levels by time of day. However, the Council requests that the data is split further to reflect more refined time periods, in recognition of the lower levels of background noise levels typically experienced in rural Norfolk during the evening.

- Early Morning 04:00-07:00
- Daytime 07:00-19:00
- Evening 19:00-23:00
- Night 23:00-04:00

7.3 The consultant has assessed the impact of the HDD works as being not significant based on BS5228 but does not appear to take into consideration the very low background noise levels in the area.

7.4 Whilst the Council understands that the final specifications of the equipment have not yet been finalised, the lack of definitive parameters creates uncertainty as to whether the proposed mitigation can be achieved or would be adequate. This raises the potential for significant impacts on the amenity of nearby residents.

7.5 It is also unclear what mitigation measures have been applied to achieve the change in noise levels for Table 12-26 [APP-048] for residual operational effects or what levels of attenuation have been assumed in the calculations.

7.6 The mitigation measures applied within the modelling in Appendix 12.2 [APP-179] have not been presented. The Council requires full details of what is proposed. We note that mitigation (~6dB) is proposed for some of the sites to reduce their impact on the existing noise environment. However, details of the specific measures proposed, and the practicality of their installation should be provided. The Council recommends that the mitigation measures are implemented across all sites to reduce the impacts as much as possible in accordance with the best practicable means (BPM). In addition, the Council considers that the Environmental Statement fails to demonstrate a robust worst-case assessment, as required by established EIA principles. In the absence of sufficient detail and certainty, this introduces a material level of uncertainty, which should be resolved in favour of the Council's position in the planning balance.

7.7 Table 3.14 of Appendix 12.2 [APP-179] provides a summary of Sound Source Data. However, this does not include any details of the National Grid Substation or its associated equipment. This requires clarification as the Council is concerned that the National Grid substation may not have been adequately modelled, including whether appropriate data has been used to assess its noise impact.

Noise Concerns About BESS Facility

7.8 Paragraph 12.8.44 of document reference APP-048 states that 14 residences would experience an early morning noise impact between 1 and 5dB above background. However, the report does not specify how many properties would be impacted by increases at the lower end (1dB) versus the upper end (5dB) which limits the ability to properly understand the distribution of impacts. The assessment of noise effects is informed by the concepts of the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL), as set out in the Noise Policy Statement for England and applied through the National Planning Policy Framework and Planning Practice Guidance. These policy documents do not prescribe fixed numerical thresholds and require such levels to be determined on a case-specific basis, having regard to local baseline conditions.

7.9 In this context, the Council considers that, given the very low background noise levels characteristic of this rural area, even relatively small increases above background may give rise to adverse effects on residential amenity. The Council is therefore concerned that the impacts may be understated in the report and that some receptors could experience a greater level of effect than presented.

7.10 The Council has concerns regarding the levels used in APP-048 and as such, some residents may be exposed to higher levels of noise impact than the report suggests. The Council's position is that noise emissions should be controlled such that they do not exceed background levels at sensitive receptors, consistent with the approach taken in previous BESS developments approved under the TCPA. The Council does not consider that there is any justification for departing from this approach in the present case.

7.11 The report also states that seven properties will experience morning noise levels of between 6 and 8db, which it defines as significant, long-term, and moderately adverse. This is approaching the Significant Observed Adverse Effect Level (SOAEL) of 10dB. The paragraph then directs the reader to section 12.9 (Additional Measures). However, this section only suggests potential ways to reduce the noise and includes a table showing the extent of reductions required. Further detail is needed on the specific mitigation measures to be implemented and the practicality of delivering them.

Concerns About Construction Impacts

7.12 The project appears to rely entirely on horizontal directional drilling (HDD), which can be a major source of noise and vibration nuisance. No justification has been provided as to why these works would need to be continuous. If works are required outside of the core hours, the Council reminds the applicant that this can be secured through a S61 application and does not need to be included in the DCO. However, to ensure clarity and enforceability, construction hours must be secured within the DCO and not deferred to later consent regimes. The Council also considers that noisy works should not be permitted to start before 08:00, Monday to Friday.

7.13 Driven piles are not considered acceptable due to the levels of noise and vibration they produce. It is recommended that screw piles are considered instead, especially as they would facilitate easier decommissioning.

7.14 A Noise Impact Assessment based on the "ABC method" from BS5228 should be undertaken prior to commencement. A vibration assessment should similarly be completed prior to commencement.

7.15 The Outline Cable Route Construction Statement [APP-216] states that spoil (topsoil and subsoil) will be stored temporarily within designated areas along the Cable Route Corridor (CRC) and within the temporary construction compounds. The spoil will be utilised to backfill the launch and reception pits, and to reinstate the temporary construction compounds and temporary access tracks. It further states that any contaminated spoil identified during construction would be transported off Site to a licenced waste facility for treatment. However, the Council are concerned that this appears to conflict with the Soil Resource Management Plan [APP-204] which states that all subsoil displaced by the cable will be removed from site. Further clarification is therefore requested on this apparent inconsistency.

7.16 The Council advise that consideration should be given to the prevailing weather conditions in the area. In recent years the weather conditions in Norfolk have been that we have had approximately nine months of drought followed by three months of rain. This has caused one DCO to only undertake excavation work for nine months of the year with the soils being unworkable in the remaining three months.

7.17 The Ground Contamination Report [APP-107] has generally concluded that there is a low risk to human health and appears to discount potential risks. But as it identifies potential SPCs, site investigation must be undertaken to quantify the level of risk. While it is accepted that the majority of the site may present a low risk due to its longterm use as agricultural farmland, other identified areas, e.g. former military establishments, have a clear potential for contamination. The types of contamination which could have significant implications for construction workers, existing residents, groundwater and the wider environment. The report does not explicitly state that site investigation will not be undertaken, but neither does it confirm that it will. The Council consider this lack of clarity to be unacceptable.

7.18 The report indicates that the risk associated with the former RAF bases is between Very Low and Low for the identified receptors. The Council agrees with the applicants' assessment regarding groundwater, surface water and ecology, but disagrees with the assessment of risk to human health. This is primarily due to the proposed excavation works required for the installation of cables and associated infrastructure, which create pathways for direct contact with, and inhalation of, potentially contaminated materials.

7.19 In summary, the Council considers that the assessment of construction impacts is insufficiently robust and lacks the level of detail required to demonstrate compliance with relevant policy and best practice. Key areas of concern include the reliance on continuous HDD works without justification, the absence of clearly defined and enforceable construction controls within the DCO, inconsistencies in approach to spoil management, and a lack of clarity regarding contamination risks and mitigation. In addition, the potential for significant noise, vibration and environmental effects during construction has not been adequately assessed or addressed. All of these concerns have been set out in further detail in **Appendix 1 Noise Report** and the Council reserve the right to comment further as and when further details are submitted throughout the examination.

7.20 The Council therefore considers that further information, clarification and strengthened DCO controls are required to ensure that construction impacts are appropriately managed and that unacceptable harm to residential amenity and the environment is avoided.

Electromagnetic Fields

7.21 The Council has concerns regarding the adequacy of the assessment of Electromagnetic Fields and sets out below its requests for additional information/clarification from the applicant.

7.21.1 Please provide evidence, including calculations, demonstrating that electromagnetic field (EMF) levels will be reduced below 4kV m^{-1}. Additionally, please specify the predicted EMF levels that will be experienced at the relevant receptor locations.

7.21.2 Please provide evidence demonstrating that the EMF will effectively be contained within the underground cable's insulation and sheath.

7.21.3 Please justify why human health is only classified as being of only Medium Sensitivity.

While humans may be regularly be exposed to EMF, this but does not necessarily mean that they are not sensitive to them, nor that even a slight increase in EMF would not have an adverse effect.

7.21.4 Please provide calculations to support the statement that the magnitude of impact is Low, and the resulting impact significance is Minor and Not Significant with regard to overhead cables.

7.21.5 Please provide evidence to support the 10 kV m^{-1} statement along with calculations demonstrating the <5 kV m^{-1} level, including the actual predicated value.

Requirements

7.22 Access Roads should not be located within 30m of residential properties, as APP048 identifies this distance as exceeding the Significant Observed Adverse Effect Level (SOAEL). For certainty and security, a requirement should be added to prevent access roads being located any closer to residential dwellings.

7.23 The Council notes that any replacement equipment, particularly relating to the substations and BESS, should be accompanied by a Noise Impact Assessment (NIA) to ensure that the noise environment is not adversely affected and that any replacement equipment is an equivalent or improved standard in terms of noise performance. While the applicant confirms in paragraph 12.2.19 of APP-048 that this has been scoped out of the Environmental Statement, the Council considers that provision should be secured to address the long-term impacts of the project arising from the installation of replacement equipment.

7.24 As noted above, nighttime Horizontal Directional Drilling is unacceptable. The Council requests that a requirement be added to restrict construction hours in order to protect residential amenity.

7.25 All below ground foundations and infrastructure should in their entirety, be removed rather than only to a depth of 1.2m as stated in APP-198. This approach would prevent future issues associated with residual material being left in the ground. However, the Council questions the practicality of preparing a Decommissioning Environmental Management Plan (DEMP) at this stage. Given the lifespan of the project, it would be more appropriate to secure this through a requirement, as decommissioning practises are undoubtedly going to evolve over time.

8. Ecology

Commitment to Biodiversity Net Gain (BNG)

8.1 The Council expects all developments to take every reasonable opportunity to enhance biodiversity and deliver a measurable net gain for nature. This requires strict adherence to the mitigation hierarchy i.e. avoidance, minimisation and compensation and should be supported by robust biodiversity net gain measures.

8.2 The applicant has committed to delivering BNG, to be secured through Requirement 9 of the Draft DCO and has provided a Biodiversity Net Gain Report [APP-218] and a Biodiversity Net Gain Statutory Metric [APP-220] setting out baseline and expected post intervention habitats. In line with TCPA planning applications, the Council would normally request an Excel version of the metric for review, together with copies of the condition assessments. The Council also strongly encourages alignment with the Local Nature Recovery Strategy (adopted October 2025) and the Norfolk Local Habitat Map to inform the BNG strategy and best practice guidance to ensure appropriate post-construction management of BNG.

8.3 Typically, for TCPA planning applications, there is a commitment to monitor the delivery of BNG measures over a 30-year period in line with the biodiversity gain condition under the Environment Act. This includes preparation of monitoring reports at defined intervals to demonstrate the ongoing delivery and maintenance of BNG. The Council therefore seeks clarification on the monitoring arrangements, including the frequency and content of monitoring reports, the body to which these reports will be submitted (for example, the LPA or the Planning Inspector). This is necessary to ensure that the BNG targets are being achieved, reported on

transparently and maintained.

Protected Species

8.4 Ten species of bat were recorded within the Order Limits. The Bat Activity Survey [APP-157] concludes that the site is of national importance for its bat assemblages, including the rarer specialised Noctule, Natterer's, and Daubenton bats. The Environmental Statement further concludes that the site is of significant importance for the very rare Barbastelle bat which was found to be highly abundant and ubiquitous across the entire site. Given the presence and importance of these species, the Council considers it likely that a European Protected Species licence may be required under the Habitats Regulations. In this context, the applicant must demonstrate how the three derogation tests will be met, namely: (i) that there are no satisfactory alternatives; (ii) that the development is for imperative reasons of overriding public interest; and (iii) that the favourable conservation status of the species will be maintained.

8.5 Data provided by the Norfolk and Norwich Bat Group identifies 12 Barbastelle bat maternity colonies whose Core Sustenance Zones overlap the Order Limits. Of these, Colonies at Saxlingham Wood and Spring Wood are located adjacent to the Order Limits. There are other ancient woodland adjacent to the order limits that have not been subject to survey by the Norfolk and Norwich Bat Group however, considering the roosting preferences of Barbastelle bats, it is not unreasonable to conclude that these woods are also likely to be used by Barbastelle bat maternity colonies.

8.6 Research indicates that solar sites can have a significantly negative effect on bats, resulting in a notable decrease in bat activity at both the centre of solar farms and along adjacent boundary features. There is also evidence to suggest bats may be repelled by solar farm developments. As these impacts differ between species, the effects of solar PV on bat activity should be assessed on a species-specific basis, rather than grouping species into broad risk categories. The Council therefore requests that additional bat activity surveys of woodland adjacent to the scheme are undertaken to inform an addendum to the EIA, with specific consideration given to the potential presence of Barbastelle maternity colonies in woodlands adjoining the order limits.

8.7 In the absence of additional survey data, this results in a degree of baseline uncertainty which undermines the conclusions of the Environmental Statement. The Council request that solar panels are avoided on sites and sub-sites where they immediately abut woodland to minimise potential impacts to bats and especially maternity colonies. Greater consideration should also be given to improving habitat within the site for Barbastelles through increasing edge habitats (scalloped edges to new woodland planting), in addition to restoring ponds, and providing insect rich corridors.

8.8 In the absence of additional surveys in relation to bat roosts, it is not clear whether these will be disturbed by the proposal, and therefore whether a derogation licence under the Habitat Regulations is required, or capable of being granted given the need to maintain the favourable conservation status of Barbastelle bats. Consideration must be given to the potential for roosts outside of the order limits which could nevertheless be subject to disturbance during construction.

8.9 The Council has previously identified that a breeding population of White Clawed Crayfish in the River Tas, which remains as one of the few Norfolk strongholds for this species. The Aquatic Habitat Assessment Report [APP-160] states that White Clawed Crayfish are unlikely to be present, as no field signs were observed. However, this conclusion appears to be based on habitat suitability rather than on presence/absence surveys.

8.10 As part of the assessment of operational impacts, collision risks for birds and bats (resulting in injury/death) in relation to the solar panels should be considered. The solar farm may attract birds/bats, create barriers to movement, or cause displacement which are distinct from habitat fragmentation effects arising directly from habitat loss associated with the project.

8.11 The Outline Protected Species Mitigation Strategy (OSPMS) [APP-161] proposes that works will be undertaken under a Great Crested Newt Precautionary Method Statement on the

basis that the scheme is unlikely to result in a legal offence. While this is not an uncommon approach for a solar NSIP, however, the Council has concerns that it appears to address only impacts associated with site clearance and does not adequately assess impacts arising from the loss of habitat associated with permanent infrastructure, such as the substations.

Design and Avoidance Measures impacts on Ecology

8.12 Buffers should be used to avoid and minimise impacts on existing ecological features such as ponds and woodlands. The Council requests that all ponds are subject to a minimum by 50 metres buffer, irrespective of the presence of Great Crested Newts, as this species may not consistently occupy the same ponds from year to year.

8.13 Details of the proposed hedge species mix are provided in Table 3.4 of the Outline Landscape and Ecological Management Plan (OLEMP) [APP-199]. However, the Council has concerns regarding the suitability of the proposed species and their compatibility with local habitats. Goat Willow, proposed as a hedging plant does not appear to be present within on-site hedgerows and is not typically characteristic of hedgerows within the Claylands. Similarly, white Willow trees within hedges are not recorded within hedges onsite and are not representative of typical hedge trees in the Claylands landscape. The Council therefore queries whether appropriate regard has been given to *'Planting Hedges in Norfolk- Maintaining Regional Character'* published by Norfolk County Council which provides guidance on suitable hedge species mixes for the South Norfolk Claylands in which the site is located.

Adequacy of Surveys

8.14 As part of the Long Stratton Bypass, additional water bodies were created as part of the landscaping scheme between 2024 and 2025. Although these water bodies are recently established, there remains a likelihood that Great Crested Newts may be present. The Council therefore seeks confirmation from the applicant that these ponds will be included in the 2026 survey season.

8.15 The impact assessment for Great Crested Newts uses eDNA survey data from 2019, 2020, 2023 and 2024. However, given the passage of time, the data from 2019 and 2020 are now too old to be relied on for determination purposes, and the data from 2023 is of borderline age.

8.16 Cable Route Corridor 7 passes through Fritton Grange Meadows County Wildlife Site (CWS) which contains lowland fen habitat. The crossing is proposed to be undertaken using HDD (minimum 5m below the riverbed) below existing peat deposits. A 30m buffer to the CWS and Hempnall Beck is proposed to avoid impacts during construction and operation. However, the thermos-resistivity assessment should be used to inform and substantiate the conclusion that heat generated by the cables will not adversely impact this irreplaceable habitat. Accordingly, it is requested that Chapter 9- Water Environment [APP-045] specifically considers impacts on lowland fen as an irreplaceable habitat and Fritton Grange Meadows CWS.

Overall Assessment

8.17 Following mitigation secured through DCO requirements, impacts on ecological receptors are predicted to be negligible or minor adverse. While these effects may influence individual receptors, they are not expected to compromise overall ecological integrity or conservation status.

9. Cumulative Impact

9.1 The Council notes a concentration of large-scale energy infrastructure proposals and consents within South Norfolk and the wider Norwich area. These schemes must be considered in terms of their cumulative and in-combination effects as required by the EIA Regulations and the Planning Act 2008, including:

9.1.1 Tasway Energy Park – 700MW Solar and Battery Energy Storage System (BESS) NSIP (Project Paused following Phase One consultation).

9.1.2 Norwich to Tilbury Overhead Lines Project- Installation of pylons and new 400kV overhead lines NSIP (currently in examination).

9.1.3 Consented and proposed TCPA renewable energy schemes in the vicinity of the site of this project.

9.1.4 Offshore wind projects and associated infrastructure:

9.1.4.1 Orsted Hornsea Project Three Offshore Windfarm NSIP cable routes and converter station northwest of Norwich Main;

9.1.4.2 Equinor Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects (SEP and DEP) cable routes and converter station south of Norwich Main;

9.1.4.3 Three consented National Highways schemes for works around Norwich.

9.2 The Council is concerned that the cumulative and in combination effects of these Projects, together with existing infrastructure, will result in:

9.2.1 Landscape and Heritage Harm arising from the introduction of industrialscale infrastructure incompatible with rural character;

9.2.2 Ecological Impact as a result of potential loss and fragmentation of habitats and effects on biodiversity.

9.2.3 Community Disruption due to noise, disturbance and disruption during construction and operation phases;

9.2.4 Economic Consequences, including potential negative impacts on local businesses and tourism.

9.3 The overlapping construction programmes, likely to extend over a number of years rather than months, will exacerbate these cumulative and in-combination effects.

9.4 Additional anticipated impacts include:

9.4.1 Movement of abnormal loads requiring road closures; 9.4.2 Road widening and associated loss of hedgerows and trees.

9.5 South Norfolk Council therefore urges the Examining Authority to:

9.5.1 Require comprehensive mitigation measures to address landscape, heritage, ecological and community impacts including those arising from cumulative and in-combination effects;

9.5.2 Ensure that construction phasing and traffic management plans are coordinated to minimise disruption to residents and businesses, having regard to the interaction between multiple schemes.

9.6 The Council acknowledges that there are national benefits with the delivery of these projects. However, these benefits are achieved at the expense of substantial local harm. Given the scale of identified impacts, the Council considers that significant weight should be afforded to heritage, visual, ecological and local amenity harms in the planning balance.

9.7 The Council remains committed to working pro-actively with the applicant as the application progresses through Examination with a view to resolving outstanding issues, particularly in relation to the precise drafting of requirements.

PART III: SCHEDULE 2 (REQUIREMENTS) and SCHEDULE 15 (PROCEDURE FOR DISCHARGE)

10. **General Comments**

10.1 The Council has reviewed the proposed requirements in line with National Planning Policy Framework (NPPF), which stipulates that planning conditions should be minimal and meet three tests: necessary, relevant to planning and the development, and enforceable, precise and reasonable.

10.2 The Council has significant expertise in discharging requirements for major infrastructure projects including:

10.2.1 Hornsea Three Offshore Wind Farm (2020);

10.2.2 Norfolk Boreas Offshore Wind Farm (2021);

10.2.3 Norfolk Vanguard Offshore Wind Farm (2022);

10.2.4 Sheringham Shoal & Dudgeon Extensions (2024);

10.2.5 A47/A11 Thickthorn Junction (2022); 10.2.6 A47

North Tuddenham to Easton (2022);

10.2.7 A47 Blofield to North Burlingham (2022).

10.3 The Council has a good track-record of discharging requirements. There have been no appeals or delays attributable to the Council in respect of any of the projects referred to above. The Council has worked proactively with the applicant in each case, reaching an agreed position within agreed timeframes. This collaborative approach has consistently ensured a solution that satisfied the applicants, the Council and all relevant consultees.

10.4 The key issues:

10.4.1 Future Governance Changes: Norfolk is part of the accelerated Local Government Review, meaning the current two-tier system will likely be replaced by unitary authorities before requirements are discharged. Wording must be future-proofed;

10.4.2 Discharge Authority: The Council recommends that the Local Planning Authority be designated as the discharge authority for all planning-related matters.

10.5 The Council has already engaged with the applicant and will continue to do so regarding the wording of the Requirements set out in Schedule 2 to the draft DCO. The Council recognises that these provisions may be subject to further revision. The Council reserves the right to comment further on the schedules and provisions within the DCO.

11. **Requirement 1 – Interpretation**

11.1 The Council notes that, in light of Local Government Review (LGR), South Norfolk District Council is unlikely to remain the named Local Planning Authority (LPA) responsible for discharging these Requirements. The drafting should therefore be amended to future-proof the provision and reflect potential governance changes.

12. **Requirement 3 – Approved Details and Amendments**

12.1 The Council notes that no clear procedure is set out for the submission or approval of amendments under this Requirement. It is unclear how such amendments are to be made

(including whether they must be submitted in writing), and the drafting does not provide a robust or transparent mechanism.

13. **Requirement 4 – Community Liaison Group**

13.1 The Council considers that this Requirement should be reworded to require details to be "submitted to and approved by the relevant planning authority." The current drafting is ambiguous as to whether approval is required prior to commencement, or whether submission alone is sufficient to discharge the Requirement.

14. **Requirement 5 – Detailed Design**

14.1 The Council notes that this Requirement does not include Works Nos. 4A and 4B relating to the proposed National Grid substation. Clarification is requested, for the avoidance of doubt, as to whether these works will be undertaken separately by National Grid and whether detailed design approval will instead be secured through a separate TCPA planning application.

14.2 Requirement 6 – Battery Safety Management

14.3 The Council considers that sub-paragraph (1) should be amended to refer to approval by the "relevant planning authority in consultation with" the consultees listed in subparagraph (3), rather than separating these provisions across different subparagraphs.

15. **Requirement 7 – Landscape and Ecology Management Plan (LEMP)**

15.1 The Council considers that the relevant statutory nature conservation body should be clearly identified in sub-paragraph (1). In this instance, this would fall to Natural England.

16. **Requirement 8 – Protected Species Mitigation Strategy**

16.1 The Council considers that the relevant statutory nature conservation body should be clearly identified in sub-paragraph (1), which would include Natural England. Clarification is also requested as to whether approval of this Requirement would remove the need for subsequent licensing from Natural England (e.g. for bats and Great Crested Newts), or whether further approvals would still be required.

17. **Requirement 9 – Biodiversity Net Gain (BNG)**

17.1 The Council considers that the BNG baseline should reflect the current condition of the site. There is concern that the baseline may not be agreed prior to precommencement works being undertaken. The Requirement should therefore be amended to ensure that the baseline is secured and agreed before any works that could affect it take place.

18. **Requirement 12 – Archaeology**

18.1 The Council considers that discharge of this Requirement would be undertaken in consultation with the Historic Environment Service, and this should therefore be reflected in the wording of sub-paragraph (1).

19. **Requirements 13 and 14 – Construction and Operational Environmental Management Plans**

19.1 The Council considers that discharge of these Requirements would require consultation with the Environment Agency, the Local Highway Authority, and Natural England. This should be explicitly included in the wording of sub-paragraph (1).

20. **Requirements 15 and 16 – Construction and Operational Traffic Management Plans**

20.1 The Council considers that sub-paragraph (1) should refer to approval by the "relevant planning authority in consultation with" the Local Highway Authority, rather than separating consultation and approval into different sub-paragraphs.

21. **Requirement 17 – Public Rights of Way**

21.1 The Council considers that sub-paragraph (1) should refer to approval by the "relevant planning authority in consultation with" the Local Highway Authority, for consistency and clarity.

22. **Requirement 18 – Soil Management Plan**

22.1 The Council considers that discharge of this Requirement should include "in consultation with" Natural England and this should be reflected in the wording of subparagraph (1).

23. **Requirement 19 – Skills, Supply Chain and Employment**

23.1 The Council considers that discharge of this Requirement should include "in consultation with" Norfolk County Council and that this should be reflected in the drafting of sub-paragraph (1).

24. **Requirement 20 – Site Waste Management**

24.1 The Council considers that discharge of this Requirement should include "in consultation with" Norfolk County Council (in its capacity as Minerals and Waste Authority), and this should be clearly reflected in the wording.

25. **Schedule 15 – Procedure for Discharge of Requirements**

25.1 Paragraph 5 – Fees

25.1.1 The Council does not agree with the proposed fees for the discharge of requirements. The Council considers that these should align with the national fee schedule, consistent with other NSIP Development Consent Orders with which the Council has experience.

26. **Further comments on Articles of the DCO**

26.1 The Council may wish to provide further comments on other Articles of the DCO; however, it reserves its position pending submission of a potentially revised draft DCO and will address these matters further within its Local Impact Report.

CONCLUSION

27. South Norfolk District Council appreciates the opportunity to provide this Relevant Representation and remains committed to engaging constructively throughout the examination process.

28. The Council respectfully requests that the Examining Authority gives full consideration to the matters raised, particularly those relating to environmental protection, local impacts, and compliance with statutory requirements.

29. We look forward to continued dialogue to ensure that the proposed development delivers its objectives while safeguarding the interests of our communities and the environment.

APPENDIX 1

East Pye Solar Farm and BESS Review of DCO Noise Assessment

(Adrian James Acoustics Limited AJA Report no. 15097/1) First Issue

adrian james acoustics limited

Octagon Business Park, Hospital Road
Little Plumstead, Norwich, Norfolk NR13 5FH
t +44 (0)1603 721 511 (Norwich)
t +44 (0)1728 901 105 (Suffolk)
e acoustics@adrianjamesacoustics.co.uk

EAST PYE SOLAR FARM AND BESS

REVIEW OF DCO NOISE ASSESSMENT

AJA Report no. 15097/1

Adrian James Acoustics Document Control Sheet

Client	South Norfolk Council Horizon Business Centre Peachman Way Norwich NR7 0WF
Filename	15097 Report 1.docx

QA Control

Rev	Date	Author	Checked by	Approved by
–	28 May 2026	[redacted]	[redacted]	[redacted]

Revision History

Rev	Details
–	First issue

Disclaimer

This report was completed by Adrian James Acoustics Ltd. on the basis of a defined programme of work and terms and conditions agreed with the Client. The report has been prepared with all reasonable skill, care, and diligence within the terms of the Contract with the Client, and taking into account the project objectives, agreed scope of works, prevailing site conditions, and the degree of manpower and resources allocated to the project. Recommendations in this report are for acoustics purposes only, and it is the responsibility of the Project Manager or Architect to ensure that all other requirements are met, including (but not limited to) structure, fire, and Building Controls.

Adrian James Acoustics Ltd. accepts no responsibility, following the issue of the report, for any matters arising outside the agreed scope of the works.

Any surveys were conducted, and this report has been prepared, for the private and confidential use of the Client only, and cannot be reproduced in whole or in part, or relied upon by any third party for any use whatsoever without the express written authorisation of Adrian James Acoustics Ltd. If any third party whatsoever comes into possession of this report, they rely on it at their own risk and Adrian James Acoustics Ltd. accepts no duty or responsibility (including in negligence) to any such third party.

Unless specifically assigned or transferred within the terms of the agreement, Adrian James Acoustics Ltd. retains all copyright and other intellectual property rights, on and over the report and its contents.

© Adrian James Acoustics Ltd. 2026

TABLE OF CONTENTS

1 INTRODUCTION 3
1.1 BACKGROUND 3
1.2 EXECUTIVE SUMMARY 4
2 NOISE RELATED PLANNING POLICY 4
2.1 NATIONAL PLANNING POLICY 4
2.2 LOCAL PLANNING POLICY 5
3 CONSTRUCTION AND DECOMMISSIONING NOISE 6
3.1 CRITERIA 6
3.2 PREDICTION METHODOLOGY 6
3.3 ASSESSMENT 7
3.4 MITIGATION AND POLICY TESTS 7
4 TRAFFIC NOISE (CONTRUCTION AND DECOMMISSIONING) 9
4.1 CRITERIA 9
4.2 PREDICTIONS 9
4.3 ASSESSMENT, MITIGATION AND POLICY TESTS 9
5 CONSTRUCTION AND DECOMMISSIONING VIBRATION 9
5.1 CRITERIA 9
5.2 PREDICTIONS 10
5.3 ASSESSMENT 10
5.4 MITIGATION AND POLICY TESTS 11
6 OPERATIONAL NOISE 11
6.1 CRITERIA 11
6.2 PREDICTIONS 14
6.3 ASSESSMENT, MITIGATION AND POLICY TESTS 17
7 CUMULATIVE EFFECTS 19
8 EXPERIENCE AND QUALIFICATIONS 20

1 INTRODUCTION

1.1 Background

Adrian James Acoustics have been appointed by South Norfolk Council (SNC) to review the noise and vibration assessments submitted as part of an application for a Development Consent Order (DCO) for the proposed East Pye solar farm and BESS.

The Applicant's noise and vibration assessments are in the following documents:

- EN0110014-000112-6.1.12 Environmental Statement Volume 1 Chapter 12 Noise and Vibration

- EN0110014-000164-6.2.12.2 Environmental Statement Volume 2 Figure 12.2 Noise and Vibration Sensitive Receptors
- EN0110014-000242-6.3.12.1 Environmental Statement Volume 3 Appendix 12.1 Baseline Sound Survey Report
- EN0110014-000243-6.3.12.2 Environmental Statement Volume 3 Appendix 12.2 Noise Modelling And Calculations

This report provides our comments on the assessments and recommendations on how SNC, in its role as the statutory consultee on noise matters, should respond. Suggested questions for SNC to raise with the Applicant and their consultants are set out **in bold.**

For each component of the overall assessment, we have reviewed the criteria, prediction methodology used, assessment outcome and proposed mitigation to determine whether, in our professional opinion, relevant policy requirements are met.

Appendix A contains a glossary of acronyms used in this report.

1.2 Executive summary

- The assessment framework broadly follows recognised standards (e.g. BS 5228, BS 4142, DMRB LA 111) and adopts appropriate metrics such as LOAEL and SOAEL.
- However, there are significant gaps in the transparency and justification of the prediction methodologies for construction noise, vibration, and operational noise modelling.
- Further information is required in several key areas before SNC can be satisfied that policy requirements are met.

2 NOISE RELATED PLANNING POLICY

2.1 National Planning Policy

The Environmental Statement (ES) states that the primary policy tests that the applicant will be assessed against are as follows:

- Overarching NPS for Energy (EN-1)
- NPS for Renewable Energy Infrastructure (EN-3)
- NPS for Electricity Networks Infrastructure (EN-5)

These policies, and other relevant national planning policy, all refer to principles set out in the Noise Policy Statement for England (NPSE). The Noise Policy Statement for England (NPSE) published by DEFRA in March 2010 sets out the Government's policy on noise, which is:

> *"to promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."*

The NPSE also introduces concepts from toxicology currently being applied to noise impacts by the World Health Organisation. These are:

- *NOEL – No Observed Effect Level:* This is the level below which no effect can be detected.
- *LOAEL – Lowest Observed Adverse Effect Level:* This the level above which adverse effects on health and quality of life can be detected.
- *SOAEL – Significant Observed Adverse Effect Level:* This is the level above which significant adverse effects on health and quality of life occur.

In simple terms, the policy tests set out in the NPSE are that:

- Noise impacts which exceed an agreed SOAEL threshold would not normally be permitted.
- Adverse noise impacts (which are between agreed thresholds for SOAEL and LOAEL) would only normally be permitted when the impacts are shown to be minimised through appropriate mitigation.
- Any noise impacts which are below an agreed threshold for LOAEL would be normally deemed acceptable, in planning terms, without need for additional mitigation.

2.2 Local Planning Policy

The ES references Polices 2 and 3 of the Greater Norwich Local Plan. In addition to this, the current South Norfolk Local Plan (2015) includes Policy DM 3.13, which states that:

Policy DM 3.13 Amenity, noise and quality of life

(1) Development should ensure a reasonable standard of amenity reflecting the character of the local area. In all cases particular regard will be paid to avoiding:

a. Overlooking and loss of private residential amenity space

b. Loss of day light, overshadowing and overbearing impact

c. Introduction of incompatible neighbouring uses in terms of noise, odour, vibration, air, dusts, insects, artificial light pollution and other such nuisances.

Planning permission will be refused where proposed development would lead to an excessive or unreasonable impact on existing neighbouring occupants and the amenity of the area or a poor level of amenity for new occupiers.

(2) In considering applications which may result in an increase in noise exposure, account will be taken of the operational needs of the proposed and neighbouring businesses, the character and function of the area including background noise levels at different times of day and night and the need to protect areas of rural tranquillity.

(3) Development will not be permitted where the proposed development would generate noise or artificial light which would be significantly detrimental to the amenity of nearby residents or the occupants of other noise sensitive uses. Proportionate mitigating measures including limiting conditions will be used to reduce the potential noise or artificial light impact to an appropriate level whenever practical to do so.

3 CONSTRUCTION AND DECOMMISSIONING NOISE

3.1 Criteria

The proposed construction noise impact thresholds are set out in Table 12-7 of the ES as follows:

Table 12-7 Construction and Decommissioning Noise Impact Levels for Noise Sensitive Receptors

Magnitude of Impact	Construction Sound Level $L_{Aeq,T}$ (dB) at Residential Receptor
High	Above or equal to the Threshold Level* + 5 dB
Medium	Above or equal to the Threshold Level* and below the Threshold Level* + 5 dB
SOAEL	
Low	Above or equal to the Ambient Sound Level and below the Threshold Level*
LOAEL	
Negligible	Below the Ambient Sound Level
*Threshold level determined as per BS 5228-1 Section E3.2 and Table E.1.	

The limits in Table E.1 of British Standard BS 5228-1:2009+A1:2014 (commonly known as the 'ABC methodology') are widely used, and in our opinion are justifiable. Note that the noise levels measured by the Applicant's consultant are reported in terms of daytime (07:00 to 23:00hrs) and night-time (23:00-07:00hrs) and the above threshold levels are defined in terms of day, evening and night-time periods. This means that additional analysis may be required to determine ambient noise levels if construction works are expected to take place between 19:00 and 23:00hrs.

Section 15.5.56 of the ES states that

> *"Based on guidance provided within BS 5228-1 (Ref 12-20), significant effects due to construction and demolition activity noise could occur when major or moderate effects are anticipated to exceed:*
>
> - *A period of 10 or more days of working in any 15 consecutive days; or*
> - *For a total number of days exceeding 40 in any 6 consecutive months."*

The wording of this statement refers to "significant effects" rather than exceedances of specific noise thresholds. This suggests that the time criteria are intended to apply at the EIA significance stage, rather than directly to exceedances of the defined SOAEL and LOAEL thresholds.

Question 1 - Confirm whether it is the Applicant's intention that the duration criteria set out in Section 15.5.56 are applied only in determining the significance of effects, or whether they are also intended to apply to exceedances of the SOAEL and LOAEL thresholds.

3.2 Prediction methodology

Appendix 12.2 Noise Modelling And Calculations states that the construction noise levels were predicted using the source data and methodology set out in British Standard BS 52281:2009+A1:2014 and provides a list of sound power data in Table 2.1. However, the document does not provide any description of the calculations which would allow a reviewer to validate the results.

Question 2 - Provide a detailed description of the calculation methodology used to predict construction noise levels at the receptors. This should include a commentary of the assumptions used (number and location of sources), and any relevant modelling parameters (e.g. temperature, attenuation factors, barriers), and examples of specific calculations.

3.3 Assessment

3.3.1 Noise from construction of Project Substations, National Grid Substation, BESS, Solar PV Arrays

Table 12-18 of the ES states that construction noise levels are predicted to exceed SOAEL at 1 receptor (NSR29) and exceed the LOAEL at 44 receptors.

Paragraphs 12.8.10 to 12 state that the exceedances of the SOAEL and LOAEL are not expected to be significant because they do not exceed a "temporal threshold" (see Question 1).

Question 3 – Please confirm the expected duration of the works which give rise to the predicted exceedances of the SOAEL and LOAEL.

3.3.2 Noise from Access Roads

Section 12.8.13 of the ES highlights that noise from construction access roads is predicted to exceed the SOAEL within 30m of the access roads, but is not significant as it is "unlikely" that access roads will be this close to receptors. We note that Table 2.2 of *Appendix 12.2 Noise Modelling And Calculations* shows that noise levels within 100m of any access roads are predicted to exceed 55 dB $L_{Aeq,T}$, which will exceed the existing ambient noise level (LOAEL) in almost all cases.

Question 4 - Confirm how many receptors will be within 30m and 100m of the proposed access roads and are therefore expected to be subject to noise levels which exceed the SOAEL and LOAEL. Please also confirm the expected duration of the works will give rise to these exceedances.

3.3.3 Noise from Horizontal Directional Drilling (HDD)

Table 12-19 states that HDD works for the cable route will exceed the SOAEL at 1 receptor and the LOAEL at 15 receptors during the daytime, and will exceed the SOAEL at 15 receptors and the LOAEL at 3 receptors at night. The ES states that HDD operations will take place over 1-2 days but it's not clear if the Applicant's position is that HDD works will occur only in the daytime or will be continuous through the day, evening and night-time periods. We note that the evening period is not assessed.

Question 5 – Confirm the circumstances that the HDD operations are expected to run continuously for 24-hour periods.

3.4 Mitigation and policy tests

The predicted construction noise levels exceed SOAEL and/or LOAEL at many receptors. This appears

to fail the NPSE's policy test to avoid noise impacts which exceed the SOAEL and demonstrate that impacts which exceed LOAEL are minimised through appropriate mitigation. However, we note that the predicted levels do not include the effects of screening or other mitigation, and the report does not discuss the duration over which construction noise is expected to occur (see Question 1).

Question 6 – Confirm what specific construction noise mitigation measures are proposed, and the residual noise impacts once these mitigations measures have been accounted for. Then please clarify the Applicant's position on compliance with the NPSE's policy test to avoid noise impacts which exceed the SOAEL and demonstrate that impacts which exceed LOAEL are minimised through appropriate mitigation.

4 TRAFFIC NOISE (CONTRUCTION AND DECOMMISSIONING)

4.1 Criteria

The proposed construction traffic noise thresholds are set out in Table 12-10 of the ES as follows:

Table 12-10 Construction Traffic Noise LOAELs and SOAELs

Time Period	LOAEL	SOAEL
Daytime (06:00 – 00:00)	55 dB $L_{A10,18hour}$ façade incident	68 dB $L_{A10,18hour}$ façade incident
Night-time (23:00 – 07:00	40 dB $L_{night,outside}$ free-field	55 dB $L_{night,outside}$ free-field

These criteria are taken directly from Table 3.2 of the Design Manual for Roads and Bridges LA 111 and are justifiable, in our opinion.

4.2 Predictions

The ES states in Section 12.8.26 that "*The likely change in road traffic noise levels as a direct result of the construction of the Scheme have been determined by comparing the predicted sound levels for the future baseline scenarios, with the future baseline plus construction traffic scenarios, based on traffic flow information provided by the Transport Consultant. Traffic noise levels are calculated from the future baseline traffic conditions.*"

This is an appropriate method of assessing the relative change in traffic noise levels due to construction activities. However, the threshold are determined in terms of absolute levels which means that the predicted changes in traffic noise levels cannot be compared against these.

Question 7 – Provide the results in Table 12-20 of the ES in terms of absolute noise levels (façade incident during the day and equivalent free field at night) so they can be compared against the threshold criteria set out in Table 12-10 of the ES.

4.3 Assessment, mitigation and policy tests

Section12.8.30 of the ES states that construction traffic noise levels are not expected to exceed LOAEL. This would suggest that noise levels from construction traffic are acceptable in policy terms, without the need for additional mitigation measures. This is plausible but requires the results to be presented in terms of absolute noise levels to confirm whether the policy test is met. See Question 7.

5 CONSTRUCTION AND DECOMMISSIONING VIBRATION

5.1 Criteria

The proposed construction vibration impact thresholds are set out in Table 12-8 of the ES in terms or Peak Particle Velocity (PPV) as follows:

- SOAEL – ≥1.0 mm/s
- LOAEL – ≥ 0.3 mm/s

These are widely used vibration limits based on guidance in BS 5228-2:2009+A1:2014 — *Code of practice for noise and vibration control on construction and open sites — Part 2: Vibration*, and in our opinion are justifiable.

Section 15.5.57 of the ES states that

> *"Based on guidance provided within BS 5228-2 (Ref 12-21), significant effects due to construction vibration could occur when major or moderate effects are anticipated to exceed:*
>
> - *A period of 10 or more days of working in any 15 consecutive days; or*
> - *For a total number of days exceeding 40 in any 6 consecutive months."*

The wording of this statement refers to "significant effects" rather than exceedances of specific noise thresholds. This suggests that the time criteria are intended to apply at the EIA significance stage, rather than directly to exceedances of the defined SOAEL and LOAEL thresholds. See Question 1.

In addition to the above thresholds, the ES adopts an additional vibration limit of 3 mm/s for the threshold for damage to buildings. The ES states that this is adopted as a conservative limit "to ensure that building damage would not occur". This is more onerous the building damage thresholds set out in BS 5228-2 and therefore is a robust approach.

5.2 Predictions

5.2.1 Construction vibration

Appendix 12.2 Noise Modelling And Calculations states that construction vibration levels have been calculated using reference data from BS 5228-2:2009+A1:2019, *Code of Practice for Noise and Vibration Control on Construction and Open Sites: Part 2 – Vibration*.

The reported vibration levels are plausible but there is only partial information on the data used in the calculations and it is not clear what calculation methodology was used.

Question 8 - Provide a detailed description of the calculation methodology used to predict construction vibration levels (vibratory ground compaction, percussive piling and HDD) at the receptors. This should include a commentary of the assumptions used (number and location of sources) and examples of specific calculations.

5.2.2 Access roads

The ES sites in Section 12.8.32 that "BS 5228-2:2009+A1:2014 (Ref 12-21) cites findings from the Transport Research Laboratory Report 429, *Groundborne Vibration Caused by Mechanised Construction Works* (Ref 12-28). Figure 46a of the TRL report shows that ground vibration generated by HGV movements typically reaches around 1 mm/s PPV at a distance of approximately 10 m, reducing to roughly 0.3 mm/s PPV at around 50 m.

This is plausible and aligns with the SOAEL and LOAEL thresholds without need for a separate calculation.

5.3 Assessment

The predicted construction vibration levels in Table 2.13 in Appendix 12.2 *Noise Modelling And Calculations* shows that construction activities associated with access roads would exceed SOAEL for any receptors within 45m and LOAEL with 100m of the access roads.

Question 9 – Confirm how many receptors will be within 10m, 45m, 50m and 100m of the proposed access roads, and are therefore expected to be subject to vibration levels which exceed the

respective SOAEL and LOAEL thresholds (due to construction activity and HGV movements respectively). Please also confirm the durations for which the impacts are expected to occur.

Section 12.8.25 of the ES states that vibration levels from HDD activities are below the LOAEL at all receptors. This is plausible, subject to the information on the calculation methodology (see Question 9).

5.4 Mitigation and policy tests

There are limited options for construction vibration mitigation, beyond those embedded within scheme and general construction controls. Therefore, if construction vibration levels are below SOAEL and all the available embedded mitigations options are incorporated into the design of the scheme and Construction Environmental Management Plan (CEMP) the NPSE policy tests are likely to be met (subject to the answers to the questions above).

6 OPERATIONAL NOISE

6.1 Criteria

6.1.1 Residential receptors

The proposed operational noise impact thresholds for residential receptors are set out in Table 12-11 of the ES in terms of the Rating Level ($L_{Ar,Tr}$, assessed in accordance with BS4142) as follows:

Table 12-11 Proposed LOAEL and SOAEL for Operational Plant Noise - Domestic Receptors

Magnitude of Impact	Rating Level ($L_{Ar,Tr}$ dB) at Noise Sensitive Domestic Receptor
High	Greater than 10 dB above the typical background sound level, depending on context.
SOAEL	
Medium	Greater than 5 and less than or equal to 10 dB above the typical background sound level, depending on context.
LOAEL	
Low	Greater than 0 and less than or equal to 5 dB above the typical background sound level, depending on context.
NOAEL	
Negligible	Equal to or less than the typical background sound level, depending on context.

The term No Observed Adverse Effect Level (as opposed to No Observed Effect Level) is not commonly used in noise assessments and its meaning in this context is unclear. This is because as the threshold up to which there are no adverse effects (NOAEL) is the same threshold above which adverse effects are first seen to occur (LOAEL).

Using the thresholds proposed by the Applicant, operational noise with rating of between 0 and 5 dB above the background sound level would be both above and below the level where adverse effects occur, which cannot be correct.

We understand that SNC have a precedent of setting operational noise limits for similar developments of a rating level at or below background sound level (subject to context) and we understand that SNC have proposed the same in this case. This would result in the following threshold levels for noise impacts:

- SOAEL: 10 dB above the typical background sound level, depending on context
- LOAEL: 0 dB above the typical background sound level, depending on context

This agrees with the Applicant's position that rating levels below at or below background sound level will not generate adverse impacts.

This position is also consistent with Section 12.9.2 of the ES which states that *"…to achieve the criteria of the local authority, additional mitigation will be applied to not exceed the NOAEL where practicably possible*"

6.1.2 Non-residential buildings

The proposed operational noise impact thresholds for non-residential buildings are set out in Table 12-12 of the ES in dB $L_{Aeq,T}$.

Table 12-12 Proposed LOAEL and SOAEL for Operational Plant Noise - Non-Residential Receptors

Receptor Type	Internal Ambient Sound Level dB $L_{Aeq,T}$	Magnitude of Impact
Executive Office	**SOAEL**	
	>40	Medium
	LOAEL	
	>35 and ≤40	Low
	≤35	Negligible
Place of Worship	**SOAEL**	
	>35	Medium
	LOAEL	
	>30 and ≤35	Low
	≤30	Negligible
Nursery	**SOAEL**	
	>40	Medium
	LOAEL	
	>35 and ≤40	Low
	≤35	Negligible

Setting LOAEL and SOAEL thresholds for non-residential receptors is a thorough approach by the Applicant which should be welcomed by SNC. However, I note that the criteria imply that a SOAEL and LOAEL can be the same numerical value, which cannot be correct.

Question 10 – Confirm the intended numerical values for LOAEL and SOAEL at nonresidential

receptors

6.1.3 Low frequency noise

Section 12.5.60 of the ES sets an additional parallel SOAEL threshold for low frequency noise in residential receptors as follows:

> *NANR45 (Ref 12-16) criteria applied to residential and educational receptors (high sensitivity), are provided in ES: Appendix 2.3 Legislation, Planning Policy and Guidance [EN0110014/APP/6.3.2.3]. Where the predicted levels exceed NANR45 (Ref 12-16) criteria, this may be considered as being above the SOAEL and therefore the significance of operational noise is modified to be significant. Anything equal to or below the threshold would be considered as below the SOAEL and the significance of operational noise would not require modification.*

We agree that low frequency noise from substations and transmission equipment is a key concern and that this is an appropriate approach.

6.1.4 Public rights of way (PRoW)

The proposed operational noise impact thresholds for non-residential buildings are set out in Table 12-13 of the ES in dB $L_{Aeq,T}$.

Table 12-13 Proposed LOAEL and SOAEL for Operational Plant Noise - PRoW (Medium Sensitivity)

Magnitude of Impact	Calculated Sound Level Along Footpath $L_{Aeq,T}$
High	>55 dB $L_{Aeq,T}$
SOAEL	
Medium	>50 and ≤55 dB $L_{Aeq,T}$
LOAEL	
Low	≤50dB $L_{Aeq,T}$ and above the ambient sound level
Negligible	Below the ambient sound level or ≤50 dB $L_{Aeq,T}$ whichever is lower

Defining LOAEL and SOAEL thresholds for public rights of way is a thorough approach by the Applicant which should be welcomed by SNC.

These thresholds are derived from the World Health Organization (WHO) *Guidelines for Community Noise* (1999), which sets noise levels for external amenity areas to minimise annoyance to residents, defined as Moderate (≤ 50 dB $L_{Aeq,T}$) and Serious (≤ 55 dB $L_{Aeq,T}$). The WHO guidelines make it clear that these noise limits are intended for anonymous or general environmental noise and situations where no single identifiable source dominates. Therefore, compliance with these limits will not necessarily prevent operational noise impacts in an existing rural noise climate. See Question 16.

6.2 Predictions

6.2.1 Background sound levels

The methodology and results of the Applicant's noise surveys are presented in EN0110014000242-6.3.12.1 Environmental Statement Volume 3 Appendix 12.1 *Baseline Sound Survey Report*. Results are provided for 6-8 noise surveys at 51 locations around the development site. AJA have not reviewed the noise survey at individual locations due to the scale of this task, but our initial impression is that the survey methodology appears appropriate.

The typical background sound levels used in the operational noise assessment are presented Table 22 of the survey report and are stated to be based on the statistical analysis in Appendix D of the same document. Appendix D presents modal distributions for the sound levels measured in Daytime (07:00 – 23:00), Night-time (23:00-07:00) and Early Morning (04:00-07:00) periods at each measurement location (for example, see below for location MP39).

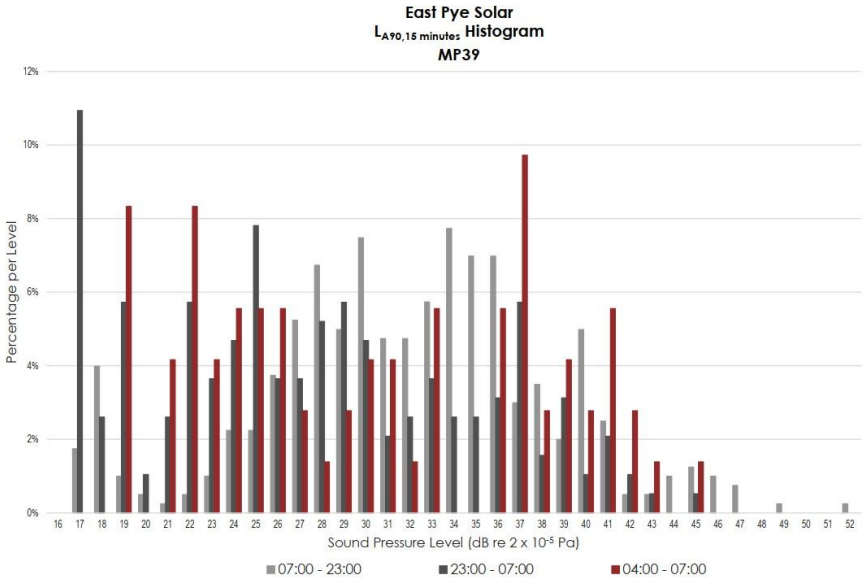


Table 22 reports the typical background sound levels measured at MP39 to be:

- Daytime: 30 dB $L_{A90,15mins}$
- Night-time: 22 dB $L_{A90,15mins}$
- Evening: 24 dB $L_{A90,15mins}$

There are several recognised approaches to determine typical background sound levels in BS 4142:2014+A1:2019 and the associated ANC BS 4142 Technical Note. However, it is not clear which statistical methodology has been used in this case.

Question 11 – Describe the specific statistical method used to determine representative background sound levels from the survey data presented in Appendix D of the Baseline Sound Survey Report.

6.2.2 Operational noise levels

The prediction methodology for the operational noise levels is contained in Section 3 of the Appendix 12.2 *Noise Modelling And Calculations* report. The report provides a brief description of the data,

screening and methodology used to predict operational noise levels at the receptors, which are summarised in Tables 3.17, Table 3.18 and 3.19 along with outline operational noise contours in Appendix B. This not enough information to tell if the results of the modelling are likely to be reliable. However, several specific questions arise from the limited information supplied:

Source data

Table 3.14 of this report sets out the data used in the noise modelling in terms of A-weighted sound power and sound pressure levels at 10m.

Table 3.14: Summary of Sound Source Data

Item of Plant	Sound Power (dBA)	Sound Pressure Level at 10 m (dBA)*
Solar Inverter (per inverter)	91	63
BESS Container – Daytime (per battery)	77	49
BESS Container reduced fan speed duty - night-time and early morning (per battery)	72	44
BESS Inverter (per inverter)	83	55
132kV Substation	85	57
400kV Substation	85	57
Solar Tracking Motor (per motor)	50	50

It's not clear if the modelling is based on the A-weighted source data in Table 3.14 or other spectral data. This is important because environmental attenuation effects are frequency dependent and likely to underpredict noise levels if A-weighted source data is used.

Size of noise sources

We note that the sound pressure levels presented in the table are consistently 28 dB lower than the corresponding sound power levels (with the exception of the solar tracking motor, which appears to be an error). This fixed difference implies that all sources have been treated as point sources radiating into a free field at a distance of 10 m. In practice, this assumption is unlikely to be valid, as many of the identified sources (e.g. transformers, inverters, containerised plant) are physically large and cannot be considered acoustically small relative to this distance. As a result, the approach is likely to underestimate sound pressure levels at nearby receptors, potentially leading to a significant underprediction of operational noise levels, depending on how this input data has been applied within the model.

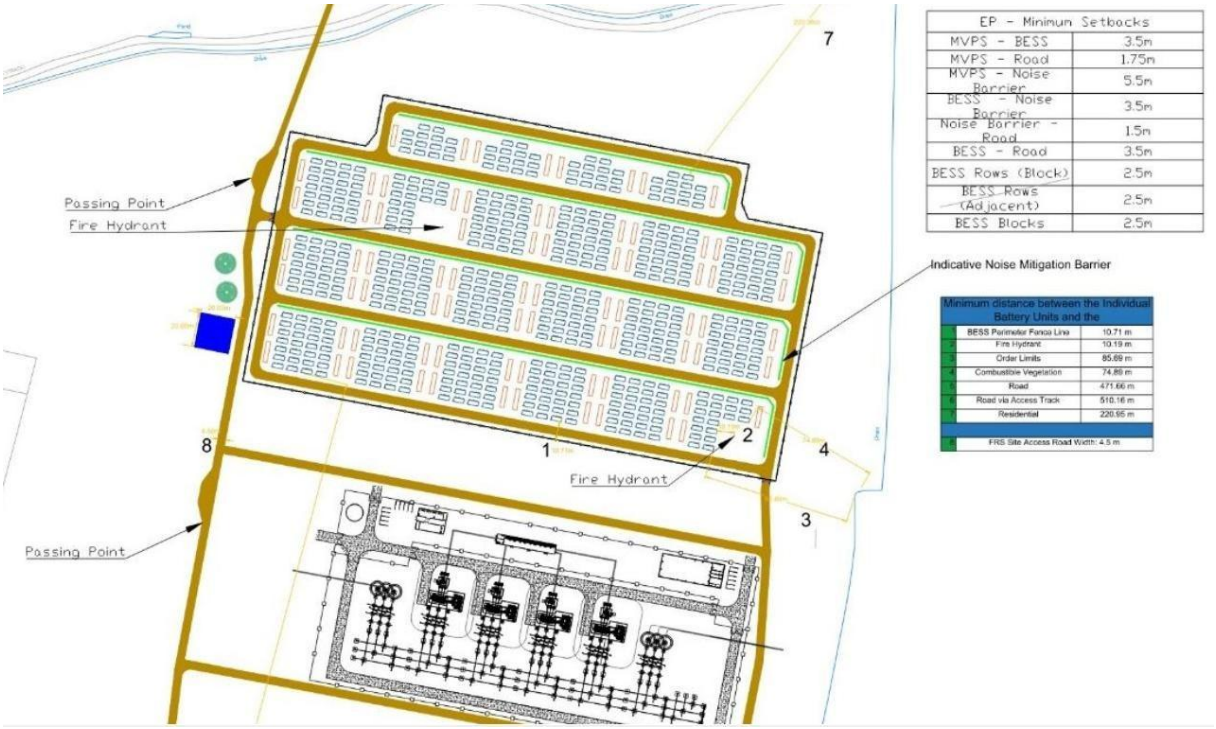
National Grid equipment

The report claims that the predicted noise levels include noise from the NG substations, but it's not clear from the supplied data that this has been included in the modelling. In our experience, noise sources associated with NG substations typically include transformers, shunt reactors, cooling fans, switchgear systems and corona discharge from overhead lines and other exposed conductors, which

are not listed in the document.

BESS Fencing

We note that the modelling includes 4 m high noise barriers around the BESS equipment and the environmental noise model includes for up to 2 reflections off surrounding surfaces.



EP - Minimum Setbacks	
MVPS - BESS	3.5m
MVPS - Road	1.75m
MVPS - Noise Barrier	5.5m
BESS - Noise Barrier	3.5m
Noise Barrier - Road	1.5m
BESS - Road	3.5m
BESS Rows (Block)	2.5m
BESS Rows (Adjacent)	2.5m
BESS Blocks	2.5m

Minimum distance between the Individual Battery Units and the	
1 BESS Perimeter Fence Line	10.71 m
2 Fire Hydrant	10.19 m
3 Order Limits	85.89 m
4 Combustible Vegetation	74.89 m
5 Road	471.66 m
6 Road via Access Track	510.16 m
7 Residential	220.95 m
8 FRS Site Access Road Width: 4.5 m	

In our experience, a larger number of reflections is required to accurately predict the noise propagation from sources surrounded by reflected surfaces and the operational noise model is likely to substantially under-predict noise from the BESS.

Question 12 - Provide a detailed description of the modelling methodology used to predict operational noise levels at the receptors. This should include detailed commentary of the source data, assumptions used (number, size and location of sources), justification of the model settings and worked examples of key models (BESS, NG Substation, Solar Tracking Motors etc).

6.2.3 Rating level

Table 3.16 of the Appendix 12.2 *Noise Modelling And Calculations* report explains that no acoustic feature corrections have been applied to the predicted sound level and presents the justification for this. This table correctly states that high voltage transformers can generate a 100Hz hum due to vibration of the transformer coil but states that "The acoustic modelling exercise indicates that the specific sound level from the high voltage transformers, including the 100Hz tone, is unlikely to be distinguishable at the receptor as it will be masked by other broadband sound relating to the BESS inverters and BESS Containers." Thers is insufficient information in the report to justify this claim. We also note that the there is no discussion of noise from shunt reactors (typically tonal), switch gear (impulsive noise), or corona discharge (cracking/buzzing).

Question 13 - Provide a more detailed justification (with detailed noise data for the specific sources and predicted levels at worst affected receptors) to justify the claim that that no acoustic feature corrections should be applied in this case.

6.2.4 Internal noise levels

Section 12.8.58 of the ES states that internal noise levels have been predicted by assuming a 10 dB reduction of external noise levels through partially open windows. This assumption is likely to be appropriate for broadband sources and therefore acceptable for nonresidential receptors, where the internal thresholds are set in terms of A weighted levels.

However, this approach may underpredict external noise break in at low frequency, which is highly variable and dependant on many factors including the construction, configuration, size and shape of the building elements. For assessment of internal levels against the lowfrequency NANR45 criterion we consider that a 5 dB outside to inside level difference is more appropriate.

6.3 Assessment, mitigation and policy tests

6.3.1 High-sensitivity receptors (residential, schools, hospitals and places of worship)

Table 12-22 of the ES summarises the impacts of operational noise for high-sensitivity receptors as follows:

Table 12-22 Summary of Operational Plant Noise Assessment for High Sensitivity Receptors

Effect Level	Number of Receptors Daytime (07:00 to 23:00)	Number of Receptors Early Morning (04:00 to 07:00)	Number of Receptors Night (23:00 to 04:00)
Below NOAEL	62	41	61
Between NOAEL and LOAEL	0	14	1
Between LOAEL and SOAEL	0	7	0
Above SOAEL	0	0	0

The predicted noise levels are above NOAEL (which in our opinion equates to the actual LOAEL in the case of residential receptors, see Section 6.1.1) at up to 21 receptors but do not exceed SOAEL at any receptor.

Notwithstanding the comments above on the prediction methodology, this appears to meet the first policy test of the NPSE to avoid significant adverse impacts. Section 12.9 of the ES discusses options for additional mitigation measures, presumably to comply with the second test of the NPSE to minimise adverse impacts with appropriate mitigation.

Table 12-25 provides the following reductions required to reduce noise levels to below NOAEL (which

in our opinion equates to the actual LOAEL in the case of residential receptors).

Table 12-25 Sound Reduction Requirements for Solar Inverters

Site	Sound Reduction Requirement dB
Site 3	3 to 6
Site 7	1 to 9
Site 8	1 to 7
Site 9	2 to 3

The ES states that options for additional mitigation "*include low-noise inverter models, acoustic enclosures, relocation or reorientation of plant, or installation of noise barriers, subject to further detailed design*" and that these measures are included within the Outline Operational Environmental Management Plan [EN0110014/APP/7.2] (OEMP). The OEMP lists generic noise mitigation measures which could be applied but does not provide details of these. We note that Table 3.7 of the OEMP includes a commitment for noise levels at receptors to be below the background sound level, which is welcomed as meeting the NPSE policy to minimise adverse impacts with appropriate mitigation (assuming the mitigation can be implemented and the stated noise reductions are achievable in practice).

Question 14 – Provide additional commentary showing examples of how the suggested mitigation measures might practically be implemented to achieve the noise reductions stated in Table 12-25 of the ES within the other project constraints (including visual impact).

Question 15 – Confirm whether the commitment for noise levels to be below the background sound levels at residential receptors be secured with a DCO Requirement?

6.3.2 Low frequency noise in dwellings

The predicted internal low-frequency noise levels within dwellings are all below the NANR45 threshold (SOAEL). Compliance would still be achieved even assuming a conservative worst-case façade attenuation ('break-in') of 5 dB.

Notwithstanding the comments above on the prediction methodology, this appears to meet the first policy test of the NPSE to avoid significant adverse impacts.

6.3.3 Public rights of way (PRoW)

As discussed, in our opinion the proposed absolute noise thresholds for public rights of way do not account for the differences in character of the noise from existing and proposed sources, and compliance with these limits will not necessarily prevent operational noise impacts in an existing rural noise climate.

Furthermore, we note that Table 3.7 of the OEMP commits to control noise levels to below 55 dBA on

public rights of way. This is the SOAEL set out in Table 12-13 of the ES and the proposal therefore does not meet the NPSE policy test to minimise adverse impacts.

Question 16 – Provide details of the existing ambient noise levels and the predicted operational noise levels at the PRoW receptors (NSR6, NSR12, NSR19, NSR27, NSR26, NSR57, NSR63, NST70, NSR79).

7 CUMULATIVE EFFECTS

Table 12-28 of the ES considers the combined effects of two nearby consented developments alongside the proposed scheme.

Table 12-28 Discussion on Operational Phase Cumulative Effects

Planning Ref	Comment
2024/3817	The proposed solar scheme is located in the field adjacent to the BESS site. A noise impact assessment has been provided as part of the application. The noise impact assessment authored by Inacoustic (ref 25-014) demonstrates that the shared receptor NSR3A could be exposed to specific sound levels 29 dBA $L_{Aeq,T}$ from the Scheme and 33 dBA $L_{Aeq,T}$ as a result of the committed development. The cumulative sound level from both schemes will likely result in 34 dBA $L_{Aeq,T}$. As no corrections are applied to the rating level, this would result in rating levels that are considered between the NOAEL and LOAEL. It should be noted that the Inacoustic report does not account for screening from the panels, which could result in up to 5 dB for partial screening and as a result, the specific sound levels from the scheme would likely be less than presented in the report.
2025/1689	The proposed development is located approximately 900 m to the north of the NG substation site. As such, the intervening distance would result in substantial attenuation of sound from the scheme before reaching any receptors that could be common to both schemes. Consequently, noise contributions from the Scheme at any shared receptors would be very low and materially below levels at which they could interact cumulatively with noise from the committed development. On this basis, the potential for cumulative operational noise effects between the two developments is considered negligible.

For application 2024/3817, the reported noise levels do not include the additional mitigation measures committed to in the OEMP. Even if those mitigation measures were applied, the combined noise level would remain above the existing background sound level and would therefore constitute an adverse impact the thresholds set out in Table 12-11 of the ES.

Question 17 – Confirm if the commitment in the OEMP to reduce operational noise level to below existing background sound levels extends to a commitment to keeping the cumulative noise level below the existing background sound level at NSR3A?

The approach for 2025/1689 appears reasonable.

We have not checked whether there are any additional developments which should be considered in cumulative assessments.

8 EXPERIENCE AND QUALIFICATIONS

This report has been prepared by [redacted], Head of Technical at Adrian James Acoustics. [redacted] is a [redacted]. He has a [redacted] in [redacted] from the [redacted] and has 25 years' experience working as a consultant engineer.

[redacted] has over two decades experience conducting, supervising and reviewing environmental noise impact assessments. [redacted] also worked as technical advisor to East Suffolk Council on their responses to the DCO applications for Sizewell C and the East Anglia One North and East Anglia TWO windfarms.

Since 2023, [redacted] has sat on the Institute of Acoustics' Membership Committee, which is responsible for upholding professional standards and investigating complaints made against members of the professional body.

APPENDIX A GLOOSARY OF ACRONYMS USED IN THIS REPORT

Acronym	Full Term
AJA	Adrian James Acoustics
ANC	Association of Noise Consultants
BESS	Battery Energy Storage System
BS	British Standard
CEMP	Construction Environmental Management Plan
DCO	Development Consent Order
DEFRA	Department for Environment, Food & Rural Affairs
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
LAeq,T	Equivalent Continuous Sound Level
LAr,Tr	Rating Sound Level
LA90,T / LA90,15min	Background Sound Level
LOAEL	Lowest Observed Adverse Effect Level
NG	National Grid
NOAEL	No Observed Adverse Effect Level
NOEL	No Observed Effect Level
NPSE	Noise Policy Statement for England
NPS	National Policy Statement
NSR	Noise Sensitive Receptor
OEMP	Outline Operational Environmental Management Plan

PPV	Peak Particle Velocity
PRoW	Public Right of Way
SNC	South Norfolk Council
SOAEL	Significant Observed Adverse Effect Level
TRL	Transport Research Laboratory
WHO	World Health Organization

adrian james acoustics limited

e acoustics@adrianjamesacoustics.co.uk

w www.adrianjamesacoustics.co.uk

Main Office

Octagon Business Park
Hospital Road
Little Plumstead
Norwich
Norfolk
NR13 5FH

t +44 (0)1603 721 511

Suffolk Office

10 Regal Gardens
Framlingham
Suffolk
IP13 9FP

t +44 (0)1728 901 105

Registered in England & Wales No. 4615839
Registered Office: 7 The Close, Norwich NR1 4DJ

ANC ACOUSTICS & NOISE CONSULTANTS

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

9th December 2025

Contact:
[redacted]
Director

The Landscape Partnership
The Granary, Sun Wharf
Deben Road
Woodbridge
Suffolk, IP12 1AZ

t: 01394 380 509

w: thelandscapepartnership.com

The Landscape Partnership Ltd is a practice of Chartered Landscape Architects, Chartered Ecologists and Chartered Environmentalists, registered with the Landscape Institute and a member of the Institute of Environmental Management & Assessment and the Arboricultural Association.

Registered office

The Landscape Partnership

Greenwood House
15a St Cuthberts Street
Bedford
MK40 3JG
Registered in England No. 2709001

Contents

Executive Summary
1 Introduction 1
2 Planning policy context 5
3 Methodology for the Landscape Susceptibility Study 14
4 Energy-related development scenarios 25
5 Findings of the Landscape Susceptibility Study 51
6 Local Landscape Character Assessment relating to Norwich Main Substation 58
7 Policy DM 4.6: Landscape Setting of Norwich 68

Appendices

1 Figures
2 Criteria for Assessing Susceptibility to Change
3.1 Landscape Susceptibility Analysis – Solar PV
3.2 Landscape Susceptibility Analysis – AD plants
3.3 Landscape Susceptibility Analysis – Battery storage
3.4 Landscape Susceptibility Analysis – Overhead powerlines
3.5 Landscape Susceptibility Analysis – Underground cable routes
3.6 Landscape Susceptibility Analysis - Substations
4 Local Landscape Character Analysis

Executive summary

The district of South Norfolk is increasingly finding itself the host of many energy-related nationally significant infrastructure projects (NSIPs) and being asked to determine energy-related planning applications. This increased pressure is due to a number of factors including: changes in the way energy is generated, changes in national policy, the availability of large areas of agricultural land, the high number of sunshine hours in the district, and the availability of existing transmission infrastructure.

The district encompasses a number of different types of landscape, including river valleys, farmland plateau, settled plateau parkland, and urban fringe, as well as transitional areas, for example between the plateau and the river valleys. These landscapes are described in the South Norfolk Landscape Character Assessment (2012).

Since different landscapes are defined by different physical and perceived qualities and attributes, it is likely that they will have differing resiliencies to a particular form of development. For example, a rural landscape could more readily accommodate a traditional barn, without changing the character of the area, whereas other types of development such as a distribution warehouse could potentially result in important changes to the character of the landscape.

In 2024, South Norfolk Council commissioned The Landscape Partnership to undertake a study to assess the sensitivities of the various landscapes of South Norfolk district in relation to energy-related NSIP and non-NSIP projects.

The aim of the study is to provide guidance for those seeking to identify suitable sites for the location of energy generation, storage and transmission projects. It will also be used to inform the council's responses to such proposals in the context of national and local planning policies and the need to reasonably minimise any adverse effects on the landscape and communities of South Norfolk.

The SPD plans positively for energy-related infrastructure but there is also high regard for the intrinsic beauty of the district and to safeguard it for generations to come. The study is written as an evidence document for protecting South Norfolk landscapes from inappropriate development that would harm that intrinsic beauty and character.

Applicants for energy-related projects should not underestimate the importance of landscape-related considerations when making a planning application. Development proposals in landscapes with a high susceptibility and vulnerability to change will be considered less favourably, unless they provide significant and appropriate mitigations that reduce the harm.

The study has two main objectives:

i) To assess the landscape susceptibility of the landscape types and landscape character areas identified in the South Norfolk Landscape Character Assessment in relation to different types and scales of energy development/infrastructure.

ii) To provide guidance to assist the site-specific design of the various energy-related development and infrastructure projects, including the appropriate approach to layout, siting and landscape proposals within the district and its different landscape types.

The energy-related development scenarios considered in this study are:

- solar photovoltaic developments (small-scale up to 5MW, medium-scale up to 15MW, large-scale 15 to 50MW, and very large scale over 50MW)
- anaerobic digestion (AD) plants (farm scale up to 1ha in size and larger installations up to 5ha)
- battery storage facilities (small scale up to 1ha, and larger scale over 1ha)
- overhead powerlines (132kV lines that utilise smaller pylons and 400kV lines that utilise the largest pylons)
- underground cable routes
- substations

South Norfolk Council has previously published a similar study regarding wind turbine developments: South Norfolk District, Wind Turbine Landscape Sensitivity Study, dated April 2006.

The study also includes:

- a more detailed local landscape character assessment to identify the special qualities and characteristics of the landscape surrounding the Norwich Main Substation, and how they might be affected by energy-related projects,
- consideration of South Norfolk Local Plan 2015 Policy DM4.6, which seeks to protect the landscape setting of the A47 Norwich Southern Bypass as it passes to the south of Norwich, and how that might inform energy-related projects.

The findings of the study are summarised in this report, which should be read in conjunction with the accompanying appendices.

1 Introduction

1.1 Introduction to the Supplementary Planning Document

1.1.1 The South Norfolk Landscape Susceptibility Study Supplementary Planning Document (SPD) provides additional guidance on matters covered by the South Norfolk Local Plan, and is a material consideration for decision makers.

1.1.2 The SPD expands on district-wide policies in the Local Plan and provides additional details on how they will be implemented.

1.1.3 The purpose of this susceptibility study is to assess the susceptibility of different landscapes to various types of energy-related development.

1.1.4 The document also provides design guidance for the different types of development which might come forwards. The Supplementary Planning Document provides additional advice and guidance on protecting and enhancing local character and achieving sustainable development, and expands on policies set out in the adopted Local Plan, in particular *Policy 3 – Environmental Protection and Enhancement* in the Greater Norwich Local Plan.

1.1.5 Specific objectives of the SPD are to:

- Enable applicants to understand the relative susceptibility of the landscape to different types of energy-related development,
- Assist applicant's understanding of the local context including locally distinctive characteristics and their susceptibility to change,
- Help ensure that proposals are appropriately designed to be compatible with their surroundings.

1.2 How to use this document

1.2.1 Users are recommended to refer to the South Norfolk Landscape Character Assessment to understand which Landscape Character Area a particular site falls within. Users can then refer to the overall findings in Section 5 or to the more detailed Landscape Susceptibility Analysis in Appendix 3 to understand how susceptible the landscape is to different scales of development. Applicants should also refer to the design guidance in Section 4 to help ensure that development proposals make a positive contribution to local character and distinctiveness, and achieve good design.

1.2.2 The purpose of the SPD is to provide additional evidence about South Norfolk's landscape and this evidence will be a material consideration for a wide variety of energy-related development proposals. These range from Nationally Significant Infrastructure Projects (NSIPs) that affect South Norfolk, to all other schemes under the Town and Country Planning Act 1990, which are

determined by the Council.[1] Due regard should also be given to other adopted landscape guidance relevant to the local context.

1.2.3 All proposals for energy generation, storage, and transmission must seek to achieve sustainable development, and it should be recognised that landscape effects are often an important consideration. On which basis South Norfolk Council will use this SPD as evidence to resist inappropriate proposals for development in landscapes with a high susceptibility and vulnerability to change, unless appropriate and effective mitigation is being provided that addresses the harm.

1.3 Background to the study

1.3.1 The district of South Norfolk is increasingly finding itself the host of many energy-related NSIPs (nationally significant infrastructure projects) and the Council is also being asked to determine energy-related planning applications under the Town and Country Planning Act. Many of these projects are attracted to the district due to the proximity of the electricity transmission hub known as Norwich Main, which is located within the district, to the south of Norwich.

1.3.2 South Norfolk Council has previously published a study on the sensitivity of the landscape of the district to further wind turbine developments (South Norfolk District, Wind Turbine Landscape Sensitivity Study),[2] but as assessment of other types of energy-related development has yet to be undertaken.

1.3.3 The council has been successful in bidding for funding under the Department for Levelling Up, Housing and Communities' Innovation and Capacity Fund, which aims to help speed-up infrastructure delivery. Part of the funding has enabled the council to commission a study to assess the sensitivities and capacities of the various landscapes of South Norfolk district to accommodate energy-related NSIP and non-NSIP projects.

1.3.4 The aim of the study is to provide guidance for those seeking to identify suitable sites for the location of energy generation, storage and transmission projects. It will also be used to inform the council's responses to such proposals in the context of national and local planning policies and the need to reasonably minimise any adverse effects on the landscape and communities of South Norfolk.

1.4 Commission

1.4.1 The Landscape Partnership was commissioned by South Norfolk Council in April 2024 to undertake the study of the susceptibility of the landscape of the district of South Norfolk in relation to energy generation, storage and transmission.

1.4.2 The results of the study are presented in this report, with further assessment and analysis contained in the accompanying appendices.

[1] NSIP are projects of such size that permission for them needs to be given at a national level by the Secretary of State. South Norfolk Council are not responsible for determining NSIPs.
[2] South Norfolk District, Wind Turbine Landscape Sensitivity Study, Land Use Consultants, April 2006, final amendments January 2008

1.5 Objectives

1.5.1 The study has two main objectives:

i) To identify the landscape susceptibility of different types and scales of energy development/infrastructure in relation to the seven generic landscape types (LTs) in the district (A: Rural River Valley, B: Tributary Farmland, C: Tributary Farmland with Parkland, D: Settled Plateau Farmland, E: Plateau Farmland, F: Valley Urban Fringe and G: Fringe Farmland) as defined in the South Norfolk Landscape Character Assessment[3], along with the 20 geographically discrete landscape character areas (LCAs) identified in the assessment.

ii) To provide guidance to assist with the site-specific design of different energy development/infrastructure projects, including the appropriate approach to layout, siting and landscape proposals within the district and its different landscape types.

1.5.2 The study area comprises the whole of the district of South Norfolk except for the areas which fall within the Broads Authority Executive Area.

1.5.3 The study includes a more detailed local landscape character assessment to identify the special qualities and characteristics of the landscape surrounding the Norwich Main Substation (which, as noted above, is a particular focus for energy-related projects) and how they might be affected by energy-related projects. The study area for this assessment encompasses the landscape within a 5km radius of Norwich Main, but excludes areas within the Norwich City administrative boundary.

1.5.4 The study also includes specific consideration of South Norfolk Local Plan 2015 Policy DM4.6, which seeks to protect the landscape setting of the A47 Norwich Southern Bypass as it passes to the south of Norwich, and how that might inform energy-related projects.

1.6 Structure of the report

1.6.1 The Landscape Susceptibility Study is structured as follows:

- Section 1 provides an introduction to the Landscape Susceptibility Study and establishes its purpose.
- Section 2 sets out the methodology which has been used to undertake the Landscape Susceptibility Study.
- Section 3 provides a high-level summary of planning policy as it relates to the design and the landscape siting of energy-related development.
- Section 4 identifies the different types and scales of energy projects and infrastructure that have been considered in the study, i.e. the energy-related development scenarios. It includes an overview of their potential effects on the landscape, and design guidance to minimise such effects.

[3] South Norfolk Landscape Assessment, Landscape Character Areas of the Rural Policy Area, Land Use Consultants, April 2006

- Section 5 provides an overview of the LTs and LCAs within the district and presents a summary of the findings of the Landscape Susceptibility Study for each of the development scenarios as they relate to each LT and LCA.
- Section 6 is a local landscape character assessment of a 5km radius of the Norwich Main.
- Section 7 considers how the Norwich Southern Bypass Protection Zone policies might influence the form and siting of energy-related development.

1.6.2 The report is supported by a number of accompanying appendices:

- Appendix 1: Figures
- Appendix 2: Criteria for assessing Susceptibility to Change
- Appendix 3: Landscape Susceptibility Analysis
- Appendix 4: Local Landscape Character Analysis

2 Planning policy context

2.1 Overview

2.1.1 The following paragraphs provide a high-level summary of planning policy as it relates to the design and location of energy-related developments.

2.2 National Planning Policy Framework (NPPF)

2.2.1 The National Planning Policy Framework[4] [NPPF] sets out the Government's planning polices for England and how these should be applied. It promotes a plan-led planning system and requires that development plans include strategic policies to address each Local Planning Authority's priorities for development and use of land, including [§20] a strategy for:

> *… infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat) …*

2.2.2 Chapter 14: *Meeting the challenge of climate change, flooding and coastal change*, notes:

> *The planning system should support the transition to net zero by 2050 and take full account of all climate impacts including overheating, water scarcity, storm and flood risks and coastal change. The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.* [§161]

2.2.3 To help increase the use and supply of renewable and low carbon energy and heat, §165 requires that plans should (amongst other things): *"provide a positive strategy for energy from these sources, that maximises the potential for suitable development, … while ensuring that adverse impacts are addressed appropriately (including cumulative landscape and visual impacts)"*, and *"consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development"*.

2.2.4 With regard to landscape as a consideration in the location of energy-related projects, planning policies and decisions should *"contribute to and enhance the natural and local environment by… protecting and enhancing valued landscapes..."* and *"recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland"* [§187].

2.2.5 In terms of protected landscapes "*Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and National Landscapes which have*

[4] National Planning Policy Framework, Ministry of Housing, Communities & Local Government (December 2024)

the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas and should be given great weight in National Parks and the Broad. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas" [§189].

2.3 South Norfolk Local Plan

2.3.1 The adopted South Norfolk Local Plan is made up of various documents. These include the Greater Norwich Local Plan (GNLP), which was jointly prepared by South Norfolk and Broadland District Councils, Norwich City Council and Norfolk County Council, which was adopted on the 25th March 2024. The plan covers the period up to 2038 and includes strategic policies to guide future development and plans to protect the environment, seeking to ensure that delivery of development is achieved in a way which promotes sustainability.

2.3.2 Section 2 describes the Greater Norwich spatial profile. Regarding renewable energy, §109 notes:

> *Renewable Energy 109. Recent years have seen an increase in renewable energy generation locally, chiefly from solar power (both small and large-scale), with some wind and biomass developments. Our plan should support further development of decentralised, renewable and low carbon sources of energy in appropriate locations*

2.3.3 Regarding landscape, §§122 to 124 note:

> *The varied landscape character areas identified by Natural England in and adjacent to Greater Norwich area consist of: the fens and marshes of the Broads to the east of Greater Norwich* [NCA 80]*; a more intimate landscape of small fields and hedgerows adjacent to the Broads, also in the east* NCA 79*; rolling landscapes of varied geology including woodland, heath and former parkland estates in the west and north* [NCA 84 and 78] *and an extensive open clay plateau in the south* [NCA 83].
>
> *These nationally identified landscape character areas inform local landscape character studies. Locally significant landscapes include strategic gaps between settlements, river valleys (including the Wensum, Waveney, Bure, Tiffey, Tas and Chet), undeveloped approaches to Norwich and the setting of the Broads.*
>
> *Greater Norwich does not have a nationally designated Green Belt. National policy is clear that new Green Belts should very rarely be established. Therefore this plan will need to carry forward policies for protecting our valued landscapes.*

2.3.4 Energy and the environment are at core of *The Vision for Greater Norwich in 2038*:

> *By promoting this Greater Norwich Local Plan our aim is that it will support growth of a diverse low carbon economy which will compete globally through its world class knowledge-intensive jobs in the Cambridge Norwich Tech Corridor.*
>
> *As a result, by 2038 Greater Norwich will have vibrant, healthy, inclusive and growing communities supported by the delivery of new homes, infrastructure and an enhanced*

environment. Growth will make the best of Greater Norwich's distinct built, natural and historic environments, whilst protecting and enhancing them.

To achieve this, growth will be clean and resource efficient, with significantly reduced emissions to ensure that Greater Norwich plays a full part in meeting national commitments on tackling climate change and is moving towards a post-carbon economy. The focus on three high growth sectors: clean energy, agri-food and ICT/digital, along with the high environmental standards and significant further improvements to our extensive green infrastructure network promoted through this plan, will support Norfolk and Suffolk as the United Kingdom's clean growth region.

2.3.5 It continues: *"Greater efficiency in water and energy usage will minimise the need for new infrastructure, and further reductions in carbon emissions will be delivered through the increased use of sustainable local energy sources"*, *"The distinctive characteristics of our landscapes will also be protected and enhanced. This will be achieved by shaping high-quality, well designed and beautiful new development …"* and *"Critically, our plan will have helped to achieve reductions in our greenhouse gas emissions to contribute to the national target to reduce all greenhouse gas emissions by 68% by 2030 and by 78% by 2035 compared to 1990 levels and the zero-emission target by 2050."*

2.3.6 **Policy 2: Sustainable Communities** requires that development proposals should, were relevant, address the following matters (amongst others) in order to contribute to the achievement of sustainable communities:

- *Make efficient use of land with development densities taking account of accessibility and local character consideration. …*
- *Create beautiful, well-designed places and buildings which respect the character of the local area and seek to enhance it through appropriate design, having regard to any local design guidance (including design codes).*
- *Take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption and the risk of overheating.*
- *Provide for the use of sustainable energy, local energy networks and battery storage where appropriate.*

2.3.7 **Policy 3: Environmental Protection and Enhancement.** Sub section **The Natural Environment** requires that development proposals should enhance the natural environment through, amongst things:

- *Being designed to respect, conserve and enhance natural assets, taking account of local design and other guidance such as landscape character assessment.*
- *Avoiding harm to designated and non-designated assets of the natural environment, having regard to their level of significance (local, national, and international) in accordance with the requirements of the NPPF and relevant policies in other Development Plan Documents and Neighbourhood Plans.*

- *Following a hierarchy of seeking firstly to avoid impacts, mitigate for impacts so as to make them insignificant for biodiversity, or as a last resort compensate for losses that cannot be avoided or mitigated for. Adherence to the hierarchy should be demonstrated.*
- *Undertaking a relevant assessment (such as a landscape or ecological assessment) if impacts to a natural asset might arise.*
- *Provision of new, or conservation or enhancement of existing, green infrastructure to contribute (directly or indirectly) to the strategic green infrastructure network having regard to local green infrastructure strategies (identified indicatively in Maps 8A and 8B).*
- *Respecting landscape character and retaining important views and features, having regard to landscape character assessments and sensitive areas such as landscape settings, strategic gaps and green spaces identified in Local or Neighbourhood Plans, and to the importance of the nationally designated Broads Authority area and its setting.*

2.3.8 In applying the above, regard will be given to the level of importance of the natural asset.

2.3.9 The South Norfolk Local Plan Development Management Policies Document, Adoption Version, October 2015 includes a policy on renewable energy.

2.3.10 **Policy DM 4.1: Renewable Energy** notes:

> *Proposals for renewable energy generating development requiring planning permission other than for proposals for wind energy development will be supported and considered (taking account of the impact of relevant ancillary equipment) in the context of sustainable development and climate change on the wider environmental, social and economic benefits of maximising use of renewable energy. The Council will encourage the use on-site communal-scale energy generation measures.*

2.3.11 It notes that consideration will be given to the effect of the proposal on number of factors, including the *"character and appearance of the landscape"*, and that *"Permission will be granted where there are no significant adverse effects or where any adverse effects are outweighed by the benefits."* It also notes that where appropriate, planning conditions will be imposed requiring the decommissioning and removal/dismantling of all plant and ancillary equipment and, if necessary, the restoration of land, on the cessation of use.

2.3.12 The document also contains several policies that relate directly to landscape character and the location and design of development within the landscape.

2.3.13 **Policy DM 4.5: Landscape Character Areas and River Valleys**, requires that:

> *All development should respect, conserve and where possible, enhance the landscape character of its immediate and wider environment. Development proposals that would cause significant adverse impact on the distinctive landscape characteristics of an area will be refused.*

All development proposals will be expected to demonstrate how they have taken the following elements (from the 2001 South Norfolk Landscape Assessment as updated by the 2012 review) into account:

- *The key characteristics, assets, sensitivities and vulnerabilities;*
- *The landscape strategy; and*
- *Development considerations.*

Particular regard will be had to protecting the distinctive characteristics, special qualities and geographical extents of the identified Rural River Valleys and Valley Urban Fringe landscape character types.

2.3.14 **Policy DM 4.6: Landscape Setting of Norwich** is considered in more detail at Section 7.

2.3.15 **Policy DM 4.7: Strategic gaps between settlements within the Norwich Policy Area** states:

Gaps between settlements within the Norwich Policy Area Development will be permitted in the Strategic Gaps identified on the Policies Map, between the development boundaries of the Settlements listed below, where it would not erode or otherwise undermine the openness of the Strategic Gap, and complies with other Development Plan policies.

- *Cringleford – Hethersett*
- *Hethersett - Wymondham*

2.3.16 **Policy DM 4.8: Protection of Trees and Hedgerows** states:

The Council will promote the retention and conservation of significant trees, woodlands and traditional orchards and will serve Tree Preservation Orders where necessary. 119 The Council will presume in favour of the retention of 'important' hedgerows as defined by the Hedgerows Regulations 1997.

The Council will safeguard and promote the appropriate management of protected and other significant trees and hedgerows, unless the need for, and benefits of, a development clearly outweigh their loss.

2.3.17 **Policy DM 4.9: Incorporating landscape into design** emphasises the importance of good quality design:

Where appropriate, detailed development proposals must demonstrate a high quality of landscape design, implementation and management as an integral part of the new development.

The provision for new planted features (such as tree belts, hedgerows, wild flowers and specimen trees) is expected to form part of development proposals from their outset and should provide an appropriate landscape setting for the scheme.

'Hard' landscape features (such as paving, kerb stones, street furniture, boundary treatments etc) will reflect and where possible enhance locally distinctive character and

styles where relevant; or innovative contemporary solutions reflecting local context and reinforcing or creating local distinctiveness and the setting of the development.

Landscape schemes will be required to respect the character and distinctiveness of the local landscape and should ensure that any land remodelling respects the local topographic character in terms of height, slope, angle and character. Landscape schemes should be clearly and properly specified.

2.4 Overarching National Policy Statement for Energy (EN-1)

2.4.1 Overarching National Policy Statement for Energy, dated 2024, sets out the government's policy for the delivery of major energy infrastructure.

2.4.2 In England, the National Policy Statements (NPS) may be a material consideration in decision making. Whether the policies in a NPS are material and to what extent will be judged on a case-by-case basis and will depend upon the extent to which the matters are already covered by applicable planning policy. For the purposes of Nationally Significant Infrastructure Projects (NSIPs), the NPSs represent the primary policy for decision making.

2.4.3 The government sees a need for significant amounts of new large-scale energy infrastructure to meet its energy objectives. However, *"it will not be possible to develop the necessary amounts of such infrastructure without some significant residual adverse impacts. These effects will be minimised by the application of policy set out in Parts 4 and 5 of this NPS."*

Electricity storage

2.4.4 Electricity storage is considered to have *"a key role to play in achieving net zero and providing flexibility to the energy system"*]§3.3.25]. There is currently around 4GW of electricity storage operational in Great Britain, around 3GW of which is pumped hydro storage and around 1GW battery storage.

2.4.5 Electricity Storage facilities are not generally considered to be NSIPs except for pumped hydro storage facilities above 50MW.

New electricity infrastructure

2.4.6 The NPS states that substantial reinforcement of the transmission network is required in East Anglia to handle increased power flows from offshore wind generation [§3.3.68], which may also require additional offshore connections coming to land in England.

The historical approach to connecting offshore wind resulted in individual radial connections developed project-by-project… For regions with multiple windfarms or offshore transmission projects it is expected that a more coordinated approach will be delivered. For these areas, this approach is likely to reduce the network infrastructure costs as well as the cumulative environmental impacts and impacts on coastal communities by installing a smaller number of larger connections, each taking power from multiple windfarms instead of individual point-to-point connections for each windfarm. [§3.3.71]

2.4.7 The final Phase 1 report for National Grid ESO's Offshore Coordination Project (published December 2020) found that the number of new electricity infrastructure assets, including cables

and onshore landing points could be reduced by up to 50 per cent, significantly reducing environmental impacts and impacts on coastal communities.

Heat networks

2.4.8 Heat networks are systems of insulated pipes that take heat from a central source and supply it, as hot water, to residential, commercial and public sector buildings to provide hot water and heating. There are over 14,000 heat networks in the UK with nearly 492,000 connections in total including 446,500 domestic customers.

Assessment principles

2.4.9 In considering any proposed development the Secretary of State should take into account:

- its potential benefits, and
- its potential adverse impacts, including on the environment, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for adverse impacts. [§4.1.5]

2.4.10 It is stated that:

> *The overarching need case for each type of energy infrastructure, and the substantial weight which should be given to this need … is the starting point for all assessments of energy infrastructure applications.* [§4.2.6]
>
> *Applicants must apply the mitigation hierarchy, and demonstrate that it has been applied. … Applicants should demonstrate that all residual impacts are those that cannot be avoided, reduced or mitigated.* [§4.2.11]
>
> *Applicants should set out how residual impacts will be compensated for as far as possible. ... The cumulative impacts of multiple developments with residual impacts should also be considered.* [§4.2.12]

2.4.11 All proposals for projects that are subject to the Environmental Impact Assessment Regulations must be accompanied by an Environmental Statement describing the aspects of the environment likely to be significantly affected by the project.

Criteria for good design for energy infrastructure

2.4.12 The NPS notes that:

> *Whilst the applicant may not have any or very limited choice in the physical appearance of some energy infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting relative to existing landscape character, land form and vegetation. Furthermore, the design and sensitive use of materials in any associated development such as electricity substations will assist in ensuring that such development contributes to the quality of the area.*
>
> *The Secretary of State should be satisfied that the applicant has considered both functionality (including fitness for purpose and sustainability) and aesthetics (including its*

contribution to the quality of the area in which it would be located, any potential amenity benefits, and visual impacts on the landscape or seascape) as far as possible.

Climate change adaption and resilience

2.4.13 Regarding climate change:

Applicants should demonstrate that proposals have a high level of climate resilience built-in from the outset. [§4.10.11]

Ancient Woodland and veteran trees

2.4.14 Regarding Ancient Woodland and veteran trees:

Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases. [§5.4.32]

Landscape and visual

2.4.15 Landscape and visual impacts are considered in Section 5.10 of the NPS.

The landscape and visual effects of energy projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development. [§5.10.1]

Landscape effects arise not only from the sensitivity of the landscape but also the nature and magnitude of change proposed by the development, whose specific siting and design make the assessment a case-by-case judgement. [§5.10.4]

Virtually all nationally significant energy infrastructure projects will have adverse effects on the landscape, but there may also be beneficial landscape character impacts arising from mitigation. [§5.10.5]

Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate. [§5.10.6]

The applicant should consider landscape and visual matters in the early stages of siting and design, where site choices and design principles are being established. [§5.10.19]

2.4.16 The assessment should include the effects on landscape components and character as well as the impact on views and visual amenity. The assessment should also address the landscape and visual impacts of noise and light pollution.

Applicants should consider how landscapes can be enhanced using landscape management plans, as this will help to enhance environmental assets where they contribute to landscape and townscape quality. [§5.10.24]

Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within its development site and wider setting. The careful consideration of colours and materials will support the delivery of a well-designed scheme, as will sympathetic landscaping and management of its immediate surroundings. [§5.10.27]

Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site. For example, filling in gaps in existing tree and hedge lines may mitigate the impact when viewed from a more distant vista. [§5.10.28]

The scale of energy projects means that they will often be visible across a very wide area. The Secretary of State should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project. [§5.10.35]

Other NPSs

2.4.17 Five further technology-specific NPSs have also been published:

- EN-2: natural gas electricity generation
- EN-3: renewable electricity generation (both onshore and offshore)
- EN-4: gas supply infrastructure and gas and oil pipelines
- EN-5: the electricity transmission and distribution network
- EN-6 nuclear electricity generation

3 Methodology for the Landscape Susceptibility Study

3.1 Approach

3.1.1 The methodology for undertaking the Landscape Susceptibility Study (LSS) is based on the process set out in *An approach to landscape sensitivity assessment – to inform spatial planning and land management* (ALSA), Natural England, June 2019.[5] Reference was also made to *Guidelines for Landscape and Visual Impact Assessment,* Landscape Institute and Institute of Environmental Management and Assessment, 3rd Edition, April 2013 (GLVIA) and *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity*, Countryside Agency and Scottish Natural Heritage, 2002.

3.1.2 The development of the methodology was informed by similar studies carried out by The Landscape Partnership in the past. It also took account of principles expounded in the Holford Rules (regarding the routing of overhead transmission lines) and the Horlock Rules (regarding the siting of substations, etc.).

3.1.3 The European Landscape Convention promotes achieving *"sustainable development based on a balanced and harmonious relationship between social needs, economic activity and the environment"*. [6]

3.1.4 ASLA and GLVIA adopt a similar basic approach to the assessment of sensitivity, i.e. that sensitivity is a product of:

1/ the susceptibility of a landscape or visual baseline to a specific change; and

2/ the value of the landscape and its visual characteristics.

3.1.5 However, there are some important distinctions to be made in terms of how sensitivity is considered by ALSA, compared to the approach within GLVIA:

- In GLVIA terms, sensitivity, and in particular susceptibility to change, is considered with regard to a known development, whereas ALSA allows a more strategic assessment of landscape sensitivity, and it's the principle of a particular type of development change scenario that is considered.
- Within the context of spatial planning, landscape sensitivity refers to landscape character and the associated visual resource. GLVIA on the other hand considers the landscape and visual effects separately.

3.1.6 For the purposes of landscape sensitivity assessments, landscape sensitivity can be considered as a measure of *"the resilience, or robustness, of a landscape to withstand specified change arising*

[5] An approach to landscape sensitivity assessment – to inform spatial planning and land management. Tudor, C, Natural England, 2019
[6] Council of Europe (2000), European Landscape Convention, Council of Europe, Florence, October 2000

from development types or land management practices, without undue negative effects on the landscape and visual baseline and their value."[7]

3.1.7 Similarly, Topic Paper 6 noted that landscape sensitivity relates to *"the stability of character, the degree to which that character is robust enough to continue and to be able to recuperate from loss or damage. A landscape with a character of high sensitivity is one that, once lost, would be difficult to restore; a character that, if valued, must be afforded particular care and consideration in order for it to survive*."[8]

3.1.8 Historically, there has been some confusion concerning the use of the words sensitivity and capacity, and on occasions the two terms have been used interchangeably. The ASLA notes that:

> *Sensitivity and capacity have different meanings. When dealing with an area's sensitivity the question is, 'to what'? When dealing with an area's landscape capacity perhaps to absorb a certain amount of development without unacceptable changes to landscape character – the question generally relates to, 'how much'? Importantly, a sensitivity study will identify areas of relative sensitivity to particular development scenarios, and inform place based objectives and guidance and possibly decisions concerning environmental capacity - perhaps by way of what some might call a Landscape Capacity Assessment. The latter might help decision makers to set more detailed objectives about the amount of acceptable change within a specified area, and therefore inform a more detailed strategy regarding desired amounts of development / change.*

3.1.9 ALSA states that landscape sensitivity assessment should *"enable associated decision making to be sequential, transparent and auditable."*

[7] An approach to landscape sensitivity assessment – to inform spatial planning and land management. Tudor, C, Natural England, 2019
[8] Topic Paper 6 – Techniques for judging capacity and sensitivity

3.2 Landscape sensitivity

3.2.1 The sensitivity of a landscape or visual receptor is determined by combining the value afforded to the receptor with its susceptibility to change.

3.2.2 ***Landscape value*** is based on considerations such as landscape quality/condition; landscape fabric and rarity; scenic quality; wildlife, heritage and cultural interest; recreation value; and perceptual aspects. The presence of a landscape designation can help to identify value and reasons for a designation are usually established in a supporting study. Landscapes or features without any formal designation may also express characteristics that are valued locally. Where there is no supporting evidence base, details regarding sensitivity should typically be derived from landscape character assessments.

3.2.3 ***Susceptibility to change*** assesses the relative ability of a landscape to accommodate the changes that would result from a particular type of development. This is an integral element of the landscape assessment but one that can only be judged in the context of the generic type of development being proposed. However, it is not necessary to understand the specifics of the development to make this judgement and thus susceptibility to change can be considered as part of the baseline assessment.

3.2.4 This LSS assesses the susceptibility of the different landscapes within the South Norfolk district to change from a range of energy-related development scenarios defined at Section 4.

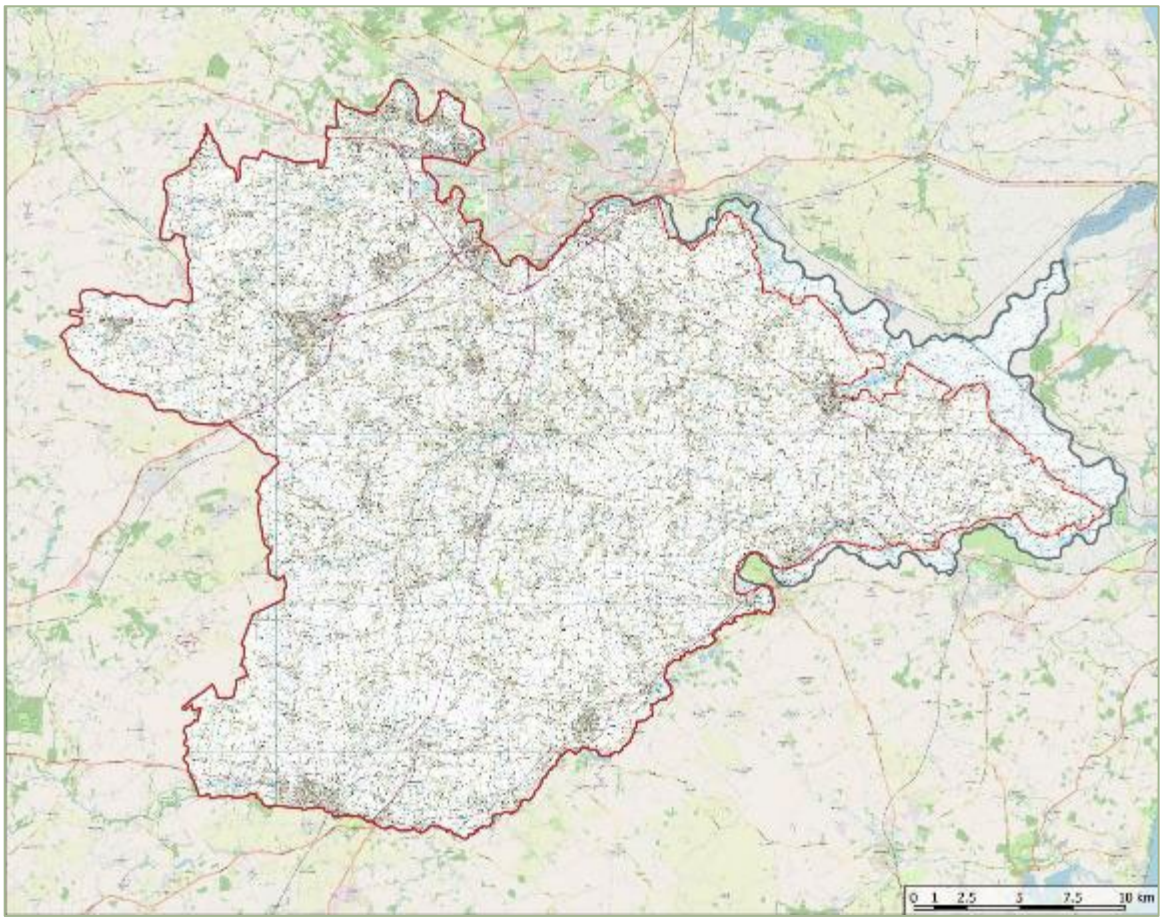
3.2.5 It considers the susceptibility of the landscape types (LTs) and landscape character areas (LCAs) defined in the South Norfolk Landscape Character Assessment to each of the generic development scenarios, assuming it is constructed somewhere within the LT or LCA. It does not consider the precise location of each scenario within the LT or LCA; however, where relevant, commentary is provided if particular parts of an LT or LCA might be more sensitive to a development scenario than others.

3.2.6 The LSS does not consider the landscape value of the various LTs and LCAs within the district. This would be a separate, further exercise. Combining such information with the corresponding susceptibility to change, using professional judgement, would give an overall landscape sensitivity.

3.2.7 As a broad generalisation, some initial indication of the value of a landscape can be ascertained by the presence (or not) of any landscape-related designations encompassing all or part of a particular LCA. Such landscape-related designations are illustrated at Appendix 1 | Figures 03-05 and, where relevant, the presence of such designations has been referred to in the analysis.

3.3 The study area

3.3.1 The study area comprises the whole of the district of South Norfolk except for the areas which fall within the Broads Authority Executive Area. It does not include the neighbouring authorities of Breckland, Broadland, the Borough of Great Yarmouth, Norwich City, East Suffolk or Mid Suffolk. Where cross-boundary issues of landscape setting exist, consultation prior to making a planning application is recommended with those authorities potentially affected.



Study area shown in red. For full size map, see Appendix 1, Figure 01

3.3.2 Whilst outside the study area, the Broads is an internationally important wetland and designated protected landscape of the highest order with the status of a national park. There is a legal duty to protect and enhance its natural beauty, wildlife, and cultural heritage, and such considerations could be relevant where an energy project situated in the South Norfolk administrative area could have an incongruous effect on the setting to the Broads landscape.[9]

[9] Part of the Broads lies within South Norfolk district area. The Levelling Up and Regeneration Act, which received Royal Assent on 26 October 2023, amended Section 17A of the Norfolk and Suffolk Broads Act 1988. Section 17A creates a general duty of public bodies and this was amended to replace 'shall have regard to' with 'must seek to further' the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the Broads, promoting opportunities for the understanding and enjoyment of the special qualities of the Broads by the public; and protecting the interests of navigation.

Landscape character of the study area

3.3.3 The importance of understanding the landscape character of all landscapes in England is recognised in the National Planning Policy Framework (NPPF) §187, which states that planning policies and decisions should contribute to the natural environment by: *"recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland"*.

3.3.4 The LSS considers the susceptibility of the different landscapes within South Norfolk district to various energy-related development scenarios.

3.3.5 Since different landscapes are defined by different physical and perceived qualities and attributes, it is likely that they will have differing resilience to a particular form of development. For example, a rural landscape could more readily accommodate a traditional barn, without changing the character of the area, whereas other types of development such as a distribution warehouse could potentially result in important changes to the character of the landscape.

3.3.6 To understand the different effects that the various development scenarios would have on the different landscapes within the district it was first necessary to define geographical areas of common landscape character and qualities.

3.3.7 Landscape character assessment is the process that can identify these intrinsic values and unique characteristics of the diverse landscapes within a given area, in this case South Norfolk district. It enables landscapes to be described and understood by mapping natural, physical and cultural features in order to define different landscapes and demonstrate what makes them special. These landscape character types share similar characteristics, such as underlying geology, soil type, topography and landform, the pattern and type of land/field enclosure, historic land use, the pattern of settlements and types of building that these comprise, tree and woodland cover and the general visual experience of the area.

3.3.8 It is important to note that landscape character assessments can be undertaken at a range of scales. It should also be noted that boundaries are only indicative of the change between areas and therefore when working at a site scale, especially close to boundaries between character types or character areas, users should carefully identify which landscape the land parcel belongs to, based on its characteristics. In addition, it is important to note that while drawn with a line on a map, areas close to boundaries often may be better thought of as an area of transition and may display some of the characteristics and sensitivities of both character areas.

3.3.9 Effects on landscape character can be direct (i.e. on the character area/landscape type that the site is located within) or indirect (i.e. changes to characteristics or perceptions of character that occur beyond the boundary of a character area/landscape type). In addition, effects on landscape character may be positive, neutral or negative, i.e. strengthening and enhancing the characteristic patterns and features, or eroding and losing the patterns and features that contribute to landscape character.

3.3.10 The landscape of South Norfolk has been characterised in the published South Norfolk Landscape Character Assessment, Volume 4: Landscape Character of the Rural Policy Area, dated April 2006 (final amendments January 2008). The specific purpose of the report was to *"provide a clear understanding of the character of the landscape within the Rural Policy Area. In particular, the assessment process aims to describe the distinctive features or characteristics that are important to the landscape and to provide guidance on those aspects of the landscape that are most sensitive to change"* (§1.6).

3.3.11 The South Norfolk District Landscape Character Assessment[10] describes a total of seven landscape types (LTs) within the district:

A: Rural River Valleys

B: Tributary Farmland

C: Tributary Farmland with Parkland

D: Settled Plateau Farmland

E: Plateau Farmland

F: Valley Urban Fringe

G: Fringe Farmland

3.3.12 The seven LTs have been broken down into 20 geographically discrete landscape character areas (LCAs):

A1: Tas Rural River Valley

A2: Yare/Tiffey Rural River Valley

A3: Tud Rural River Valley

A4: Wensum Rural River Valley

A5: Waveney Rural River Valley

B1: Tas Tributary Farmland

B2: Tiffey Tributary Farmland

B3: Rockland Tributary Farmland

B4: Waveney Tributary Farmland

B5: Chet Tributary Farmland

B6: Yare Tributary Farmland

C1: Yare Tributary with Parkland

C2: Thurlton Tributary Farmland with Parkland

[10] South Norfolk District Landscape Character Assessment, 2001, Prepared on behalf of South Norfolk District Council by Land Use Consultants

D1: Wymondham Settled Plateau Farmland

D2: Poringland Settled Plateau Farmland

E1: Ashwellthorpe Plateau Farmland

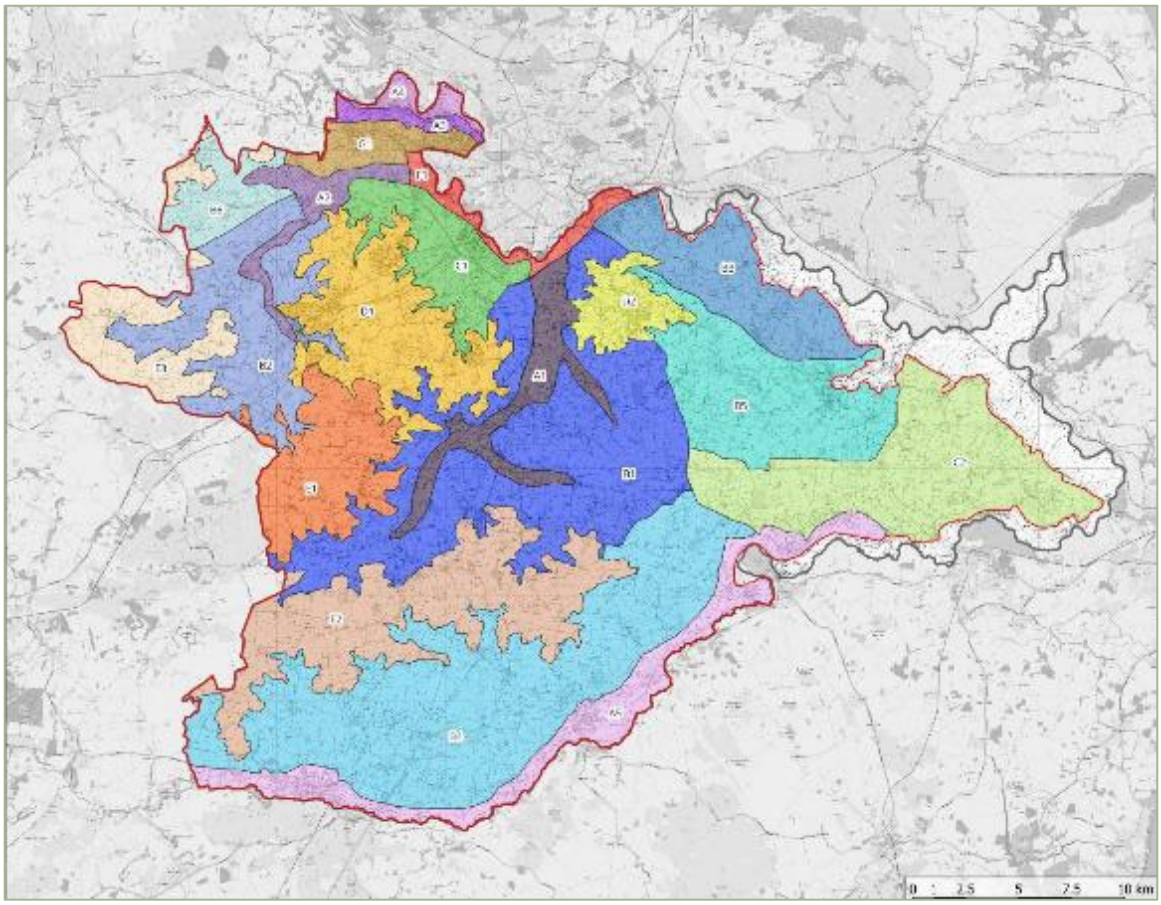
E2: Great Moulton Plateau Farmland

E3: Hingham Mattishall Plateau Farmland

F1: Yare Valley Urban Fringe

G1: Easton Fringe Farmland

3.3.13 It is these LCAs that are used to provide the areas of common landscape character whose susceptibility to change is assessed within the LSS, i.e. the baseline units for analysis. The LCAs are mapped below and at Appendix 1 | Figure 08.



Landscape Character Areas for South Norfolk Council. For full size map, see Appendix 1, Figure 08

3.4 Desktop Appraisal / sources of information

3.4.1 A desk-based study was undertaken that involved gathering and reviewing current and background information, including previous studies, environmental designations and other relevant baseline information. This included reference to:

- Natural England's National Character Area Profiles
- South Norfolk Landscape Character Assessment, 2008
- South Norfolk Local Plan
- South Norfolk Landscape Designations Review – Norwich Southern Bypass Landscape Protection Zone, 2012
- South Norfolk Landscape Designations Review – Landscape Character Areas & River Valleys in the Norwich Policy Area, 2012
- South Norfolk Landscape Designations Review – Local Designations Review, 2012
- South Norfolk District Landscape Sensitivity Study in relation to wind turbines, 2008

3.4.2 GIS data used for the LSS included OS map data, landscape-related designations, hydrology data, ecology designations (SSSI, NNR) and habitat data, heritage designations (both statutory and local, including Conservation Areas and Registered Parks and Gardens).

3.4.3 Reference was also made to Norfolk County Council's interactive map (Public Rights of Way, highways, etc.) and to the Government's Magic Map (landscape-related designations, etc.).

3.4.4 The baseline appraisal is presented as a collection of figures that can be found at Appendix 1 to the LSS.

3.4.5 The assessment findings should be read in conjunction with the figures within Appendix 1.

3.5 Susceptibility analysis

3.5.1 The susceptibility of each of the LCAs in relation to each of the development scenarios was assessed using a combination of desktop analysis and field work. The South Norfolk District Landscape Character Assessment was used to establish the key characteristics of each LT and LCA.

3.5.2 The field survey work was carried out by a team of Landscape Architects, all of whom were familiar with the qualities of the South Norfolk landscape, using a standard proforma to record data in a consistent manner.

3.5.3 Where appropriate, field notes were made to form the basis of guidance as to how the form of development might be adapted to make it more acceptable within the landscape and of any broad mitigation measures that might be appropriate to offset landscape effects or opportunities for landscape enhancements that might be delivered with development of the type proposed.

Approach to assessing the susceptibility of the landscape to change

3.5.4 The susceptibility of each LCA to the different energy-related development scenarios (as set out at Section 4) was assessed using a standard set of criteria. The criteria which were chosen reflected both the national guidance provided by Natural England and the particular circumstances of the project.

3.5.5 Each criterion was accompanied by a set of indicators to help guide the assessor in making judgements as to what factors should be considered to indicate a higher susceptibility to change, and what factors should be considered to indicate a lower susceptibility to change.

3.5.6 The selection of criteria was based on the attributes of the landscape that could be affected by energy developments. Energy developments can potentially affect the distinct and recognisable pattern of elements which create landscape character, as well as the perceptual and aesthetic qualities of the landscape.

3.5.7 The following criteria were used to assess susceptibility to change:

- Scale
- Enclosure
- Landform
- Field patterns
- Landcover
- Settlement pattern and human influence
- Perceptual aspects
- Visual characteristics
- Skylines
- Intactness

3.5.8 Relevant criteria were selected for each development scenario. The indicators of higher and lower susceptibility for each criteria are presented in Appendix 2.

3.5.9 The assessment of susceptibility has two aspects:

- The nature of the existing environment (the key characteristics of the assessment unit)
- The degree of change which is likely to occur

3.5.10 There are then variations between landscape character areas, and also variations between the different development scenarios.

3.6 Assessment of overall susceptibility to change

3.6.1 The susceptibility of the LCAs to each of the different development scenarios was assessed using a number of criteria. In each case susceptibility was assessed on a five-point scale of High, Medium-High, Medium, Medium-Low or Low. Commentary was also provided to explain the judgements. The findings of the assessments are recorded at Appendix 3. This allows the judgements made for each criterion to be viewed in a transparent, comparable and consistent manner.

3.6.2 Professional judgment was used to make an overall assessment of each LCA's susceptibility to change for each of the development scenarios, again using a five-point scale:

- Low susceptibility – Key characteristics and qualities are not vulnerable to change from this type of development. The landscape could accommodate new development with little change to its character. Care is still needed when siting and designing these developments to ensure best fit with the receiving landscape.
- Medium-Low susceptibility – Few of the key characteristics and qualities of the landscape are vulnerable to change. The landscape is likely to be able to accommodate new development with limited change in character. Care is still needed when siting and designing schemes to avoid adversely affecting local landscape character.
- Medium susceptibility – Some of the key characteristics and qualities of the landscape are vulnerable to change. Although the landscape may have some potential to accommodate development it is likely to cause a degree of change in character. Care would be needed in siting and design.
- Medium-High susceptibility – Key characteristics and qualities of the landscape are vulnerable to change. New developments of this type are likely to affect the character of the landscape. The LCA has limited potential for development of this type, and great care would be needed with siting and design.
- High susceptibility – Key characteristics and qualities of the landscape are highly vulnerable to change. New developments of this type are likely to result in a fundamental change in character i.e. they would alter the key characteristics of the landscape. The LCA has low potential for development of this type.

3.6.3 Unless effective mitigations are being provided that reduce the harm, South Norfolk Council will use this SPD as evidence against proposals that it considers to be detrimental to landscape areas with a high susceptibility to change. This, in the Council's judgement, is necessary because harmful development without adequate mitigation is unacceptable, as the landscape is intrinsic to the area's beauty and should be safeguarded for generations to come.

3.7 Limitations

3.7.1 In considering the findings of the LSS, the following limitations should be noted:

- It is important to remember that that landscape effects must be considered as a spectrum. There is no defined threshold that a development must reach in order to be considered acceptable against any of the criterion.
- When assessing the susceptibility of a landscape to change, consideration must be given to the effects of the development as perceived in neighbouring LCAs (and potentially further afield), not just the LCA in which the development is proposed.
- The landscape parcels, the LTs and LCAs, considered in the susceptibility appraisal are necessarily broad and in places extensive. As such, it is quite likely that there are variations in susceptibility within a landscape parcel itself, with some areas of the parcel being more capable of accommodating a particular development scenario than others.
- The LSS considers only the attributes and characteristics of the landscape and their susceptibility to change. There may be other very good reasons why a particular site is unsuitable or inappropriate for development of the type proposed, for example it might have poor access or be subject to flood risk. It is quite possible that an area may have relatively low sensitivity to a particular form of development in landscape terms but would be unsuitable in other respects e.g. due to the presence of important ecological habitats or heritage assets. Identification of such matters are beyond the scope of this study.
- It is important to recognise that within the LSS no weighting has been applied to any of the individual criterion. The results as presented in the tables in Appendix 3 show the range of factors that have been considered for each landscape parcel and development scenario, and where they sit in the descriptive scale for each criterion. It is not the intention to add up the entries for each criterion to give an overall numerical score. The relative importance of each criterion may vary between each landscape parcel for a range of reasons. The judgement of overall susceptibility should take into account the susceptibility in relation to the individual criteria as well as the relative importance of the criteria, which involves professional judgement.

3.7.2 The LSS provides an initial assessment of a landscape's ability to accommodate a particular type of development. Should any specific developments come forward, they would need to be tested through use of Landscape and Visual Impact Assessment to inform the emerging design and any mitigation measures necessary, and to determine any likely residual landscape and visual effects associated with that particular development proposal to assist those charged with determining the planning application.

4 Energy-related development scenarios

4.1 Energy-related development scenarios considered in the LSS

4.1.1 The types of energy-related development scenarios considered in this study are listed below. These are considered to be representative of projects that could realistically come forward within South Norfolk district within the foreseeable future. They comprise: solar photovoltaics, Anaerobic Digestion plants, battery storage and electricity transmission and distribution infrastructure.

4.1.2 For each project type, different scales of development have been considered as set out below:

Solar PV

- small-scale solar PV projects, up to 5 MW
- medium-scale solar PV projects, 5 to 15 MW
- larger-scale solar PV projects, 15 to 50 MW
- very-large solar PV projects, over 50MW

AD plants

- farm-scale, single or double tank system, up to 1ha
- larger installation, up to 5ha

Battery storage

- small-scale, up to 1ha in size
- large-scale, over 1ha is size

Overhead powerlines

- 132kV lines, utilising pylons within a nominal height of 26m
- 400kV, utilising pylons with a nominal height of 50m

Underground cable routes

- Comprising cable route and associated works

Substations

- Substations are typically required to connect generating facilities to the distribution network and so often found in association with other energy project types.

4.1.3 It is envisaged that this study will complement the South Norfolk District Wind Turbine Landscape Sensitivity Study (Land Use Consultants, 2006 – final amendments 2008). Consequently, wind turbines have not been considered in this study.

4.2 Other energy-related development types

4.2.1 Energy-related developments can also include combustion power stations (including biomass plants, advanced conversion technologies, landfill gas projects, and natural gas-fired plants) and nuclear power stations.

4.2.2 Biomass plants are already present in the local area at Thetford, Snetterton and Eye. Thetford Biomass Power Station is run primarily on poultry litter and woodchip while Snetterton and Eye are primarily straw fired. The potential for this technology is limited by the available feedstock so it is unlikely that new plants will be required in the foreseeable future.

4.2.3 Landfill gas projects have been implemented across many landfill sites in Norfolk. The potential for this technology is clearly limited geographically to existing landfill sites, so it is not considered further in this study.

4.2.4 Advanced conversion technologies (ACT) are designed to recover energy from waste. ACT is considered the next generation of thermal heat treatment and can be applied to a variety of feedstocks. Most ACT plants produce a gaseous product known as syngas. The adoption of this technology has been slow and the amount of electricity that can be generated is limited by the available feedstock.

4.2.5 Natural gas-fired power stations are large installations. Natural gas remains part of the present energy mix but will eventually be phased out. The nature of this technology means that it is limited to a few large sites, and it is therefore unlikely that this form of energy-related development would come forward within South Norfolk.

4.2.6 Nuclear power stations are situated on the coast and would not therefore be located within South Norfolk.

4.3 Overview of energy-related development scenarios

4.3.1 For each of the development scenarios considered in the LSS, the following matters are considered:

- Overview of the development type
- Development scales considered in the LSS
- Parameters assumed in the LSS
- Potential landscape effects
- Cumulative effects
- Design development guidelines

4.3.2 The design development guidelines relate to landscape susceptibility only and do not address sensitivities relating to other areas of potential environmental impact, or other non-landscape considerations which might affect the feasibility of development.

4.3.3 The guidelines are generic and apply to all the LTs and LCAs.

Generic development guidelines

4.3.4 The following siting or design development guidelines are applicable to all development scenarios:

- The effects of the proposed development on landscape and visual receptors should be tested throughout the siting and design process by landscape and visual impact assessment to ensure adverse effects are minimised.
- Trees, hedges and other woody vegetation at the site should be retained wherever possible and protected during the construction works in accordance with BS5837:2012, to ensure their long-term health and viability, and contribution to the landscape.
- Disturbance of soils should be minimised. Where necessary, the existing soils at a site should be stripped prior to works commencing, separated into topsoil and subsoil, and stored in a manner that would safeguard their long-term health. On completion of the building works the soils should be used as part of the landscape scheme.
- Development (buildings and surfaces) should be located in a manner that retains the general character of the surrounding landform, where it can be accommodated without abrupt changes in levels or steep gradients or the need for prominent retaining structures or bunds. Where possible, levels should follow the wider contours and general gradient.
- Consider the landscape effects of drainage features such as SuDs, which can have a highly engineered form and introduce ancillary infrastructure. Ensure they have sufficient space to enable shallow sides and opportunities for habitat creation, so as to create meaningful and positive additions to the landscape.
- Ensure that any earthworks, including artificial mounds that might be used to screen the development, and sensitively designed in terms of height, profile and gradient, to fit in with the surrounding landscape. Generally, such features do not provide effective growing conditions for planting.
- Boundary features such as hedges should be retained in a meaningful and continuous manner.
- Development at a site should be accompanied by a comprehensive landscape scheme with an appropriate landscape management plan to guide its implementation and ongoing maintenance and ensure its long term contribution to the landscape. The scheme should be implemented in a timely manner in the first available planting season.
- New planting should be designed using appropriate and predominantly native planting so as to reflect the character of the wider landscape, with plant species selected to minimise long term maintenance and maintenance, with a view to being resilient to future climate change.

4.4 Cumulative effects

4.4.1 Cumulative effects are effects "that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project." [11] Cumulative landscape and visual effects would result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other development(s) (associated with, or separate to, it).[12]

4.4.2 The guidelines for minimising cumulative impact are as follows:

- When assessing the potential effects of a proposed scheme, reference should be made to the relationship between the proposal and any existing, consented or proposed energy-related developments within the district, and especially within the same character area or neighbouring landscape character areas.
- The character of existing developments in relation to the landscape should be considered. If there is a distinct pattern of development in a particular type of landscape, then continuation of this pattern would have less of an impact on character than the introduction of a different size or form of development in an undisturbed location.
- The closer developments are to each other the more likely they are to be viewed in combination (or in sequence).
- Even if developments are not visible from the same viewpoint the cumulative effects on character still need to be considered as they can have an effect on the experience of moving through a landscape (sequential effects).
- In many scenarios, locating new development in proximity to existing development could be considered to minimise its impact and preserve the more undisturbed and tranquil parts of the district. The combined effects of different developments could, however, change the fundamental character of an area if the common characteristics of the developments were to become the defining characteristics of the area.
- Cumulative effects relate primarily to the amount of development within a given landscape, as well as to intervisibility, intra-visibility and sequential effects. [13] Good design could reduce cumulative effects by avoiding intervisibility for example.
- Whilst it might be argued that only developments which are intervisible can have cumulative effects, this is not necessarily the case. Developments which are scattered across the landscape might be considered to affect a broader area, and to affect the perception of the area as a whole and/or the sequential experience of travelling through it.

[11] Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, European Commission, 1999
[12] Guidelines for Landscape and Visual Impact Assessment, Second Edition, Landscape Institute and IEMA, 2002
[13] Intervisibility is the visibility between two points. Two points on the ground or two features are described as 'intervisible' when they are visible from each other. Intra-visibility is when two points can be seen/experienced from a third point (in many cases, this is more important that pure intervisibility); e.g. a listed building might be experienced in the same view as a new industrial building by a sensitive visual receptor.

4.5 Solar PV

Overview of the development type

4.5.1 Solar PV developments comprise arrays of solar photovoltaic panels that are mounted on frames. The back panel height is typically up to 3m. The panels are usually positioned at a fixed angle of 20-40 degrees from the horizontal facing south and sited in parallel rows with gaps between the rows for access and to prevent shading of adjacent rows. Frames can be fixed in position through piles driven into the ground or placed on concrete shoes, avoiding the need for mass concrete foundations. The solar arrays are typically accompanied by inverters, transformers, and small buildings such as substations. The proposals typically include perimeter fencing, pole-mounted CCTV cameras, and access tracks. Some security lighting may be proposed in conjunction with the buildings.

4.5.2 Solar installations tend to be measured by their capacity in megawatts. 1 MW of installed capacity occupies, on average, 2ha of land.

4.5.3 Schemes of over 50 MW are defined as NSIPs and are determined by the Secretary of State rather than the local planning authority.

4.5.4 Solar PV developments typically have an operational life of 25 to 40 years and planning permissions are usually limited in terms of their duration. The solar farm owner and landowner are responsible for the decommissioning of solar PV developments. Planning conditions can be used to ensure that installations are removed when no longer in use, and to ensure that the land is restored to its previous (or another agreed) use.

4.5.5 Whilst solar PV can in theory be installed almost anywhere, there are technical considerations such as the capacity of the local substations.

Scenarios considered in the LSS

4.5.6 Four scales of solar PV project are considered in this study:

- small-scale solar PV projects, up to 5 MW
- medium-field solar PV projects, 5 to 15 MW
- larger-scale solar PV projects, 15 to 50 MW
- very large solar PV projects, over 50 MW

Parameters assumed in the LSS

4.5.7 For the purposes of the LSS, the following parameters are assumed for solar PV developments:

- Small-scale solar PV projects, up to 5 MW – typically 5 to 10ha and contained within a single field unit.
- Medium-scale solar PV projects, 5 to 15 MW – typically 10 to 30ha and extending over a small number of fields.

- Larger-scale solar PV projects, 15 to 50 MW – typically 30 to 100ha and encompassing several fields.
- Very large scale solar PV projects, over 50 MW – encompassing substantial tracts of countryside.
- Ground mounted panels up to a maximum of 4m high.
- Appropriate fencing.
- No external lighting, save that for emergency attendance.
- Grazed or habitat enhancement land cover.
- Timely implementation of a well-considered and maintained landscape scheme to integrate the development into the surrounding landscape framework.
- A lifespan of up to 40 years, followed by full decommissioning and removal of all structures and a return to agricultural land use.

Potential landscape effects

4.5.8 Solar PV developments, although not prominent in terms of height, can occupy substantial areas of ground and may be quite visible, particularly if located on slopes. Landscape effects may include the following:

- Solar arrays may be particularly visible in open landscapes, or on slopes.
- On a sunny day they can appear blue while on a cloudy day they can appear a dark grey, both of which contrast with surrounding green areas.
- The presence of PV panels and associated infrastructure may increase the perceived human influence on the landscape and change land cover patterns of rural landscapes.
- Solar PV developments will change the land use and appearance of a field or fields, affecting land cover patterns.
- The regular edges of solar PV developments may be conspicuous in more irregular landscapes (particularly where they do not follow contours or where field boundaries are irregular in form).
- The height of the panels means that they may over-sail typical hedgerow field boundaries.
- Screen planting around solar PV development can change the sense of enclosure of a landscape (NB: some changes in management, such as allowing hedges to grow out, may enhance diversity and local landscape character resulting in positive change, but may in turn block valued longer distance views across the wider landscape).
- Mitigation for a PV development can include large scale planting schemes which can enhance the biodiversity of a field and diversify the local habitats.

- Structures may appear out of place in particularly rural landscapes which are valued for their sense of remoteness.
- Ancillary buildings and security requirements (such as fencing and/or CCTV) may introduce new and unfamiliar features into the landscape, increasing the perceived human influence on the landscape, and eroding the intrinsically rural character. Often, these elements can have more influence than the panels themselves.
- Solar PV schemes can take valuable arable land out of production for many years.
- Solar schemes might intercept or disrupt the routes of existing public rights of way, or influence the experience of those using them.
- In more open landscapes foreground mitigation planting may have the unintended effect of blocking or altering the composition of longer distance views.
- Where multiple field units are involved, consideration should be given to the sequential influence of solar PV as it is experienced by those moving through the landscape, e.g. on public rights of way.

Cumulative effects

4.5.9 There are a number of existing Solar PV developments within South Norfolk. A map of consented and proposed renewable energy schemes within South Norfolk is provided on the Council's website: Renewables mapping | Broadland and South Norfolk

4.5.10 Considering the presence of several solar PV arrays in South Norfolk district, and the continued pressure for this type of development, it is important that consideration is given to their cumulative effects when they can be appreciated in close proximity to other similar developments and/or other energy-related infrastructure that they often need to connect to, such as substations.

Design development guidelines

4.5.11 The following guidelines are relevant to the siting and design of solar PV developments in South Norfolk:

- Locate development on lower slopes/within folds in gently undulating lowland landscapes or on flat plateau sites, rather than on slopes, especially higher slopes, crests and plateau edges.
- Site solar development in landscapes with a sense of enclosure (e.g. provided by woodland or high hedges) rather than in open and unenclosed landscapes (unless on an elevated plateau lacking intervisibility with surrounding landscapes).

- Avoid areas of greater time-depth – e.g. historic landscape types such as commons, co-axial enclosures or parklands, and landscapes that form part of the setting of a conservation area, listed building, scheduled monument or registered park and garden.[14]
- Avoid development that adversely affects the setting of The Broads, the openness of the Norwich Southern Bypass Landscape Protection Zone, views to Norwich or the undeveloped approaches to Norwich.
- Consider views from local viewpoints, settlements (particularly Conservation Areas) and popular walking or cycling routes such as the Boudicca Way. If development will be visible ensure it does not dominate and detract from the experience of visiting these locations/ travelling along these routes, either in terms of individual field units or as the sequence of passing through multiple fields.
- Ensure the area or extent of development is in scale with the landscape in which it lies – larger scale developments are more suited to large scale landscapes.
- Solar PV arrays are better suited to areas with a rectilinear field pattern. Within a field the space between panels should be consistent and logical.
- The layout should avoid effects on existing trees and hedges. Since panels are unlikely to be positioned where they would be shaded by vegetation, this is usually relatively easily achieved. Panels should be set back from boundaries to maintain the legibility of field patterns (and also to assist with hedgerow management and potentially to provide habitat). Care should be taken that the associated infrastructure does not conflict with tree root protection areas.
- Panel heights should be kept as low as possible, to minimise visual effect. Where relevant, sufficient space must, however, be provided below the panels for sheep grazing or habitat creation.
- The creation of new tracks for access to solar arrays will increase the landscape impact. Where new tracks are needed, they should as far as possible follow field boundaries. Temporary trackways should be used where possible to minimise longer-term effects.
- Ancillary buildings or structures, such as substations, transformers and inverters should be located in inconspicuous locations. The local vernacular should be considered in relation to buildings – see also comments in relation to substations.
- Dark, recessive colours in non-reflective materials should be chosen for panel frames and ancillary structures, and where appropriate, fencing.
- Only install lighting that is justified. Use of infrared security cameras could avoid the need for new lighting altogether.
- Grid connections should be via underground cable.

[14] Time-depth can be described succinctly as the imprint of the past on a place. Whilst all landscapes have a history some have a more ancient history which is still apparent in the landscape. This is referred to as a greater time-depth.

- Fences should be set back from surrounding hedges, to reduce their apparent height when viewed from beyond the boundary.
- Efforts should be made to maintain land uses on the site that fit with the character of the surrounding area. The spaces between and around the solar arrays can be utilised productively for grazing or habitat creation.
- Hedgerows can be managed to provide ecological benefits as well as screening, which may include the strengthening of existing field boundaries, or introduction of new planting.
- Hedges can provide effective landscape mitigation, either by managing them at higher levels or planting new hedges. However, care should be taken that such hedges do not block long distance views or create a tunnel or corridor effect, for example where planted in association with public rights of way.
- Incorporate biodiversity net gain into any new development and consider opportunities to contribute to the delivery of the Green Infrastructure network in South Norfolk.
- As a temporary development it will be important to demonstrate that the development can be decommissioned effectively and that the landscape can be restored to at least as good a condition as it was prior to the development taking place.

4.6 AD plants

Overview of the development type

4.6.1 Anaerobic digestion (AD) is a natural process where animal or plant materials (biomass) is broken down by microorganisms in the absence of air. The resultant methane-rich biogas can be used to generate heat and/or power (Combined Heat and Power), or upgraded to biomethane for injection into the national gas grid.

4.6.2 AD plants can be classified into two general categories: those that process agricultural feedstock (such as manures, slurries, crops and crop residues), and those that use predominantly municipal, commercial and industrial waste streams as feedstock. AD plants that receive waste feedstock fall under the jurisdiction of the County Planning Authority and are assessed in accordance with the Minerals and Waste Local Plan. The LSS only applies to AD plants that do not involve waste feedstock and therefore do not constitute County Matters.

4.6.3 Built forms relating to AD plants generally comprise fermentation tanks, which can be inflatable, and associated buildings/ancillary structures including gas to grid processing units, Combined Heat and Power (CHP) units, control buildings and feedstock storage including silage clamps. The largest (and most distinctive) elements tend to be the circular storage tanks (which can vary in size from 2.75 - 30.5m in diameter and 1.5 - 33.5m in height) and the flare stack (typically 3 to 5m in height). The feedstock storage areas can be quite extensive and the total site area varies from around 2ha up to 9ha. AD Plants are assumed to be permanent.

Scenarios considered in the LSS

4.6.4 Two scenarios for AD plants are considered in this study:

- farm-scale, single or double tank system, up to 1ha
- larger installation, up to 5ha

Parameters assumed in the LSS

4.6.5 For the purposes of the LSS, the following parameters are assumed for AD plants:

- 16m high tanks
- Perimeter fencing
- Lightning conductor rods
- Timely implementation of a well-considered and maintained landscape scheme to integrate the development into the surrounding landscape framework.

Potential landscape effects

4.6.6 Landscape effects from AD plants may include the following:

- Direct loss of landscape features within the area developed.
- The tanks and/or the flare stack can be a prominent feature in the landscape.
- The bulky industrial style structures can increase the sense of human influence and introduce an industrial character in what might otherwise be a relatively rural landscape.
- Vehicle movements, ancillary activities/storage, security and flood lighting associated with these developments can also increase human influence in more naturalistic or rural landscapes.
- Introduction of artificial slopes or mounds which would have a negative effect on the landform.
- Additional adverse effects on the landscape if SuDS features are not well designed.

Cumulative effects

4.6.7 AD plants are not particularly common, and cumulative effects are therefore unlikely. A map of consented and proposed renewable energy schemes within South Norfolk is provided on the Council's website: Renewables mapping | Broadland and South Norfolk

Design development guidelines

4.6.8 The following guidelines are relevant to the siting and design of AD plants in South Norfolk:

- Aim to locate new structures close to existing built form (e.g. existing electricity substation infrastructure) or in areas which are already well screened by existing vegetation.
- Ensure the scale of development is appropriate for its context.

- The materiality and colours of the proposed structures will be important in terms of their effects on the landscape. Consultation with the LPA will be required to develop the most appropriate design.
- Protect the existing network of hedgerows, woodlands, and semi-natural habitats and aim to extend these as part of any landscape scheme associated with development.
- Enhance existing screening through planting that integrates with features such as woodland and hedgerows within the wider landscape, to reinforce local character and biodiversity.
- Protect undeveloped skylines and backdrops from encroachment – set any new built development back from valley crests and avoid highly visible slopes.
- Ensure that existing landmark features remain prominent in the landscape and new development does not detract from these features.
- Plants should be carefully sited to take advantage of existing screening. Avoid exposed locations.
- Avoid areas with greater time depth such as pre-18th century fields and common land, or areas of higher landcover interest such as unimproved grassland.
- Avoid development which adversely affects the setting of The Broads, the openness of the Norwich Southern Bypass Landscape Protection Zone, views to Norwich or the undeveloped approaches to Norwich.
- Schemes should be limited to small scale plants that can be easily contained within an existing farmyard setting and operate without the need to import material from other farms.
- Consider the landscape effects of drainage features such as SuDS, which can have a highly engineered form and introduce ancillary infrastructure. Ensure they have sufficient space to enable shallow sides and opportunities for habitat creation, so as to create meaningful and positive additions to the landscape.
- Ensure that any earthworks, including artificial mounds that might be used to screen the development, are sensitively designed in terms of height, profile and gradient, to fit in with the surrounding landscape. Generally, such features do not provide effective growing conditions for planting.
- Consider views from local viewpoints, settlements (particularly Conservation Areas) and popular routes (e.g. walking or cycling route). If development will be visible, ensure it does not dominate and detract from the experience of visiting these locations/ travelling along these routes.
- Consider use of green roofs.
- The local vernacular should be considered in relation to buildings.

- Ensure planting around the buildings reflects the underlying landscape character by using locally-appropriate species and linking to the existing green infrastructure network.
- Minimise the use of security lighting. Use full cut-off light fittings to avoid any direct upward light and ensure that lighting is designed to minimise light spill into the surrounding landscape. Consider use of infrared cameras to avoid the need for lighting.
- Consider providing enhanced management of landscape features and habitats as part of any development.
- Incorporate biodiversity net gain into any new development and consider opportunities to contribute to the delivery of the Green Infrastructure network in South Norfolk.

4.7 Battery Storage

Overview of the development type

4.7.1 Battery storage facilities enable energy from renewable sources to be stored and later transferred back to the grid. They are sometimes referred to as battery energy storage systems (BESS).

4.7.2 Battery storage facilities comprise individual battery units (which normally consist of free-standing units) and associated inverters (which convert DC battery power to AC grid power), transformers (transferring power between the grid and the batteries) and switchgear/control room building/cabin all within a fenced compound which may require ground levelling.

4.7.3 The scale of commercial battery storage schemes is highly variable, depending on the required storage capacity. There are technical constraints on where battery storage can be located as they have to be situated close to existing transmission lines. Battery storage facilities are increasingly being co-located with solar arrays to allow excess power to be stored and later transferred back to the grid, to improve the economic viability of solar farms.

4.7.4 A typical site area for a 50MW capacity battery storage is likely to be around 1ha in size, depending on the battery technology used.

4.7.5 Batteries and other components have a design life, and planning permissions are therefore issued on a temporary basis.

Scenarios considered in the LSS

4.7.6 Two scenarios for battery storage are considered in this study:

- Small-scale, up to 1ha
- Larger-scale, over 1ha in size

Parameters assumed in the LSS

4.7.7 For the purposes of the LSS, the following parameters are assumed for battery storage:

- Battery storage cabinets up to 3m high for small scale battery storage projects
- Larger and taller structures for large scale battery storage projects

- Security fencing
- Transformers inverters
- Switchgear/control room building/cabin
- Cable connection to grid
- No external lighting, save that for emergency attendance
- Timely implementation of a well-considered and maintained landscape scheme to integrate the development into the surrounding landscape framework.

Potential landscape effects

4.7.8 The following landscape effects may arise from Battery Storage:

- Direct loss of landscape features within the area developed.
- The bulky industrial style structures can increase the sense of human influence and introduce an industrial character in what might otherwise be a relatively rural landscape.
- Vehicle movements, ancillary activities/storage, security and flood lighting associated with these developments can also increase human influence in more naturalistic or rural landscapes.
- Introduction of artificial slopes or mounds which would have a negative effect on the landform.
- Additional adverse effects on the landscape if SuDS features are not well designed.

Cumulative effects

4.7.9 There are a number of approved battery storage schemes within South Norfolk including the Hornsea 3 Energy Balancing Infrastructure. A map of consented and proposed renewable energy schemes within South Norfolk is provided on the Council's website: Renewables mapping | Broadland and South Norfolk

4.7.10 There is likely to be increased pressure in the future for battery storage in the South Norfolk district. Consideration should be given to the cumulative effects on landscape features that might arise from any new battery storage (including associated substations) when they can be appreciated in close proximity to existing facilities and/or other energy infrastructure.

Design development guidelines

4.7.11 The following guidelines are relevant to the siting and design of Battery Storage developments in South Norfolk.

- Aim to locate new structures close to existing built form (e.g. existing electricity substation infrastructure) or in areas which are already well screened by existing vegetation.
- Ensure the scale of development is appropriate for its context.

- The materiality and colours of the proposed structures will be important in terms of their effects on the landscape. Consultation with the LPA will be required to develop the most appropriate design.
- Protect the existing network of hedgerows, woodlands, and semi-natural habitats and aim to extend these as part of any landscape scheme associated with development.
- Enhance existing screening through planting that integrates with features such as woodland and hedgerows within the wider landscape, to reinforce local character and biodiversity.
- Protect undeveloped skylines and backdrops from encroachment – set any new built development back from valley crests and avoid highly visible slopes.
- Ensure that existing landmark features remain prominent in the landscape and new development does not detract from these features.
- Avoid areas with greater time depth such as pre-18th century fields and common land.
- Avoid locating in open, undeveloped landscapes or areas with historical significance e.g. parklands. Avoid loss of areas of greater landcover interest, such as unimproved grassland or deciduous woodland.
- Avoid development which adversely affects the setting of The Broads, the openness of the Norwich Southern Bypass Landscape Protection Zone, views to Norwich or the undeveloped approaches to Norwich.
- Consider the landscape effects of drainage features such as SuDS, which can have a highly engineered form and introduce ancillary infrastructure. Ensure they have sufficient space to enable shallow sides and opportunities for habitat creation, so as to create meaningful and positive additions to the landscape.
- Ensure that any earthworks, including artificial mounds that might be used to screen the development, are sensitively designed in terms of height, profile and gradient, to fit in with the surrounding landscape. Generally, such features do not provide effective growing conditions for planting.
- Consider views from local viewpoints, settlements (particularly Conservation Areas) and popular routes (e.g. walking or cycling route). If development will be visible, ensure it does not dominate and detract from the experience of visiting these locations/ travelling along these routes.
- Consider use of green roofs.
- The local vernacular should be considered in relation to buildings.
- Ensure planting around the buildings reflects the underlying landscape character by using locally-appropriate species and linking to the existing green infrastructure network.
- Only install lighting that is justified. Use of infrared security cameras could avoid the need for new lighting altogether.

- Consider providing enhanced management of landscape features, habitats and heritage assets as part of any development.
- Incorporate biodiversity net gain into any new development and consider opportunities to contribute to the delivery of the Green Infrastructure network in South Norfolk.

4.8 Overhead powerlines

Overview of the development type

4.8.1 Overhead powerlines consist of overhead wires suspended on wooden poles or steel pylons. The National Grid infrastructure in England is largely made up of 400 kV and 132 kV lines. Besides this there is also infrastructure that belongs to the distribution network operator (DNO) i.e. UK Power Networks.

4.8.2 Electricity pylons were first introduced in 1928 when the National Grid was created, and the basic design of the pylon has remained largely the same since then. The National Grid initially consisted of 132 kV lines, but higher voltage lines requiring larger pylons were introduced in the 1960s.

4.8.3 Overhead powerlines are suspended on steel lattice towers (commonly known as pylons). There are three basic types of towers, straight line towers, angle towers, and terminal towers. Most lines are double circuit and feature towers with three symmetrical cross arms. Angle towers are bulkier than straight line towers. They have tensions insulators rather than suspension insulators and can be asymmetrical. 132 kV lines typically use towers of around 26m in height[15] while 400 kV lines typically use towers of around 50m in height.[16] This standard height can, however, be varied. The largest lines use two or four wire bundles separated by spacers.

4.8.4 132 kV and 400 kV overhead lines of over 2km length are defined as NSIPs and are determined by the Secretary of State rather than the local planning authority.

Scenarios considered in the LSS

4.8.5 Two scenarios for above ground energy transmission are considered in this study:

- 400kV lines that utilise the largest pylons. These are typically owned by National Grid and transmit electricity from where its generated (e.g. power stations) to substations.
- 132kV lines that utilise smaller pylons. These are operated by DNOs and distribute electricity from the substations to homes, businesses, etc.

Parameters assumed in the LSS

4.8.6 For the purposes of the LSS, the following parameters are assumed for overhead transmission lines:

- 400kV lines – pylons with a nominal height of 50m

[15] The standard height of a straight line L4 tower is 26.1m
[16] The standard height of a straight line L6 tower is 50.6m

- 132kV lines – pylons with a nominal height of 26m

Potential landscape effects

4.8.7 Overhead power lines may affect the landscape in the following ways:

- Introduction of tall (frequently the tallest) features into the landscape. As a comparison, commercial warehouses are typically have a ridge height 14m, housing a ridge height of 9m to 12m, and a mature oak 20m to 25m.
- Pylons are inevitably seen as new, and frequently dominant, features in the landscape that introduce a strong sense of modernity.
- The size of the structures and the frequency of the pylon repeat patterns is often in stark contrast with and out of scale to smaller scale, finer grain landscape patterns and features.
- Cables that contrast, in terms of colour, against the prevalent landscape colour, e.g. sky or woodland. Colouring cables green can often make them look more prominent since the green appears artificial against more muted natural tones.
- Pylon construction (and replacement) can involve considerable disruption. Pylons are frequently located in rural or remote locations and temporary access roads are often required.
- Need for ongoing vegetation clearance can affect the landscape underneath transmission lines. Vegetation management can have consequential effects on the character of the landscape below the transmission line.
- Addition of lights on lines (as ecological mitigation measure) would have consequential effects on the landscape, particularly in terms of night-time effects.

4.8.8 Consideration should be given to consequential additions to the landscape that would inevitably arise with overhead lines and pylons, such as extensions to existing or new substations.

4.8.9 Overhead power lines can in theory be decommissioned, i.e. removed when no longer needed, or replaced with underground cables. The DNO (UK Power Networks) has for example taken down power lines between Earlham and Bowthorpe and replaced them with underground cabling.

Cumulative effects

4.8.10 Cumulative effects on landscape and visual receptors might arise from any new overhead power lines when they can be appreciated in close proximity to existing lines and associated infrastructure such as pylons and substations and/or other energy facilities such as battery storage systems.

4.8.11 Existing overhead transmission infrastructure in South Norfolk includes the 400 kV Norwich Main-Bramford power line, the 400 kV Norwich Main-Walpole power line, the 132 kV Norwich Main-Earlham Grid, the 132 kV Norwich Main-Trowse Grid, the 132 kV line between Trowse and Lowestoft, and the 132 kV line between Bramford and Lowestoft.

National Grid Electricity Transmission (National Grid) are proposing to build c.184km of new electricity transmission in order to reinforce the high voltage power network in East Anglia between existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex, as well as to connect new offshore wind generation. The project is known as Norwich to Tilbury. Norwich to Tilbury meets the current criteria of an NSIP.As such, an application for Development Consent will be submitted to the Planning Inspectorate. If consent for the project is awarded, this would be granted in the form of a Development Consent Order (DCO) from the Secretary for State for Business, Energy and Industrial Strategy following a public examination of the application. Within South Norfolk the proposed route would extend southwards from the Norwich Main Substation through the district to the Mid Suffolk border.

Holford Rules

4.8.12 Guidelines on the routeing of overhead lines were first formulated in 1959 by Sir William (later Lord) Holford and became known as the Holford Rules. It is acknowledged that present day environmental assessment has a wider remit than the visual amenity that the Holford Rules concentrate on. Nonetheless, National Grid has reviewed the guidelines and concluded that they remain relevant.

Rule 1:

> *Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the first line in the first place, even if the total mileage is somewhat increased in consequence.*

4.8.13 A sub note to Rule 1 requires that designers should *"Investigate the possibility of alternative routes, avoiding if possible the areas of the highest amenity value"* and, importantly, that *"The consideration of alternative routes must be an integral feature of environmental statements."*

Rule 2:

> *Avoid smaller areas of high amenity value, or scientific interests by deviation; provided that this can be done without using too many angle towers, ie the more massive structures which are used when lines change direction.*

4.8.14 The sub note to Rule 2 notes that *"Where possible choose routes which minimise the effects on the setting of areas of architectural, historic and archaeological interest including Conservation Areas, Listed Buildings, Listed Parks and Gardens and Ancient Monuments."*

Rule 3:

> *Other things being equal, choose the most direct line, with no sharp changes of direction and thus with fewer angle towers.*

4.8.15 Sub note of Rule 3: *"Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds."*

Rule 4:

Choose tree and hill backgrounds in preference to sky backgrounds wherever possible; and when the line has to cross a ridge, secure this opaque background as long as possible and cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.

Rule 5:

Prefer moderately open valleys with woods where the apparent height of towers will be reduced, and views of the line will be broken by trees.

4.8.16 Sub note on Rules 4 and 5: *"Utilise background and foreground features to reduce the apparent height and domination of towers from pan viewpoints"*, *"Minimise the exposure of numbers of towers on prominent ridges and skylines"*, *"Where possible avoiding cutting extensive swathes through woodland blocks and consider opportunities for skirting edges of copses and woods"*, *"Protecting existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape"*.

Rule 6:

In country which is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concentration or 'wirescape'.

4.8.17 Sub note 6 continues the commentary on cumulative effects:

In all locations minimise confusing appearance. Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance; where routes need to diverge, allow where practicable sufficient separation to limit the effects on properties and features between the lines.

Rule 7:

Approach urban area through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach line and the substation, go carefully into the comparative costs of the undergrounding, for lines other than those of the highest voltage.

4.8.18 Sub note for Rule 7 includes:

… Alignments should be chosen after consideration of effects on the amenity of existing development and on proposals for new development. When siting substations take account of the effects of the terminal towers and line connections that will need to be made and take advantage of screening features such as ground form and vegetation.

4.8.19 Supplementary notes include:

Avoid routeing close to residential areas as far as possible on grounds of general amenity.

Where possible choose routes which minimise the effect on Special Landscape Areas, areas of Great Landscape Value and other similar designations of County, District or Local value

Other design development guidelines

4.8.20 The following guidelines should be considered when designing overhead powerlines:

- Overhead powerlines are tall structures, with a standardised design. The mitigation of effects is therefore difficult as it is rarely possible to screen pylons with planting, nor is it possible for the structures to reflect local identity. The main aspect of good design then relates to the choice of alignment and the siting of individual pylons within the landscape.
- Power lines follow straight paths and are better suited to large-scale landscapes with rectilinear field patterns.
- Simple plateau landscapes are more able to accept overhead powerlines than areas with intricate landform.
- Whilst valleys are sometimes preferred for overhead cable routes this would be inappropriate for South Norfolk as the pylons would overwhelm the shallow valleys.
- Consider following the route of existing powerlines to minimise the area which is affected by overhead powerlines and to preserve the remaining areas of undisturbed countryside. [Conversely, in such scenario, consideration must also be given to cumulative effects].
- Angle towers are bulkier than suspension towers and include tension insulators rather than suspension insulators. Sharp changes of direction require unattractive asymmetrical towers and should be avoided. The number of angle towers should be as few as possible and angle towers should also be placed in inconspicuous locations where possible.
- Termination towers are squat and are particularly unattractive, while cable sealing ends add further infrastructure to the landscape. The number of these features should therefore be as few as possible.
- Ancillary features such as cable sealing ends and substations should as far as possible be sited in conjunction with existing infrastructure to minimise harm. These features should also be sited in inconspicuous locations.
- Consider whether use of T-pylons might reduce the potential landscape effects.
- Consult with public on different designs of pylon and other options such as following existing overhead transmission routes.

4.8.21 There is a presumption that underground cable routes are more appropriate than overhead powerlines within protected or more sensitive landscapes. The effect of overhead powerlines within the setting of the Broads will also have be considered to avoid effects on the designated landscape.

4.9 Underground cable routes

Overview of the development type

4.9.1 Underground cable routes refer to underground electricity transmission infrastructure. Cables are employed to connect energy generating infrastructure (e.g. offshore windfarms) with the National

Grid via a substation. The National Grid uses underground cable routes within particularly sensitive landscapes for example National Parks and National Landscapes, and lower voltage underground cables are also used to distribute power at the district level.

Scenarios considered in the LSS

4.9.2 The study considers a single scale of underground cable route.

Parameters assumed in the LSS

4.9.3 For the purposes of the LSS, the following parameters are assumed for underground cable routes:

- Up to six separate trenches, works corridor up to 100m wide.
- Use of trenchless crossings to avoid effects on sensitive features and habitats.
- Removal of all temporary haul routes, compounds and bellmouths at the end of the implementation phase.
- Timely implementation of a well-considered and maintained landscape scheme to reinstate landscape features and make good any damage to the landscape.

Potential landscape effects

4.9.4 For underground cabling, the most pronounced effects are generally during the implementation phases of the project.

4.9.5 Underground cable corridors can be installed via either open cut trenching or horizontal directional drilling (HDD) for shorter distances, which does not require a trench. HDD is typically used for only the most sensitive areas, such as woodland and watercourses.

4.9.6 Some larger offshore windfarms may require multiple trenches. Construction works typically include fencing, vegetation clearance and topsoil stripping and storage, temporary haul routes, the excavation of a trench, the installation of cable ducts, backfilling, cable pulling and reinstatement works. The width of land which is typically required for a cable corridor falls within the range of 30-100m. Typical buried depths are 1.2 to 2m and trenches may be up to 5m wide at the surface.

4.9.7 Following completion of trenching and laying of cable routes permanent residual effects on the landscape include inspection chambers for cable jointing bays and marker posts indicating the location of the cable routes. Cable sealing ends add physical structures that link above and below ground sections of the route. In terms of decommissioning it is understood that cables are normally left buried in the ground at the end of the operation phase.

4.9.8 Cable trenches may affect the landscape in the following ways:

- Laying of the cable can result in direct loss of landscape features along the route (such as trees and sections of hedgerows) and disturbance to ground over long distances. Whilst hedges are typically replanted, trees are not generally replaced.

- Cables are generally laid in straight lines and the temporary trench can be visible over long distances, particularly if it is located in an elevated position or on steep slopes.
- The construction activities can affect characteristics of stillness, remoteness and solitude – although this is temporary.
- Post-construction, the recovering vegetation can produce scarring of the landscape. The time taken for vegetation to recover will depend on the type of landcover and standards of post-construction maintenance. Soil compaction on clay soils can result in long term drainage issues potentially affecting productivity.

Cumulative effects

4.9.9 It is unlikely onshore cable routes would result in notable cumulative effects beyond the implementation phases.

Design development guidelines

4.9.10 The following guidelines should be considered when designing the route for underground cables:

- Minimise the width of the required corridor.
- Ensure successful ground re-instatement/restoration can be achieved.
- Use horizontal directional drilling (HDD) in sensitive locations to conserve above-ground features such as important or irreplaceable trees, hedgerows or nature reserves.
- Avoid steep slopes wherever possible and aim to route through less visible areas.
- Aim to avoid landscape features such as mature trees and woodland, historic sites such as Registered Parks and Gardens, and irreplaceable habitats such as Ancient Woodland.
- Consider views from local viewpoints, settlements (particularly Conservation Areas) and popular walking or cycling routes including the Boudicca Way. If development will be visible ensure it does not dominate and detract from the experience of visiting these locations/ travelling along these routes.
- Minimise disruption to field boundaries as far as possible – routeing through areas of historic small-scale fields will result in a greater impact than routeing through large-scale arable fields.

4.10 Substations

Overview of the development type

4.10.1 Substations transform electricity to a higher voltage to allow it to be transmitted over long distances and also transform it to a lower voltage to allow it to be distributed locally. Substations are typically required to connect generating facilities to the distribution network. The category also includes converter stations which transform one type of current to another.

4.10.2 The typical components of an electrical substation include a secure outdoor compound containing switch gear, control room buildings, and outdoor electrical equipment. There is no standard design of substations. They can be extensive in dimensions, for example, the proposed onshore substation associated with the Sheringham Shoal Extension Project includes an operational compound of up to 6ha, a building height up to 15m, and lightning masts up to 30m. Substations are assumed to be permanent development.

Potential landscape effects

4.10.3 The landscape effects of substations may include the following:

- Direct loss of landscape features in areas to be developed.
- The bulky industrial style structures can increase human influence and industrial character which may be particularly at odds in naturalistic or more remote landscapes.
- Vehicle movements and ancillary activities/storage associated with these developments can also increase human influence in naturalistic or rural landscapes.
- Introduction of artificial slopes or mounds which would have a negative effect on the landform.
- Additional adverse effects on the landscape if SuDS features are not well designed.

Cumulative effects

4.10.4 Substations are typically required to connect generating facilities to the distribution network and so are often found in association with other energy project types.

4.10.5 Consideration should be given to the cumulative effectives on landscape features that might arise from any new substations when they can be appreciated in close proximity to existing facilities and/or other energy infrastructure such as battery energy storage systems and pylons.

4.10.6 Existing substations in South Norfolk include the Norwich Main Substation (located in Stoke Holy Cross Parish), Trowse Grid and Earlham Grid.

4.10.7 The Hornsea Three offshore windfarm project includes a new onshore substation/converter station which will connect to the Norwich Main substation. The new substation will be located to the south of the A47 and east of the B1113 and will occupy a considerable area.

4.10.8 It is proposed that a new onshore substation would be installed to the south of the existing Norwich Main substation as part of the Sheringham Shoal offshore windfarm project. The proposed substation will be up to 6ha in size. The substation will include a control building, transformers, switchgear, access roads, a lightning rod, landscape screening and drainage. The largest structure will be the control building with an approximate height of 15m. The main electrical equipment will not exceed a height of 15m.

4.10.9 The proposed Norwich to Tilbury project also includes an extension to the Norwich Main substation which would be located to the west of the existing facility.

Scenarios considered in the LSS

4.10.10 Although one scale of substation is considered in this study, it should be noted that (as set out above) the scale of substations can vary widely depending on their use or purpose.

Parameters assumed in the LSS

4.10.11 For the purposes of the LSS, the following parameters are assumed for substations:

- Built structures up to 15m tall.
- Security fencing
- Lighting infrastructure for emergency use only. The substation would not typically be lit during normal operation.
- Timely implementation of a well-considered and maintained landscape scheme to integrate the development into the surrounding landscape framework.

Horlock Rules

4.10.12 National Grid's Horlock Rules provide guidance regarding the siting of substations, etc.

Overall System Options and Site Selection

1. *In the development of system options including new substations, consideration must be given to environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum.*

Amenity, Cultural or Scientific Value of Sites

2. *The siting of new NGC substations, sealing end compounds and line entries should as far as reasonably practicable seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections.*
3. *Areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows, surface and ground water sources and nature conservation areas should be protected as far as reasonably practicable.*
4. *Local Context, Land Use and Site Planning 4 The siting of substations, extensions and associated proposals should take advantage of the screening provided by land form and existing features and the potential use of site layout and levels to keep intrusion into surrounding areas to a reasonably practicable minimum.*
5. *The proposals should keep the visual, noise and other environmental effects to a reasonably practicable minimum.*
6. *The land use effects of the proposal should be considered when planning the siting of substations or extensions.*

Design

7. *In the design of new substations or line entries, early consideration should be given to the options available for terminal towers, equipment, buildings and ancillary development appropriate to individual locations, seeking to keep effects to a reasonably practicable minimum.*
8. *Space should be used effectively to limit the area required for development consistent with appropriate mitigation measures and to minimise the adverse effects on existing land use and rights of way, whilst also having regard to future extension of the substation.*
9. *The design of access roads, perimeter fencing, earthshaping, planting and ancillary development should form an integral part of the site layout and design to fit in with the surroundings.*

Line Entries

10. *In open landscape especially, high voltage line entries should be kept, as far as possible, visually separate from low voltage lines and other overhead lines so as to avoid a confusing appearance.*

11. *The inter-relationship between towers and substation structures and background and foreground features should be studied to reduce the prominence of structures from main viewpoints. Where practicable the exposure of terminal towers on prominent ridges should be minimised by siting towers against a background of trees rather than open skylines.*

Other design development guidelines

4.10.13 The following guidelines are relevant to the design of Substations in South Norfolk:

- Aim to locate new structures close to existing built form (e.g. existing electricity substation infrastructure) or in areas which are already well screened by existing vegetation.
- Ensure the scale of development is appropriate for its context.
- The materiality and colours of the proposed structures will be important in terms of their effects on the landscape. Consultation with the LPA will be required to develop the most appropriate design.
- Protect the existing network of hedgerows, woodlands, and semi-natural habitats and aim to extend these as part of any landscape scheme associated with development.
- Enhance existing screening through planting that integrates with features such as woodland and hedgerows within the wider landscape, to reinforce local character and biodiversity.
- Protect undeveloped skylines and backdrops from encroachment – set any new built development back from valley crests and avoid highly visible slopes.
- Ensure that existing landmark features remain prominent in the landscape and new development does not detract from these features.
- Avoid areas with greater time depth such as pre-18th century fields and common land.
- Avoid locating in open, undeveloped landscapes or areas with historical significance e.g. parklands. Avoid loss of areas of greater landcover interest, such as unimproved grassland or deciduous woodland.
- Avoid development which adversely affects the setting of The Broads, the openness of the Norwich Southern Bypass Landscape Protection Zone, views to Norwich or the undeveloped approaches to Norwich.
- Consider the landscape effects of drainage features such as SuDS, which can have a highly engineered form and introduce ancillary infrastructure. Ensure they have sufficient space to enable shallow sides and opportunities for habitat creation, so as to create meaningful and positive additions to the landscape.

- Ensure that any earthworks, including artificial mounds that might be used to screen the development, are sensitively designed in terms of height, profile and gradient, to fit in with the surrounding landscape. Generally, such features do not provide effective growing conditions for planting.
- Consider views from local viewpoints, settlements (particularly Conservation Areas) and popular routes (e.g. walking or cycling route). If development will be visible, ensure it does not dominate and detract from the experience of visiting these locations/ travelling along these routes.
- Consider use of green roofs.
- The local vernacular should be considered in relation to buildings.
- Ensure planting around the buildings reflects the underlying landscape character by using locally-appropriate species and linking to the existing green infrastructure network.
- Minimise the use of lighting.
- Consider providing enhanced management of landscape features and habitats as part of any development.
- Incorporate biodiversity net gain into any new development and consider opportunities to contribute to the delivery of the Green Infrastructure network in South Norfolk.

5 Findings of the Landscape Susceptibility Study

5.1 Overview

5.1.1 The following section summarises the findings of the LSS.

5.1.2 The detailed analysis of landscape susceptibility is contained within Appendix 3. Within each table, the susceptibility of the Landscape Type to the different development scenarios is assessed using a set of standard criteria. Finally, an overall judgement is made regarding the susceptibility of each of the LCAs to different forms of development.

5.1.3 Whilst this susceptibility assessment provides an initial indication of the relative susceptibility of different landscapes to a range of development types it should not be interpreted as a definitive statement on the suitability of a certain location for a particular development proposal. It is not a replacement for detailed studies on specific siting and design, and all developments will need to be assessed on their individual merits.

5.1.4 This assessment does not consider the cumulative impact of energy-related developments, other than as noted at Section 4 above where generic commentary is provided. It is important to note that however low the sensitivity rating for an individual type of development, the cumulative effect of multiple energy-related developments can be important, regardless of their individual size. Cumulative assessment of specific energy-related proposals will be a key part of the development process.

5.1.5 The following tables summarise the overall susceptibility of the different Landscape Character Areas to different forms of development.

Table 1: Susceptibility to Solar PV development

Landscape Character Type/Area	Small-scale (up to 5MW)	Medium-scale (5MW - 15MW)	Large-scale (15MW - 50MW)	Very large-scale (over 50MW)
A: Rural River Valley				
A1: Tas Rural River Valley	Medium-High	High	High	High
A2: Yare/Tiffey Rural River Valley	Medium-High	High	High	High
A3: Tud Rural River Valley	Medium-High	High	High	High
A4: Wensum Rural River Valley	Medium-High	High	High	High
A5: Waveney Rural River Valley	Medium-High	High	High	High
B: Tributary Farmland				
B1: Tas Tributary Farmland	Medium	Medium	Medium-High	Medium-High
B2: Tiffey Tributary Farmland	Medium	Medium	Medium-High	Medium-High
B3: Rockland Tributary Farmland	Medium	Medium	Medium-High	Medium-High
B4: Waveney Tributary Farmland	Medium	Medium	Medium-High	Medium-High
B5: Chet Tributary Farmland	Medium	Medium	Medium-High	Medium-High
B6: Yare Tributary Farmland	Medium	Medium	Medium-High	Medium-High
C: Tributary Farmland with Parkland				
C1: Yare Tributary Farmland with Parkland	Medium	Medium	Medium-High	Medium-High
C2: Thurlton Tributary Farmland with Parkland	Medium	Medium	Medium-High	Medium-High
D: Settled Plateau Farmland				
D1: Wymondham Settled Plateau Farmland	Medium	Medium	Medium-High	Medium-High
D2: Poringland Settled Plateau Farmland	Medium	Medium	Medium-High	Medium-High
E: Plateau Farmland				
LCA E1: Ashwellthorpe Plateau Farmland	Medium	Medium	Medium-High	Medium-High
LCA E2: Great Moulton Plateau Farmland	Medium	Medium	Medium-High	Medium-High
LCA E3: Hingham-Mattishall Plateau Farmland	Medium	Medium	Medium-High	Medium-High
F: Valley Urban Fringe				
LCA F1: Yare Valley Urban Fringe	Medium	Medium	Medium-High	Medium-High
G: Fringe Farmland				
LCA G1: Easton Fringe Farmland	Medium	Medium	Medium-High	Medium-High

Table 2: Susceptibility to AD plants

Landscape Character Type/Area	Farm-scale (up to 1ha)	Larger-scale (up to 5ha)
A: Rural River Valley		
A1: Tas Rural River Valley	Medium-Low	High
A2: Yare/Tiffey Rural River Valley	Medium-Low	High
A3: Tud Rural River Valley	Medium-Low	High
A4: Wensum Rural River Valley	Medium-Low	High
A5: Waveney Rural River Valley	Medium-Low	High
B: Tributary Farmland		
B1: Tas Tributary Farmland	Low	Medium-High
B2: Tiffey Tributary Farmland	Low	Medium-High
B3: Rockland Tributary Farmland	Low	Medium-High
B4: Waveney Tributary Farmland	Low	Medium-High
B5: Chet Tributary Farmland	Low	Medium-High
B6: Yare Tributary Farmland	Low	Medium-High
C: Tributary Farmland with Parkland		
C1: Yare Tributary Farmland with Parkland	Low	Medium-High
C2: Thurlton Tributary Farmland with Parkland	Low	Medium-High
D: Settled Plateau Farmland		
D1: Wymondham Settled Plateau Farmland	Low	Medium-High
D2: Poringland Settled Plateau Farmland	Low	Medium-High
E: Plateau Farmland		
LCA E1: Ashwellthorpe Plateau Farmland	Low	Medium-High
LCA E2: Great Moulton Plateau Farmland	Low	Medium-High
LCA E3: Hingham-Mattishall Plateau Farmland	Low	Medium-High
F: Valley Urban Fringe		
LCA F1: Yare Valley Urban Fringe	Low	Medium-High
G: Fringe Farmland		
LCA G1: Easton Fringe Farmland	Low	Medium-High

Table 3: Susceptibility to Battery Storage schemes

Landscape Character Type/Area	Small-scale (up to 1ha in size)	Larger-scale (over 1ha in size)
A: Rural River Valley		
A1: Tas Rural River Valley	Medium-High	High
A2: Yare/Tiffey Rural River Valley	Medium-High	High
A3: Tud Rural River Valley	Medium-High	High
A4: Wensum Rural River Valley	Medium-High	High
A5: Waveney Rural River Valley	Medium-High	High
B: Tributary Farmland		
B1: Tas Tributary Farmland	Medium	Medium-High
B2: Tiffey Tributary Farmland	Medium	Medium-High
B3: Rockland Tributary Farmland	Medium	Medium-High
B4: Waveney Tributary Farmland	Medium	Medium-High
B5: Chet Tributary Farmland	Medium	Medium-High
B6: Yare Tributary Farmland	Medium	Medium-High
C: Tributary Farmland with Parkland		
C1: Yare Tributary Farmland with Parkland	Medium	Medium-High
C2: Thurlton Tributary Farmland with Parkland	Medium	Medium-High
D: Settled Plateau Farmland		
D1: Wymondham Settled Plateau Farmland	Medium	Medium-High
D2: Poringland Settled Plateau Farmland	Medium	Medium-High
E: Plateau Farmland		
LCA E1: Ashwellthorpe Plateau Farmland	Medium	Medium-High
LCA E2: Great Moulton Plateau Farmland	Medium	Medium-High
LCA E3: Hingham-Mattishall Plateau Farmland	Medium	Medium-High
F: Valley Urban Fringe		
LCA F1: Yare Valley Urban Fringe	Medium-Low	Medium
G: Fringe Farmland		
LCA G1: Easton Fringe Farmland	Medium	Medium-High

Table 4: Susceptibility to Overhead powerlines

Landscape Character Type/Area	132kV lines	400kV lines
A: Rural River Valley		
A1: Tas Rural River Valley	Medium-High	Medium-High
A2: Yare/Tiffey Rural River Valley	High	High
A3: Tud Rural River Valley	High	High
A4: Wensum Rural River Valley	High	High
A5: Waveney Rural River Valley	High	High
B: Tributary Farmland		
B1: Tas Tributary Farmland	Medium	Medium-High
B2: Tiffey Tributary Farmland	Medium-High	High
B3: Rockland Tributary Farmland	Medium	High
B4: Waveney Tributary Farmland	Medium-High	High
B5: Chet Tributary Farmland	Medium	High
B6: Yare Tributary Farmland	Medium	Medium-High
C: Tributary Farmland with Parkland		
C1: Yare Tributary Farmland with Parkland	Medium-Low	Medium-Low
C2: Thurlton Tributary Farmland with Parkland	Medium	High
D: Settled Plateau Farmland		
D1: Wymondham Settled Plateau Farmland	Medium	Medium-High
D2: Poringland Settled Plateau Farmland	Medium	High
E: Plateau Farmland		
LCA E1: Ashwellthorpe Plateau Farmland	Medium-High	High
LCA E2: Great Moulton Plateau Farmland	Medium-High	High
LCA E3: Hingham-Mattishall Plateau Farmland	Medium-High	High
F: Valley Urban Fringe		
LCA F1: Yare Valley Urban Fringe	Medium-Low	Medium-Low
G: Fringe Farmland		
LCA G1: Easton Fringe Farmland	Medium-Low	Medium-High

Table 5: Susceptibility to Underground cable routes

Landscape Character Type/Area	Underground cable routes and associated works
A: Rural River Valley	
A1: Tas Rural River Valley	Medium-High
A2: Yare/Tiffey Rural River Valley	Medium-High
A3: Tud Rural River Valley	Medium-High
A4: Wensum Rural River Valley	Medium-High
A5: Waveney Rural River Valley	Medium-High
B: Tributary Farmland	
B1: Tas Tributary Farmland	Low
B2: Tiffey Tributary Farmland	Low
B3: Rockland Tributary Farmland	Low
B4: Waveney Tributary Farmland	Low
B5: Chet Tributary Farmland	Low
B6: Yare Tributary Farmland	Medium-Low
C: Tributary Farmland with Parkland	
C1: Yare Tributary Farmland with Parkland	Medium-Low
C2: Thurlton Tributary Farmland with Parkland	Medium
D: Settled Plateau Farmland	
D1: Wymondham Settled Plateau Farmland	Low
D2: Poringland Settled Plateau Farmland	Low
E: Plateau Farmland	
LCA E1: Ashwellthorpe Plateau Farmland	Low
LCA E2: Great Moulton Plateau Farmland	Low
LCA E3: Hingham-Mattishall Plateau Farmland	Low
F: Valley Urban Fringe	
LCA F1: Yare Valley Urban Fringe	Medium-High
G: Fringe Farmland	
LCA G1: Easton Fringe Farmland	Low

Table 6: Susceptibility to Substations

Landscape Character Type/Area	Substations
A: Rural River Valley	
A1: Tas Rural River Valley	High
A2: Yare/Tiffey Rural River Valley	High
A3: Tud Rural River Valley	High
A4: Wensum Rural River Valley	High
A5: Waveney Rural River Valley	High
B: Tributary Farmland	
B1: Tas Tributary Farmland	Medium-High
B2: Tiffey Tributary Farmland	Medium-High
B3: Rockland Tributary Farmland	Medium-High
B4: Waveney Tributary Farmland	Medium-High
B5: Chet Tributary Farmland	Medium-High
B6: Yare Tributary Farmland	Medium-High
C: Tributary Farmland with Parkland	
C1: Yare Tributary Farmland with Parkland	Medium-High
C2: Thurlton Tributary Farmland with Parkland	Medium-High
D: Settled Plateau Farmland	
D1: Wymondham Settled Plateau Farmland	Varying from Medium to Medium-High
D2: Poringland Settled Plateau Farmland	Varying from Medium to Medium-High
E: Plateau Farmland	
LCA E1: Ashwellthorpe Plateau Farmland	Medium-High
LCA E2: Great Moulton Plateau Farmland	Medium-High
LCA E3: Hingham-Mattishall Plateau Farmland	Medium-High
F: Valley Urban Fringe	
LCA F1: Yare Valley Urban Fringe	Medium-High
G: Fringe Farmland	
LCA G1: Easton Fringe Farmland	Medium-High

6 Local Landscape Character Assessment relating to Norwich Main Substation

6.1 Overview

6.1.1 The following section provides a local level Landscape Character Assessment, to set out the key characteristics and special features of a 5km radius from Norwich Main (excluding the area beyond the district boundary). This will include a judgement on landscape value. The study area considers the published Landscape Character Assessments, to establish the landscape value and susceptibility to change, and therefore the resultant sensitivity of the landscape surrounding the Norwich Main substation.

6.2 Scope

6.2.1 The importance of understanding the landscape character of all landscapes in England is recognised in the National Planning Policy Framework (NPPF), which states [§187] that planning policies and decisions should contribute to the natural environment by: *"recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland"*. Landscape character assessment is the process which can identify these intrinsic values and unique characteristics of the diverse landscapes in the UK.

6.2.2 Landscape character assessments enable landscapes to be described and understood by mapping natural, physical and cultural features in order to define different landscapes and demonstrate what makes them special. Landscape character types share similar characteristics, such as underlying geology, soil type, topography and landform, the pattern and type of land/field enclosure, historic land use, the pattern of settlements and types of building that these comprise, tree and woodland cover and the general visual experience of the area. Landscape character areas are specific geographic instances of a particular landscape type.

6.2.3 It is important to note that landscape character assessments can be undertaken at a range of scales. It should also be noted that boundaries are only indicative of the change between areas and therefore when working at a site scale, especially close to boundaries between character types or character areas, users should carefully identify which landscape the land parcel belongs to, based on its characteristics. In addition, it is important to note that while drawn with a line on a map, areas close to boundaries often may be better thought of as an area of transition and may display some of the characteristics and sensitivities of both character areas.

6.2.4 Effects on landscape character can be both direct, i.e. on the character area/landscape type that the proposed development is located within, and indirect, i.e. changes to characteristics or perceptions of character that occur beyond the boundary of a character area/landscape type. In addition, effects on landscape character may be positive or negative, i.e. strengthening and

enhancing the characteristic patterns and features, or eroding and losing the patterns and features that contribute to landscape character.

6.2.5 The published LTs and LCAs from the national to the local levels within the Norwich Main 5km study area are summarised in the Table below.

Table 4: Hierarchy of Landscape Character Types and Character Areas

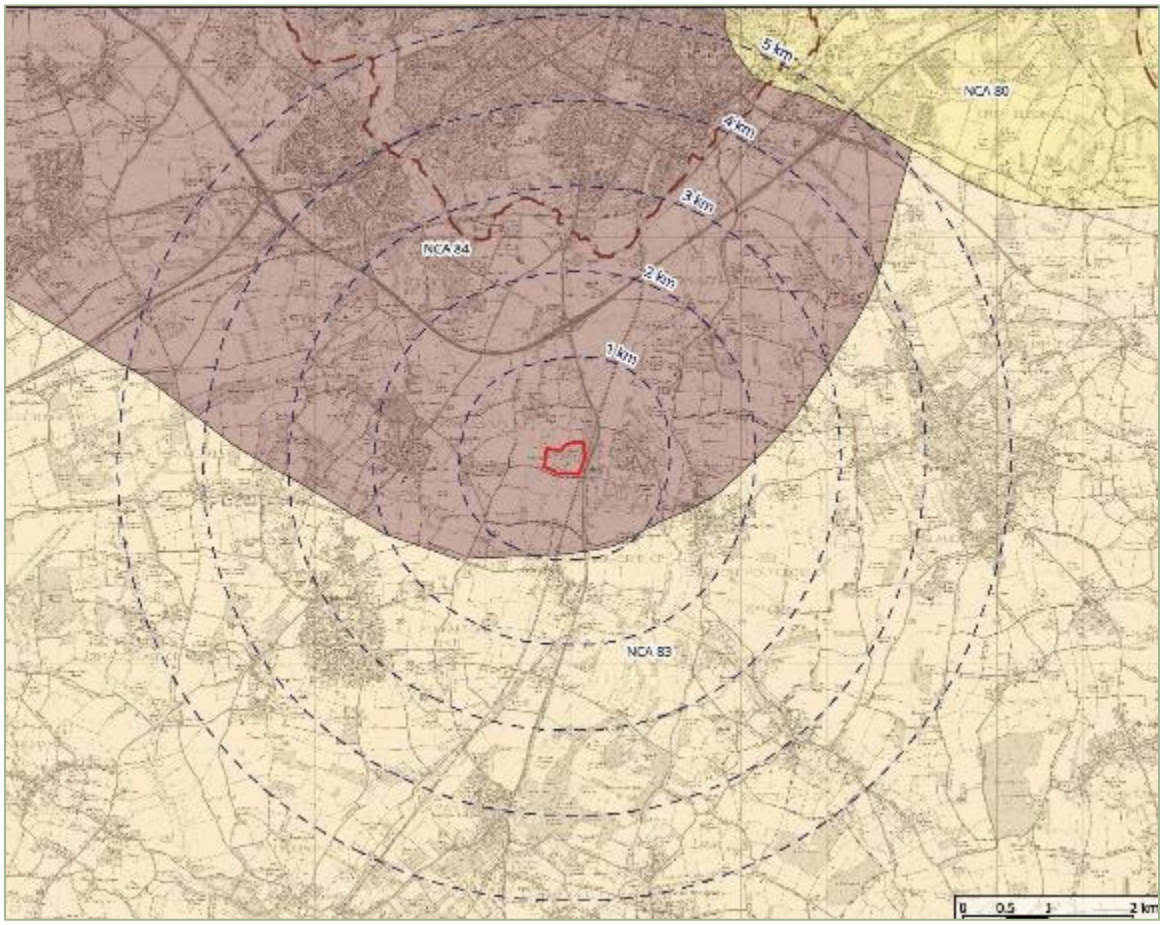
Level	Landscape Character Type (LCT)	Landscape Character Area (LCA)
National: National Character Area (NCA) Profiles (Natural England 2014)	*Site sits within;* Mid Norfolk NCA (84)	
	Neighbouring; South Norfolk and High Suffolk Claylands NCA (83)	
District: South Norfolk Council - South Norfolk Landscape Character Assessment (2001)	*Site sits within;* Tributary Farmland	*Site sits within;* B1 Tas Tributary Farmland
	Neighbouring; River Valley Tributary Farmland with Parkland Settled Plateau Farmland	*Neighbouring;* A1 Tas Rural River Valley C1 Yare Tributary Farmland with Parkland D1 Wymondham Settled Plateau Farmland D2 Poringland Settled Plateau Farmland

6.2.6 This section seeks to assess the Landscape Character Areas surrounding Norwich Main, and provide an assessment of sensitivity to the different energy-related development scenarios, as set out above in section 4.1.

6.3 National Character Baseline

6.3.1 At the national level Norwich Main is located within NCA 84: Mid Norfolk. The broadly flat, rural landscape of the Mid Norfolk National Character Area (NCA) occupies the northern section of the East Anglian Plain, becoming more undulating to the north where it merges with the Central North Norfolk NCA in a curving line across the Wensum Valley, and more rolling towards Norwich to the east. This is ancient countryside with a long-settled agricultural character, where arable land is enclosed by winding lanes and hedgerows, interspersed with woodland and heath and dissected by lush pastoral river valleys. A patchwork of cultivated land, numerous church spires, distant wooded horizons and big skies dominate the landscape.

6.3.2 The NCA notes that '*The main pressures for change to the area are posed by growth and a need to accommodate increased development, especially around Norwich. The potential for further agricultural intensification and a need for sustainable approaches to commercial farming practices are also key challenges. Maintaining the traditional farmed landscape of Mid Norfolk NCA – through sustainable land management practice to help protect its important natural processes and resources, its areas of high tranquillity and enhance the natural landscape for recreational opportunity, geodiversity and biodiversity – is also presenting further challenges into the future*.'



National Character Areas within 5km of Norwich Main.

6.3.3 Norwich Main is located close to the border with NCA 83: South Norfolk and High Suffolk Claylands, and can therefore is considered to occupy a zone of transition, at the national level.

6.3.4 The South Norfolk and High Suffolk Claylands occupy a large area of central East Anglia between the Yare Valley in the north and the Gipping Valley in the south. The area is defined by the underlying clay soils which contrast with the sandy soils of Breckland (to the west) and the Sandlings (to the East). The area was formerly well-wooded and was dominated by wood-pasture and dairy farming. The Napoleonic Wars, at the turn of the C19, coincided with the introduction of underdrainage. Because of the war wheat prices rose dramatically and the area switched to arable farming. Many of the woodlands and individual trees were removed in the C19, and the C20 has seen further hedgerow loss. The central clay belt within the county was traditionally referred to as High Suffolk (in contrast to the Brecklands and the Sandlings). The character area consists of a predominantly flat clay plateau which is incised by numerous small-scale wooded river valleys with complex slopes. The underlying chalk bedrock is overlain by a layer of glacial till. The Waveney, the largest of the NCA's rivers, forms the division between the counties of Norfolk and Suffolk. Most rivers however are small and slow following. The river valleys often contain a

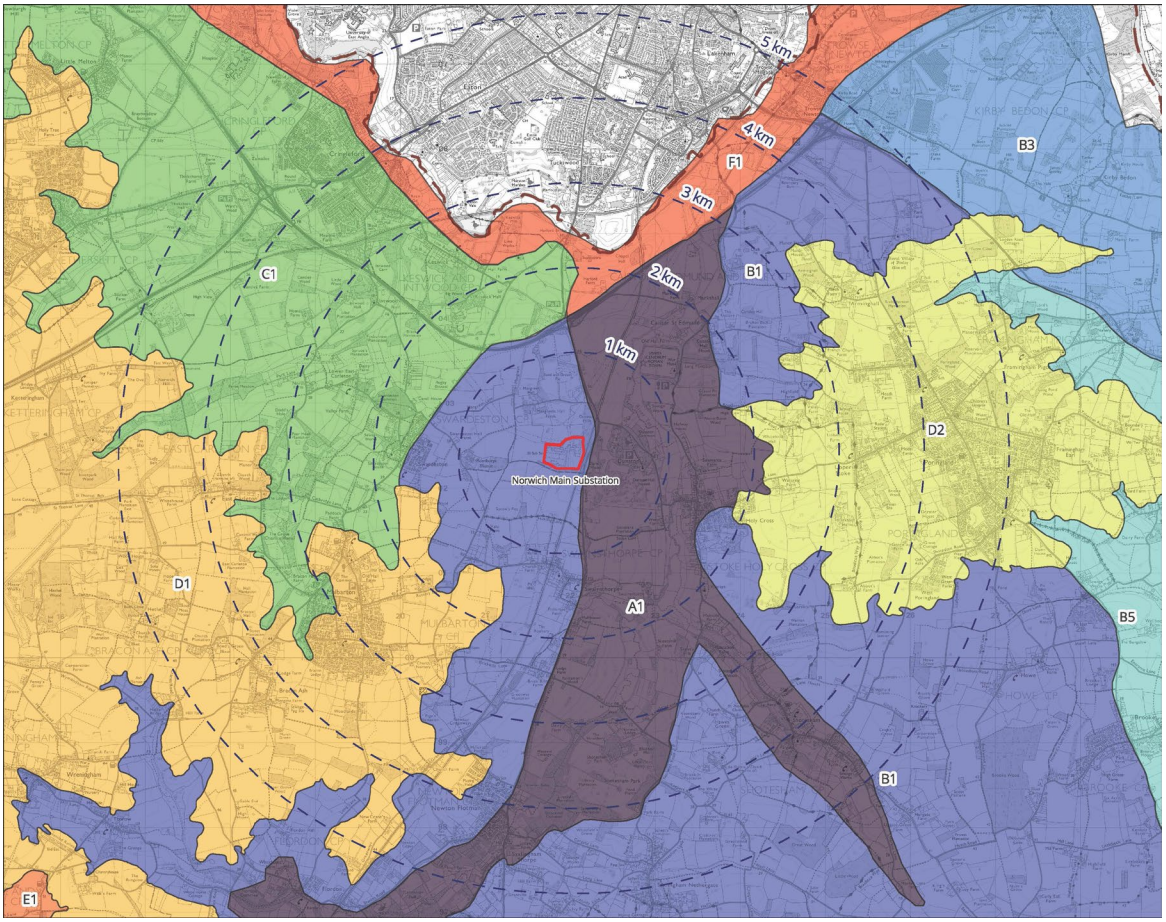
mosaic of habitats such as small-scale pasture or fens. Large areas of woodland are scarce within the current landscape.

6.3.5 The main pressures for change are described as the need to accommodate increased development in and around traditional centres, especially along the main transport corridors.

6.3.6 The landscape surrounding Norwich Main consists of arable farmland divided by native hedges, interspersed with small woods. It also contains historic lanes, while the settlement pattern consists of nucleated villages and isolated halls. It is therefore considered to be typical of both Mid Norfolk and the South Norfolk and High Suffolk Claylands NCAs.

6.4 District Landscape Character Baseline

6.4.1 Utilising the existing District Landscape Character Assessment, quotes and comments relating to susceptibility criteria and value characteristics are identified in Tables 01-10, Appendix 04.



District Landscape Character areas within 5km of Norwich Main.

6.4.2 At the district level the Norwich Main Substation is located within **B1 Tas Tributary Farmland LCA**. The Tas Tributary Farmland is a large area of land situated between the Tas Rural River Valley and

the surrounding Plateau areas at an elevation of about 30m AOD to 50m AOD. See Tables 01-02, Appendix 04.

6.4.3 To the east of Norwich Main lies **A1 Tas Rural River Valley LCA**. The Tas Rural River Valley extends from Tasburgh in the south, to the Yare Valley in the north. The boundaries are defined topographically in relation to the top of the valley sides and roughly follow the 30m contour. See Tables 03-04, Appendix 04.

6.4.4 To the north west of Norwich Main lies **C1 Yare Tributary Farmland with Parkland LCA**. The Yare Tributary Farmland with Parkland occurs to the south west of Norwich and is defined by the rural and urban reaches of the River Yare to the east and north, and by the settled plateau farmland around Hethersett and Wymondham (above the 40m AOD contour) to the south. See Tables 05-06, Appendix 04.

6.4.5 To the south west of Norwich Main lies **D1 Wymondham Settled Plateau Farmland LCA**. The Wymondham Settled Plateau Farmland occupies an area to the southwest of Norwich, above contour level 40m AOD. It includes the towns of Wymondham and Hethersett. See Tables 07-08, Appendix 04.

6.4.6 To the east of Norwich Main and east of A1 Tas Rural River Valley LCA, lies **D2 Poringland Settled Plateau Farmland**. The Poringland Settled Plateau Farmland is defined by the 40m AOD contour. See Tables 09-10, Appendix 04.

6.5 Landscape Sensitivity of the LCAs surrounding Norwich Main

6.5.1 The sensitivity of each of the five LCAs that fall within the Norwich Main study area, as set out above, was assessed using a combination of desktop and field work.

6.5.2 It is recognised that the South Norfolk Landscape Character Assessments' purpose is not to attribute relative values to different character area, in keeping with LCA guidance, which recognises that all landscapes are valued to some extent by some people, whilst the GLVIA guidance recognises that there are differences in value which will affect sensitivity, so some consideration of value is therefore required.

Susceptibility of the landscape to change

6.5.3 The susceptibility of each LCA to each of the different types of development proposed was assessed using a pre-defined set of criteria. These criteria reflect both the national guidance and the particular circumstances of the landscape the study area.

6.5.4 For each criterion, indicators of higher susceptibility and indicators of lower susceptibility were provided, to help guide judgements. The criteria, together with the indicators of susceptibility, are reproduced at Appendix 02.

6.5.5 To assess each LCA's susceptibility to change, certain assumptions were made. These were necessarily broad, since (as noted above) a Landscape Susceptibility Study assesses the principle of a particular type of development rather than a known development. For the purposes of this study, the extents and heights of the various types of energy related development are set out in

section 4.1. The tables below provide some relative comparisons of known features within the region.

Table 5: Tall structures comparison

Structure	Height
Domestic Buildings	6-10m
Mature deciduous trees (depending upon species)	10-25m
Standard lattice tower 'pylons'	15-55m
Norwich Cathedral Spire	96m

Table 6: Comparative Areas

Land use	Area (hectares)
Typical football pitch	0.6-0.8 ha
Norwich Main Substation	14 ha
Dunston Hall Golf Course	36 ha
Approved solar array in Swainsthorpe, 49.9 MW - not yet constructed.	79.6 ha

6.5.6 The susceptibility of the landscape of each LCA to change from development of the type proposed was assessed against each of the specific criteria, using a five-point scale of ***High, High/Medium, Medium, Medium/Low or Low*** susceptibility to change.

Value

6.5.7 Value is an inherent quality of the baseline conditions, which is independent of the type of development proposed. GLVIA3 recognises that landscape value is not always signified by designation. Landscape value should be determined by a review of existing assessments and, where appropriate, by new analysis. The Landscape Institute Technical Guidance Note 02/21 sets out a range of factors that can be considered when assessing landscape value. The different

aspects of value are natural heritage, cultural heritage, landscape condition, associations, distinctiveness, recreational, perceptual, and functional. The presentation of information about landscape value should be proportionate to the task at hand.

6.5.8 The landscape value of each LCA was assessed using a pre-defined set of criteria based on TGN 02/21. The LCA descriptions are drawn upon to identify any factors which add value either to the LCA or to particular elements within it. These might be special qualities associated with a designated landscape (e.g. AONB) or other aspects which could influence the sensitivity of the landscape to the identified energy related development.

6.5.9 The value of the LCA was assessed against each of the specific criteria, using a five-point scale of **High, High/Medium, Medium, Medium/Low, Low value**.

6.5.10 TGN 02/21 notes that "Value is best appreciated at the scale at which a landscape is perceived – rarely is this on a field-by-field basis." As such, the value judgements considered the sites and their landscape settings.

Sensitivity

6.5.11 The landscape units described in the district-level landscape character assessment have been used to provide the baseline data for assessing the sensitivity of the landscape character as they provide the most detailed assessment of landscape character available.

6.5.12 Landscape sensitivity is a product of susceptibility and value, and is expressed in the matrix below;

Table 7: Landscape Sensitivity

Criteria		Value				
		High	Medium / High	Medium	Medium / Low	Low
Susceptibility	High	High	High	Medium / High	Medium	Medium
	Medium / High	High	Medium / High	Medium / High	Medium	Medium
	Medium	Medium / High	Medium / High	Medium	Medium	Medium / Low
	Medium / Low	Medium	Medium	Medium	Medium / Low	Low
	Low	Medium	Medium	Medium / Low	Low	Low

6.6 Summary of LCA Sensitivity to Change

6.6.1 The **B1 Tas Tributary Farmland LCA** has no national landscape designations, whilst it does contain designated ecological assemblages and a number of County Wildlife Sites, ancient woodland and medieval deer parks, the large scale hedgerow removal and modern development influence the overall quality of the landscape baseline, considered to be of *Medium* value. Within the eastern part of the LCA a large double line of overhead powerlines traverse the landscape, with Norwich Main substation to the north west of the LCA, a large solar PV development approved (not yet under construction) to the south west, and large transmitting station west of Howe already have an adverse effect on landscape character by extending vertically above the wooded horizons, so sensitivity to modern development would be lower, but larger developments in terms of extent and vertical axis would be out of scale with the field pattern, landform and landcover.

6.6.2 Whilst this LCA may accommodate the small to medium-scale energy development scenarios, consideration must be made regarding cumulative impact, especially given the likelihood of requiring connection to the existing substation at Norwich Main, which is located within the north western part of this LCA.

6.6.3 The **A1 Tas Rural River Valley LCA** has no national landscape designations, whilst it does contain designated ecological assemblages including wet grassland and shallow fenland peat, the landscape remains predominantly pastoral with linear wet woodland following the river corridor, with good hedgerow network with mature trees, with the overall quality of the landscape baseline, considered to be of *Medium-High* value. The A140 runs along the upper slopes on the

western side of the valley, adding noise and movement to the otherwise peaceful valley landscape. Overhead power lines and pylons, along with the mainline railway into Norwich, cross the northern extent of the LCA, with the Norwich Southern Bypass forming the northern limit of the character area, reducing sensitivity in these locations.

6.6.4 This LCA is a clearly defined flat valley floor with shallow side slopes, moderately wide and following a simple valley floor. The nature of much of the LCA is a scenic and largely tranquil rural landscape which would have a relatively high level of sensitivity to any distinctly modern development.

6.6.5 The **C1 Yare Tributary Farmland with Parkland LCA** has no national landscape designations, whilst it does contain a Registered Park and Garden, Intwood Hall, the landscape presents a variety of more intimate landscape settings, with many estates and historic parklands, with a sparse hedgerow and hedgerow tree network, with occasional mature / veteran oaks forming distinctive features along the lanes. The overall quality of the landscape baseline is considered to be of *Medium-High* value. The Norwich Southern Bypass and A11 trisect the landscape, along with the Great Eastern Main Line, creating corridors of noise and movement within the otherwise peaceful landscape.

6.6.6 This LCA is a peaceful farmland landscape with small farm woodlands and intermittently wooded tributary valleys creating a quiet rural atmosphere. The nature of much of the LCA is a scenic and largely tranquil rural landscape, with a high preponderance of large parkland estates, tree-lined avenues and traditional wooded parkland.

6.6.7 The **D1 Wymondham Settled Plateau Farmland LCA** has no national landscape designations, whilst it does contain areas of ancient woodland and some village ponds, the landscape generally presents as large expanses of arable plateau, with little variation, with long views afforded from the plateau edge. The overall quality of the landscape baseline is considered to be of *Medium* value. The A11 bisects the landscape, creating a corridor of noise and movement. This study area does not extend beyond the A11, to the north of which, between Norwich, Hethersett and Wymondham is an area designated as Strategic Gap.

6.6.8 This LCA is a settled landscape with large edge of plateau towns and villages with smaller settlements dispersed across the plateau. The nature of much of the LCA is of a large scale open arable landscape often monotonous character due to the large scale arable monocultures.

6.6.9 The **D2 Poringland Settled Plateau Farmland LCA** has no national landscape designations, whilst it does contain areas of ancient woodland and some moats, the landscape generally presents as large scale arable plateau, with a wooded character to the north of the LCA and around settlements. Long views are afforded from the plateau edge towards Norwich and to the Tas Valley. The overall quality of the landscape baseline is considered to be of *Medium* value. The large telecommunications towers (radio and radar) located at the high point of the plateau in Caistor St Edmund, are visible from a large area, extending above wooded horizons.

6.6.10 This LCA has a densely settled core area, with ribbon development interconnecting to other village cores. The long distance national trail of Boudica's Way cuts across the LCA leading towards the

Tas Valley. The nature of much of the LCA is of a large scale open arable landscape, with reduced levels of tranquillity near settlements.

6.6.11 Consideration must be made regarding cumulative impact, especially given the likelihood of requiring connection to the existing substation at Norwich Main, which is located within the Tas Tributary Farmland LCA.

6.6.12 The assessment of landscape value is summarised below. Landscape value can be combined the judgements on susceptibility in Tables 1-3 to arrive at a judgement on the sensitivity of the LCA to a particular type of development.

Table 8: Landscape value

Landscape Character Area	Landscape value
B1: Tas Tributary Farmland	Medium
A1: Tas Rural River Valley	Medium-High
C1: Yare Tributary Farmland with Parkland	Medium-High
D1: Wymondham Settled Plateau Farmland	Medium
D2: Poringland Settled Plateau Farmland	Medium

7 Policy DM 4.6: Landscape Setting of Norwich

7.1 Background

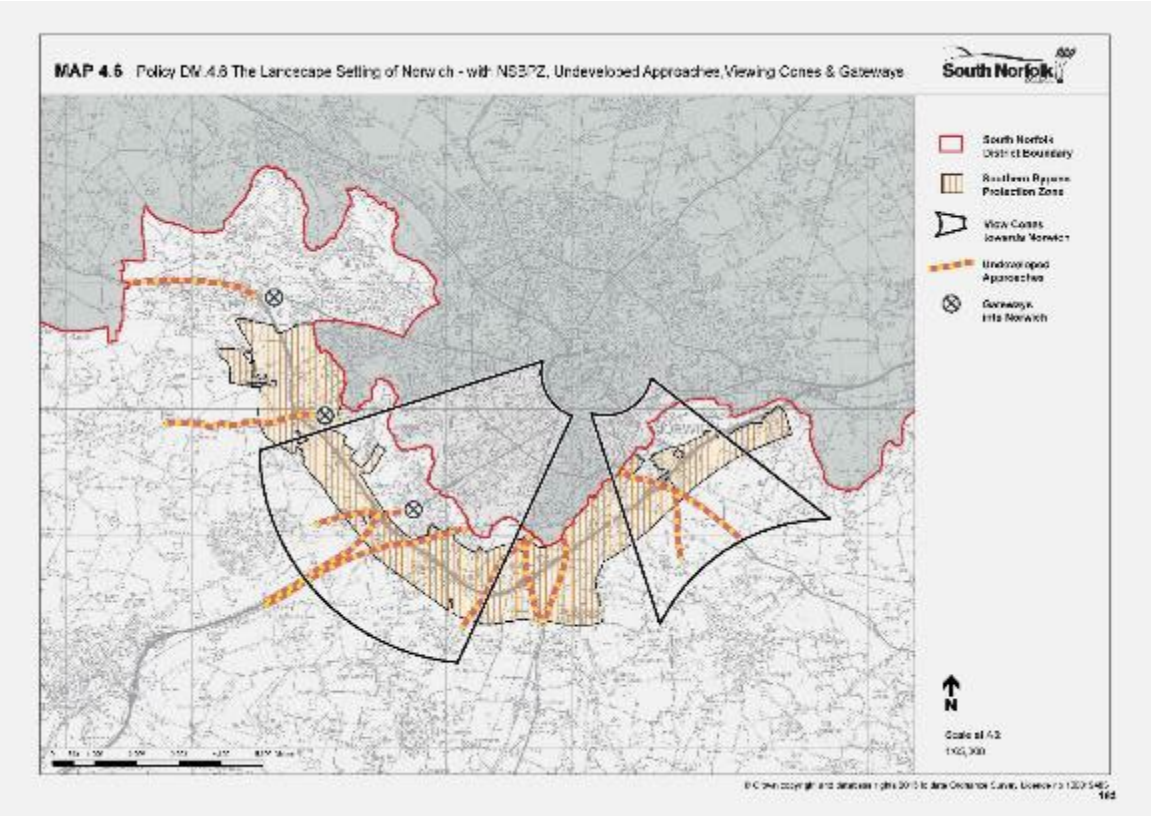
7.1.1 Chapter 4.5 of the South Norfolk Local Plan Development Management Policies Document, Adopted October 2015, considers the landscape setting of Norwich. §4.53 notes that *"As the dominant centre of the sub-region, the city of Norwich will continue to act as the focus of significant development pressures."* Although the Norwich Policy Area is the preferred focus for growth, there has been a history of local planning policies designed to *"protect the City's surroundings from "inappropriate development" and to "preserve those attributes of the City's natural setting which contribute to its environmental quality."* In particular, there has been concern that *"development pressure at the junctions on the Southern Bypass is not allowed to outweigh the environmental protection of important landscape characteristics in these locations."*

7.1.2 The A47 Norwich Southern Bypass is recognised to have been *"well designed to fit into the landscape through which it passes and it is accepted that it should not be regarded as a boundary up to which development is acceptable"* [§4.54]. Within South Norfolk a Landscape Zone has been identified where there is a high level of visual accessibility to and from the bypass to a predominantly open rural area, that positively enhances the setting of Norwich.

7.1.3 Any development proposed within the landscape setting of Norwich will be assessed against South Norfolk Local Plan Development Management Policies Document, Policy DM 4.6: Landscape Setting of Norwich. This policy seeks to ensure that all development proposals will not harm and will, where possible, enhance the landscape setting of Norwich with regard to:

- the Norwich Southern Bypass Landscape Protection Zone (NSBLPZ)
- Key Views – identified long distance view cones into and out of the city
- Undeveloped Approaches to Norwich
- Gateways marking the arrival at and departure from Norwich

7.1.4 These designations are all as identified on the policies map as illustrated on the figure below. It is noted that *"Development which would significantly harm the NSBLPZ or the landscape setting of the Norwich urban area will not be permitted."*



Map extract from South Norfolk Development Management Policies Document, Adopted October 2015

7.2 Norwich Southern Bypass Landscape Protection Zone

7.2.1 Policy DM 4.6 notes:

> *All development proposals within the Norwich Southern Bypass Landscape Protection Zone (NSBLPZ), as shown on the Policies Map, should have regard to protecting the openness of the Zone and, where possible, enhancing the landscape setting of the southern bypass, including the practice of wild flower planting and management regimes.*

7.2.2 The supporting text notes [§4.56]:

> *A Landscape Zone has been identified where there are high levels of visual accessibility to and from the road to a predominantly open rural area that plays an important part in making the landscape setting of Norwich. This Zone does not have a distinct or special landscape character in its own right.*

and [§4.58]:

> *Any development to be permitted within the Landscape Zone (including that within the highway and other transport corridors) should have regard to protecting the openness of the Landscape Zone and, where possible, enhancing the landscape setting of the Southern Bypass, including the practice of wild flower planting and management regimes.*

7.2.3 Within South Norfolk, the Norwich Southern Bypass Landscape Protection Zone (NSBLPZ) encompasses land from Bawburgh in the north-west to Whitlingham in the east, following the edge of the city and the route of the bypass. In doing so, it encompasses land in the following LCAs:

- G1: Easton Fringe Farmland
- F1: Yare Valley Urban Fringe
- A2: Yare/Tiffey Rural River Valley
- C1: Yare Tributary Farmland with Parkland
- B1: Tas Tributary Farmland
- A1: Tas Rural River Valley
- B3: Rockland Tributary Farmland

Considerations for the LSS

7.2.4 The following paragraphs provide commentary on how the various development scenarios identified at Section 4 would accord with the objectives of the NSBLPZ.

7.2.5 Openness is understood to mean freedom from development and, as such, it is not possible to mitigate the effect on openness per se.

Solar PV

7.2.6 Solar PV projects tend to cover large areas and would therefore have a correspondingly large effect on the openness of the NSBLPZ. Although Solar PV projects retain the soil and vegetation cover beneath the panels, and are theoretically a temporary land use, they are nonetheless a form of development and represent an urbanising feature within the landscape. Solar PV then conflicts in principle with the aims of the policy. Whilst it is sometimes possible to screen Solar PV with planting this is less likely to be achievable in the NSBLPZ as the landscape zone encompasses the slopes of the Yare Valley. Screening is also made more difficult by embanked sections of the A47 which look across the Yare Valley.

AD plants

7.2.7 AD Plants include large structures and represent substantial developments. AD Plants therefore would be incompatible with maintaining the openness of the NSBLPZ, and would not enhance the setting of the bypass.

7.2.8 The landscape zone does however include occasional farms, and AD Plants which are proposed for processing farm materials in a sustainable way should not be discouraged, as long as they are sited within the existing farmyard.

Battery Storage

7.2.9 Battery Storage represents a smaller form of development, but would nonetheless compromise the openness of the NSBLPZ and the landscape setting of the bypass. Battery storage represents a type of infrastructure development which is at odds with the countryside. This form of development tends to have a utilitarian appearance which would not enhance the setting of the road. The effect could potentially be reduced by more appropriate rural forms of fencing, hedging, and by painting the cabinets dark green.

Overhead powerlines

7.2.10 Overhead powerlines have a small physical footprint which would not compromise the openness of the NSBLPZ. They would however have a negative effect on the views from the road to the surrounding countryside.

Underground cable routes

7.2.11 Underground cable routes would not affect the openness of the NSBLPZ. Whilst there might be some temporary visual effects which are experienced during installation this particular type of development would not alter the nature of the landscape zone.

Substations

7.2.12 Substations would by their nature affect the openness of the NSBLPZ and would introduce a strong developed character. If substations are located away from the existing urban edge this would tend to increase their impact as they would represent isolated development within the countryside.

7.3 Key Views

7.3.1 Policy DM 4.6 notes:

> *All development proposals located within the Key Views 'cones' shown on the Policies Map should ensure they do not obstruct the long distance views to and from the City.*

7.3.2 The supporting text notes [§4.59]:

> *The opportunities for long distance views into the city of Norwich from the south of the city are limited by the topography and screening effect of vegetation. However, fieldwork has identified important opportunities to view the city from the northern edge of the plateau to the south west and south east of the city. (These locations lie within the Landscape Character Areas of Wymondham Settled Plateau Farmland and Poringland Settled Plateau Farmland respectively.) In these areas, broad Key Views 'cones' have been identified (see Map DM 4.6). Within these 'cones' all development proposals should ensure they do not obstruct the long views to and from the city.*

Considerations for the LSS

7.3.3 The following paragraphs provide commentary on how the various development scenarios identified at Section 4 would accord with the objective of the Key Views.

Solar PV

7.3.4 Given their height Solar PV panels are unlikely to completely obstruct views to or from Norwich.

AD plants

7.3.5 AD plants include large structures and clamps which are likely to obstruct views. Any proposed mitigation planting would further obstruct views.

Battery Storage

7.3.6 Battery storage tends to consist of low elements which are unlikely to completely obstruct views. Mitigation planting associated with a battery storage facility could however reduce views across the landscape. Battery storage may be visible in views from Norwich, particularly if it is located on the valley-side.

Overhead power lines

7.3.7 An overhead power line would detract from existing views but would not obstruct them per se.

Underground cable routes

7.3.8 An underground cable route would not obstruct views to or from Norwich.

Substations

7.3.9 Substations represent large developments with moderately tall structures which could potentially obstruct views to or from the city. Any proposed mitigation planting is likely to obstruct views.

7.4 Undeveloped Approaches to Norwich

7.4.1 Policy DM 4.6 notes:

> *All development proposals on the approaches to defined Gateways (shown on the Proposal Map) shall reinforce and avoid undermining the significance of these Gateways as the visual points of the landscape and townscape change marking the 'arrival' at and 'departure' from the city of Norwich.*

7.4.2 Policy DM 4.6 notes:

> *All development proposals within the visual zone of influence viewed from the identified Undeveloped Approaches to Norwich should reinforce and avoid undermining the rural character of the Undeveloped Approaches to Norwich.*

7.4.3 The supporting text notes [para 4.60]:

> *There are several road and rail corridors approaching the city that have a very distinctive rural character and that afford views across the surrounding countryside and to Norwich. These Undeveloped Approaches are defined on the Proposal Map (and Map DM 4.6) as the full breadth of these transport corridors, but the Policy will ensure all development within the wider zone of visual influence visible from the transport corridors is designed to reinforce*

and avoid undermining the rural character experienced when travelling along the Undeveloped Approaches into Norwich.

Considerations for the LSS

7.4.4 The following paragraphs provide commentary on how the various development scenarios identified at Section 4 would accord with the objective of the undeveloped approaches.

Solar PV

7.4.5 Although Solar PV preserves the existing soils and vegetation cover beneath the panels it nonetheless represents a form of development. Whilst it might be possible to screen Solar PV from the undeveloped approaches this would not be within the spirit of maintaining a genuinely undeveloped approach.

AD plants

7.4.6 AD plants include large structures and clamps and are not compatible with the aims of the policy.

Battery Storage

7.4.7 Battery Storage represents a utilitarian form of development which is not compatible with the aims of the policy.

Overhead power lines

7.4.8 Overhead powerlines increase the sense of human influence and are a form of development. It is considered that new Overhead powerlines would have an adverse effect on the undeveloped approaches.

Underground cable routes

7.4.9 Underground cable routes would have no perceived effect on the undeveloped approaches.

Substations

7.4.10 A substation would have a substantial negative effect on the undeveloped approaches. Whilst it may be possible to screen a substation with planting this would not be within the spirit of maintaining a genuinely undeveloped approach to the city.

7.5 Gateways

7.5.1 Policy DM 4.6 notes:

7.5.2 All development proposals on the approaches to defined Gateways (shown on the Proposal Map) shall reinforce and avoid undermining the significance of these Gateways as the visual points of the landscape and townscape change marking the ‘arrival’ at and ‘departure’ from the city of Norwich.

7.5.3 The supporting text notes [para 4.61]:

In line with the Joint Core Strategy the submitted Norwich Local Plan has identified important Gateways where the landscape and townscape changes, marking the 'arrival' into Norwich urban area. South Norfolk Council has similarly identified three such points within the district.

Considerations for the LSS

7.5.4 The following paragraphs provide commentary on how the various development scenarios identified at Section 4 would accord with the objective of the gateways.

Solar PV

7.5.5 The gateways mark the transition from the countryside to the city. Development which alters the character of the countryside will similarly affect the character of the gateway and alter the sense of arrival. Solar PV is not particularly typical of the town or the countryside, and in this sense has a character of its own. Although Solar PV would not be perceived as an extension of the urban area it would have an adverse influence on the landscape setting of the city, which would make the gateway less effective.

AD plants

7.5.6 Farm-scale AD plants which are related to an existing farm would be seen as part of the countryside and would not therefore affect the gateway, which represents the transition from the rural area to the city.

7.5.7 Larger AD Plants clearly have a developed character which would compromise the landscape setting of the city, and the experience of the gateway. AD plants might be separated from the urban area itself, but would be seen as a type of urban fringe development which would create a poor entrance to the city.

Battery Storage

7.5.8 Battery storage installations have a developed, utilitarian character in common with other types of infrastructure. Battery storage would have a negative effect on the landscape setting of Norwich and the sense of transition which is represented by the gateway. Battery storage may however consist of lower elements which have some potential for screening.

Overhead power lines

7.5.9 Overhead powerlines are not seen as a form of urban development and would not alter the position of the gateway. Whilst overhead powerlines could alter the character of the countryside they would not affect the gateway as such.

Underground cable routes

7.5.10 Underground cable routes would not have any material effect on the gateways.

Substations

7.5.11 Grid and main substations are typically found on the edges of settlements and may be separated from the urban area (due to noise). The substations themselves include taller structures and security fencing and are urbanising features within the landscape. Substations therefore are likely to compromise the clean transition between the countryside and the urban area which is represented by the gateways. Substations offer limited opportunities for mitigation but could be screened with substantial planting.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 2
Criteria for assessing Susceptibilty to Change

November 2025

thelandscapepartnership

Table 1: Indicators and higher and lower susceptibility

Landscape attribute	Lower susceptibility	Medium susceptibility	Higher susceptibility
Scale	• Vast or larger-scale landscapes • Larger scale field patterns • Larger scale elements within landscape	• Intermediary or varied sense of scale	• Intimate and intricate landscapes • Small-scale field patterns • Small-scale landscape elements
Sense of enclosure	• Landscapes enclosed with large-scale elements such as woodland or plantation belts and/or by topographic variation	• Intermediary or varied sense of enclosure	• Landscapes open with only a few boundary features or woodland/tree cover and no topographical variation
Landform	• Simple landform e.g. wide plain or plateau	• Undulating landform • Plateau edges	• Irregular, complex or distinctive landform e.g. hills and ridges, steep slopes, narrow valleys
Field pattern	• Simple, regular, uniform or planned field pattern suggesting mainly modern origin • 20th century enclosures • Large fields with weak hedgerows	• Mixed field patterns • Medium-sized fields	• Irregular field pattern mainly of ancient origin • Small-scale fields with intact hedgerows
Landcover	• Large areas of urban, industrial/commercial, brownfield landscape or previously developed land • Substantial areas of settlement	• Arable farmland	• Complex, mosaic landcover pattern • Large areas of natural or semi-natural landcover in the form of woodlands, extensive tree cover or/and permanent pasture • Limited areas of settlement such as villages and small hamlets • Historic landscapes, e.g. parkland
Settlement pattern and human influence	• Modern settlement pattern • Developed character with modern elements such as larger roads, airfields, railways, industrial estates, housing estates, caravan parks, pylons or commercial greenhouses • Presence of major transmission infrastructure (including substations) • Prominent urban edges within or beyond the LCA • General absence of historic features		• Stronger sense of historic settlement pattern, which relates to the landscape e.g. to a river or a green, or forms part of the historic fabric of the landscape e.g. halls and churches, farms, hamlets, villages • Historic features, e.g. halls, moats, medieval churches, ponds, hundred lanes • Traditional rural land uses • General absence of modern development • Absence of industrial development
Perceptual aspects	• Strong sense of urbanising influences • Higher levels of noise from, e.g. airport, road, quarry or industrial plant • Higher levels of brighter lit landscapes		• Strong sense of rural character • Strong sense of tranquillity and/or solitude • General absence of artificial noise • Limited artificial light sources
Visual characteristics	• Strong sense of urbanising influences • Higher levels of noise from, e.g. airport, road, quarry or industrial plant • Higher levels of brighter lit landscapes	• Presence of typical views across the landscape • Some visual connections to adjacent areas including landforms and historic landscapes	• Presence of important, characteristics and/or promoted views • Strong visual connections to adjacent areas including landforms and historic landscapes
Skylines	• Generally non-prominent skylines • Few important landmark features such as church towers or windmills		• Skylines with prominent and important landmark features such as church towers or windmills • Presence of landmark features
Intactness	• Weak sense of place • Disturbed, fragmented landscape • Poorly maintained or abandoned land		• Strong sense of place • Individual elements in good condition

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 3.1
Landscape Susceptibility Analysis
Solar PV development

November 2025

thelandscapepartnership

LT A: Rural River Valleys

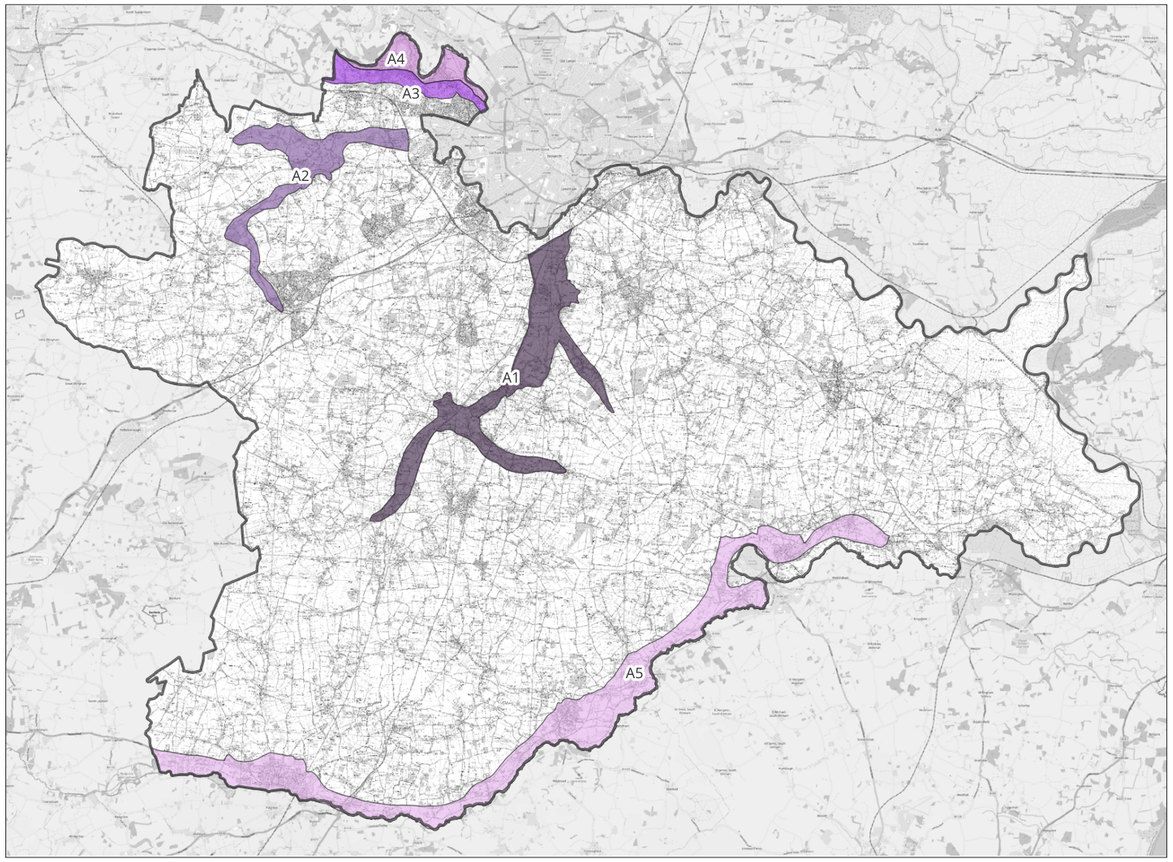
The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

Five rural river valleys have been identified within South Norfolk. These are: the broad valley of the River Waveney in the south of the district, the narrower valleys of the Tud and Wensum, west of Norwich, the meandering upper reaches of the River Yare/Tiffey south west of Norwich, and the distinctive Tas Valley to the south of Norwich.

The boundary of this landscape type is defined primarily by topography and corresponds with the upper crest of the valley side, which generally occurs below the 30m AOD contour. Occasionally, the perceived boundary has been affected by cultural features which have transgressed this natural boundary to either extend or reduce the influence of the valley-form character, for example in the valley of the Waveney where the settlements have grown up as an integral part of the valley landscape, although now extend beyond the natural valley line.

Key characteristics

- Distinct valley landform created by glacial and fluvial activity, with wide flat valley floodplains, which create important divisions within the district landscape.
- Semi-enclosed landscape with long views within the valley but restricted views from the valley, creating occasional areas of more intimate character.
- Perceived presence of a river that is often not actually visible within the landscape but which at close-range is seen to be attractive, of significant size and distinct character.
- Willow pollards and lines of poplar flanking ditches and watercourses on the valley floor, plus reeds and marsh in areas.
- Attractive river crossings including fords and old bridges approached by sunken lanes.
- Areas of pastoral floodplain predominantly grazed by cattle, set within the arable landscape that occupies the valley sides.
- Historic quality to areas within the valley landscape due to the presence of visual reminders of the valleys' settled past, particularly the earthworks at Venta Icenorum, watermills, historic river crossings and round-towered churches.
- Settlements predominantly small and nucleated of strong vernacular character with scattered farmsteads on the valley floor or linear settlements at the valley side crest, with a few large towns of 'market town' quality distinct to the Waveney.
- Characteristic vernacular architecture particularly including red brick and Dutch gable ends, windmills, weather-boarded watermills and round towered churches.
- Presence of characteristic ecological assemblages, uncommon or unfound elsewhere in the district, including wetland vegetation, heathland and wet meadows/ pastures.



The individual character areas within this type are listed below:

- A1: Tas Rural River Valley
- A2: Yare/Tiffey Rural River Valley
- A3: Tud Rural River Valley
- A4: Wensum Rural River Valley
- A5: Waveney Rural River Valley

LT A: Rural River Valleys - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
Scale • The South Norfolk river valleys (except for the Waveney) are small in scale, with intricate topography. The Waveney is a broad shallow valley with simpler topography.	**LCA A1, A2, A3, A4: Medium-High** **LCA A5: Medium** • Small-scale landscapes are considered more sensitive. • Solar PV would sit uncomfortably within the small-scale landscape of the South Norfolk river valleys.	**LCA A1, A2, A3, A4: High** **LCA A5: Medium** • It is very unlikely that development of this scale could be accommodated within the small-scale valleys.	**LCA A1, A2, A3, A4: High** **LCA A5: Medium** • It is very unlikely that development of this scale could be accommodated within the small-scale valleys.	**LCA A1, A2, A3, A4: High** **LCA A5: Medium** • It is very unlikely that development of this scale could be accommodated within the small-scale valleys.
Sense of enclosure • A semi-enclosed landscape with some long views within the valleys but restricted views out. Areas of more intimate character on the valley floor. • Some river valleys less enclosed than others, the Waveney for example is a wide valley which has a more open character.	**Medium** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges. • Localised enclosure by trees and woodland may reduce susceptibility to development. • Enclosure varies with some open meadow landscapes, but judged as moderate overall.	**Medium-High** • Larger schemes are less likely to be contained by existing vegetation so susceptibility is higher.	**Medium-High** • Larger schemes are less likely to be contained by existing vegetation so susceptibility is higher.	**Medium-High** • Larger schemes are less likely to be contained by existing vegetation so susceptibility is higher.
Landform • Distinct valley landform created by glacial and fluvial activity with distinct floodplain and shallow valley sides.	**High** • Valley sides have high susceptibility to Solar PV arrays as they are likely to be visible and would be difficult to screen. • The sinuous landforms of the river valleys are not generally compatible with solar arrays.	**High** • Valley sides have high susceptibility to Solar PV arrays as they are likely to be visible and would be difficult to screen. • The sinuous landforms of the river valleys are not generally compatible with solar arrays.	**High** • Valley sides have high susceptibility to Solar PV arrays as they are likely to be visible and would be difficult to screen. • The sinuous landforms of the river valleys are not generally compatible with solar arrays.	**High** • Valley sides have high susceptibility to Solar PV arrays as they are likely to be visible and would be difficult to screen. • The sinuous landforms of the river valleys are not generally compatible with solar arrays.

LT A: Rural River Valleys - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
Field pattern **A1- Tas** • Meadows and fens, some surviving unenclosed land e.g. at Shotesham and Flordon. • 19th century enclosure at Tasburgh along with earlier enclosures. **A2 – Yare Tiffey** • Narrow floodplain meadows. Some C19 enclosure of meadows. • Meadows defined by dykes. • Small scale field pattern within floodplain. **A3 – Tud** • Narrow floodplain meadows. • Rationalised early enclosures on valley-side. **A4 – Wensum** • Small organic and regular enclosures bound by dykes in the vicinity of Costessey. • Large, regular enclosures on valley-side. **A5 – Waveney** • 19th century enclosure awards, with some earlier enclosure. • Fields defined by dykes rather than hedges. • Mixture of organic field patterns and regular field patterns reflecting history of enclosure.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character.

LT A: Rural River Valleys - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
Landcover • Distinctive land cover: small-scale field pattern and prevalence of grazed pastures on the valley floor, with mix of arable and pasture on the valley sides, creating a complex landcover pattern. • Characteristic ecological assemblages – reeds and marsh, wet meadows/ pastures, woodland plus areas of heathland. High ecological value recognised in designations (SAC/SSSIs). • Willow pollards and lines of poplar flank ditches and watercourses. • Some areas of active mineral working and open water associated with mineral extraction sites, for example in A3: Tud and A4: Wensum valleys. • The Tas Valley features two historic parks, an iron age hillfort at Tasburgh, and a Roman colony at Venta Icenorum.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be incompatible with this type of development.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be incompatible with this type of development.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be incompatible with this type of development.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be incompatible with this type of development.
Settlement pattern and human influence • Valleys have historically been a focus for settlement and the valleys contain some historic villages. • The floodplain however tends not to be settled, except for occasional mills. • Settlements predominantly small and nucleated of strong vernacular character. Isolated farms are present on the edges of the floodplain. • The Waveney Valley is generally rural but the area around Diss is more urbanised.	**Medium-High** • Frequent small villages and narrow country lanes create a complex settlement pattern which is susceptible to change. • Solar PV arrays could detract from historic features such as church towers or villages.	**High** • Frequent small villages and narrow country lanes create a complex settlement pattern which is susceptible to change. • Solar PV arrays could detract from historic features such as church towers or villages and would dilute the strong vernacular character.	**High** • Frequent small villages and narrow country lanes create a complex settlement pattern which is susceptible to change. • Solar PV arrays could detract from historic features such as church towers or villages and would dilute the strong vernacular character.	**High** • Frequent small villages and narrow country lanes create a complex settlement pattern which is susceptible to change. • Solar PV arrays could detract from historic features such as church towers or villages and would dilute the strong vernacular character.
Perceptual aspects • The river valleys are typically settled, but for the most part this consists of small rural villages, often with historic character recognised through Conservation Area designations, connected by minor roads. • The generally quiet character and low density of settlement contribute to the perception of an intimate, tranquil rural landscape within the River Valleys. • Tranquillity is reduced in the Waveney Valley by the A1066 and the A143. • Tranquillity is also reduced in the middle section of the Yare Valley by the A47.	**LCA A1, A2, A3, A4: Medium-High** **LCA A5: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the river valleys. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.	**LCA A1, A2, A3, A4: Medium-High** **LCA A5: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the river valleys. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.	**LCA A1, A2, A3, A4: Medium-High** **LCA A5: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the river valleys. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.	**LCA A1, A2, A3, A4: Medium-High** **LCA A5: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the river valleys. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.

LT A: Rural River Valleys - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
Visual characteristics • Views within the valleys vary from long range and open to some more enclosed, confined views. • Views frequently include landmark features. • Views into adjacent landscapes are for the most part restricted by the ridges marking the limits of the valleys. There are some views into the valleys from the surrounding higher land. • Key views from Waveney Valley into The Broads	**Medium-High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. This scenic quality increases susceptibility to development. • Views from the Waveney Valley into The Broads increases its sensitivity.	**High** • Development of this scale would be more difficult to accommodate without compromising the visual characteristics of the valleys, so the susceptibility is judged to be higher. • Views from the Waveney Valley into The Broads increases its sensitivity.	**High** • Development of this scale would be more difficult to accommodate without compromising the visual characteristics of the valleys, so the susceptibility is judged to be higher. • Views from the Waveney Valley into The Broads increases its sensitivity.	**High** • Development of this scale would be more difficult to accommodate without compromising the visual characteristics of the valleys, so the susceptibility is judged to be higher. • Views from the Waveney Valley into The Broads increases its sensitivity.
Skylines • The valley crests form a skyline in views from the valley floor marking the transition to the adjacent landscape type. • In A5: Waveney Valley- a series of churches on the ridgeline form a prominent landmark. • Skyline is usually undeveloped creating a rural context. • Woodland along the valley crest is a key feature of A3: Tud River Valley.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as valley crests forming skylines, and churches on the ridgeline.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as valley crests forming skylines, and churches on the ridgeline.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as valley crests forming skylines, and churches on the ridgeline.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as valley crests forming skylines, and churches on the ridgeline.

LT A: Rural River Valleys - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
Intactness • Ditches, fens, meadows, riparian vegetation and vernacular buildings create a sense of place. • The Tas Valley has an intact character. Small villages are present just above the floodplain. The character is somewhat influenced by nearby pylons, railway and A-road. • The Yare and Tiffey Valleys have an intact rural character with meadows, wet woodland, and historic parkland. Small villages are also present just above the floodplain. A tranquil character away from the A47, and a strong sense of place. • The Tud Valley is largely undeveloped and the historic pattern is still legible, however the A47 cuts through the pre-existing landscape pattern and weakens the sense of character. The eastern portion of the valley is found within an increasingly urban context. The land use here has changed with the introduction of a golf course at Costessey Park, and paddocks. • The Wensum Valley is partially disturbed by flooded mineral workings in the base of the valley. The valley is largely undeveloped. • The Waveney Valley is undeveloped and largely rural except around Diss. Pattern of meadows, fens and carrs remains intact throughout most of the area. Tranquillity is reduced by the A143, but there is a relatively strong sense of place.	**Medium-High** • Whilst the landscapes are settled Solar PV is different in character from the exiting development, which is rural in nature. • Intact rural landscapes are highly sensitive to development including Solar PV. • The strong sense of place is vulnerable to dilution from Solar PV (which consists of generic features).	**High** • Intact rural landscapes are highly sensitive to development including Solar PV. • The strong sense of place is vulnerable to dilution from Solar PV (which consists of generic features). • Development of this scale would affect the intactness of the river valley landscapes.	**High** • Development of this scale would have a profound effect on the intactness of the river valleys.	**High** • Development of this scale would have a profound effect on the intactness of the river valleys.

LT A: Rural River Valleys - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
LCA A1: Tas Rural River Valley	**Medium-High** • The existing characteristics of the Tas Rural River Valley are considered to be sensitive to development of this type. The undeveloped floodplain is sensitive to development of all types, while placing solar panels on the valley-side would increase their prominence, which would represent poor design.	**High** • The existing characteristics of the Tas Rural River Valley are considered highly sensitive to development of this scale. The narrow and intimate valley has limited space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Tas Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Tas Rural River Valley are considered highly sensitive to development of this scale. The narrow and intimate valley has limited space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Tas Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Tas Rural River Valley are considered highly sensitive to development of this scale. The narrow and intimate valley has limited space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Tas Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.
LCA A2: Yare/Tiffey Rural River Valley	**Medium-High** • The existing characteristics of the Yare/ Tiffey Rural River Valley are considered to be sensitive to development of this type. The undeveloped floodplain is sensitive to development of all types, while placing solar panels on the valley-side would increase their prominence, which would represent poor design.	**High** • The existing characteristics of the Yare/ Tiffey Rural River Valley are considered highly sensitive to development of this scale. The small valleys have little space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Yare/Tiffey Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Yare/ Tiffey Rural River Valley are considered highly sensitive to development of this scale. The small valleys have little space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Yare/Tiffey Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Yare/ Tiffey Rural River Valley are considered highly sensitive to development of this scale. The small valleys have little space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Yare/Tiffey Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.
LCA A3: Tud Rural River Valley	**Medium-High** • The existing characteristics of the Tud Rural River Valley are considered to be sensitive to development of this type. The undeveloped floodplain is sensitive to development of all types, while placing solar panels on the valley-side would increase their prominence, which would represent poor design.	**High** • The existing characteristics of the Tud Rural River Valley are considered highly sensitive to development of this scale. The narrow and intimate valley has little space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Tud Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Tud Rural River Valley are considered highly sensitive to development of this scale. The narrow and intimate valley has little space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Tud Rural River Valley. The sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Tud Rural River Valley are considered highly sensitive to development of this scale. The narrow and intimate valley has little space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Tud Rural River Valley. The sense of place is vulnerable to Solar PV, which is composed of generic elements.

LT A: Rural River Valleys - susceptibility to Solar PV development

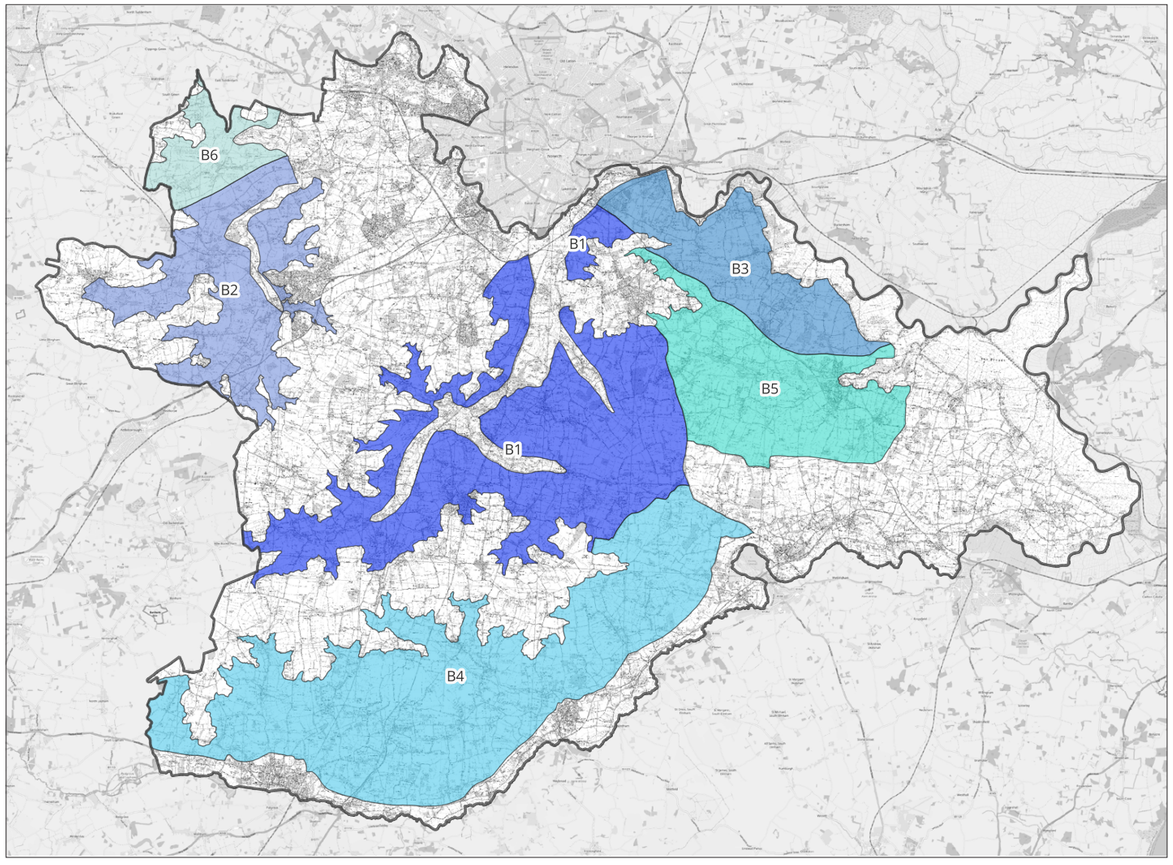
Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large-scale Solar PV development (over 50MW)
LCA A4: **Wensum Rural River Valley**	**Medium-High** • The existing characteristics of the Wensum Rural River Valley are considered to be sensitive to development of this type. The undeveloped floodplain is sensitive to development of all types, while placing solar panels on the valley-side would increase their prominence, which would represent poor design.	**High** • The existing characteristics of the Wensum Rural River Valley are considered highly sensitive to development of this scale. The valley has limited space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Wensum Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Wensum Rural River Valley are considered highly sensitive to development of this scale. The valley has limited space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Wensum Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Wensum Rural River Valley are considered highly sensitive to development of this scale. The valley has limited space to accommodate development, and the organic landform is unsuited to solar arrays. Development of this scale would fundamentally alter the characteristics of the Wensum Rural River Valley. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.
LCA A5: **Waveney Rural River Valley**	**Medium-High** • The existing characteristics of the Waveney Rural River Valley are considered to be sensitive to development of this type. The undeveloped floodplain is sensitive to development of all types, while placing solar panels on the valley-side would increase their prominence, which would represent poor design.	**High** • The existing characteristics of the Waveney Rural River Valley are considered highly sensitive to development of this scale. The Waveney Valley is characterised by floodplain meadows and fens, and development of this scale would alter its character at a fundamental level. Priority habitats are incompatible with Solar PV. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Waveney Rural River Valley are considered highly sensitive to development of this scale. The Waveney Valley is characterised by floodplain meadows and fens, and development of this scale would alter its character at a fundamental level. Priority habitats are incompatible with Solar PV. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.	**High** • The existing characteristics of the Waveney Rural River Valley are considered highly sensitive to development of this scale. The Waveney Valley is characterised by floodplain meadows and fens, and development of this scale would alter its character at a fundamental level. Priority habitats are incompatible with Solar PV. The strong sense of place is vulnerable to Solar PV, which is composed of generic elements.

LT B: Tributary Farmland

The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole of the district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD.

Key characteristics

- Shelving and gently undulating landform created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.
- Tamed and peaceful farmland with scattered small farm woodlands creating a quiet rural landscape.
- Dispersed but evenly distributed settlement pattern of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.
- An intricate network of narrow, winding rural lanes often bounded by banks or ditches with a sense of impenetrability.
- Tributaries elusive- evident but usually hidden within the landscape by topography or trees.
- Medium to large-scale arable farmland of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.
- Remnant parkland, which sometimes relates to former deer parks, plus areas of common land.
- Mixed architectural character comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.
- High proportion of important ecological assemblages protected as SSSIs including woodland, and wetland habitats.



The individual character areas within this type are listed below:

- B1: Tas Tributary Farmland
- B2: Tiffey Tributary Farmland
- B3: Rockland Tributary Farmland
- B4: Waveney Tributary Farmland
- B5: Chet Tributary Farmland
- B6: Yare Tributary Farmland

LT B: Tributary Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Scale • Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views. • Contrasting sense of enclosure from small scale and enclosed in the wooded valleys to wider, more open areas across large arable fields on higher ground.	**Medium-Low** • Fields are generally of a medium to large size which reduces susceptibility to large scale developments such as solar PV. However there is variation in both size and shape resulting in an intricate, small-scale landscape pattern in places.	**Medium-Low** • Fields are generally of a medium to large size which reduces susceptibility to large scale developments such as solar PV. However there is variation in both size and shape resulting in an intricate, small-scale landscape pattern in places.	**Medium** • Fields are generally of a medium to large size which reduces susceptibility to large scale developments such as solar PV. However there is variation in both size and shape resulting in an intricate, small-scale landscape pattern in places. In addition, the presence of villages, narrow lanes, halls and farmsteads introduces human scale elements which increase susceptibility to larger developments.	**Medium** • Fields are generally of a medium to large size which reduces susceptibility to large scale developments such as solar PV. However there is variation in both size and shape resulting in an intricate, small-scale landscape pattern in places. In addition, the presence of villages, narrow lanes, halls and farmsteads introduces human scale elements which increase susceptibility to larger developments
Sense of enclosure • Woodland blocks impart a semi-wooded, semi-enclosed character to much of the area. • Valley landforms offers opportunity for longer views.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium-High** • Semi-enclosed landscape is moderately sensitive to development. • Developments of this scale are less likely to be enclosed by vegetation, so susceptibility is higher.	**Medium-High** • Semi-enclosed landscape is moderately sensitive to development. • Developments of this scale are less likely to be enclosed by vegetation, so susceptibility is higher.
Landform • Varied landform from flat to gently undulating, sloping towards tributary valleys. • Minor stream valleys cut through the glacial till to create a landscape of restrained variety.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.

LT B: Tributary Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Field pattern **B1 - Tas Tributary Farmland** • Early rectilinear field patterns across much of the area. • Planned enclosures of former greens and heaths prior to the C18 creating semi-regular field pattern. • Common arable fields in Forncett St Mary visible on tithe map. • Late enclosure of fens, for example at Hingham • Some unenclosed meadows/fen. • Widespread hedgerow loss means that most fields are now classified as 20th century enclosures. **B2 – Tiffey** • Mix of field patterns. Some irregular, presumably early enclosures. • Late enclosures at Spooner Row and Barnham Broom. • Medieval deer parks at Kimberley and Oxehaghe. • Small area of unenclosed meadow at Coston. • Widespread hedgerow loss means that most fields are now classified as 20th century enclosures. **B3 – Rockland** • Mix of organic field patterns, suggesting early enclosure, and rectilinear field patterns, suggesting late enclosure. • Late enclosures of marshland and heathland in Kirby Bedon and Surlingham. • Sinuous field boundaries in Ashby St Mary suggest enclosure from common field. **B4 – Waveney Tributary Farmland** • Early rectilinear field patterns e.g. at Alburgh and Denton. • Ancient, irregular enclosures across much of the area. • Sinuous enclosures from open fields in Denton. • Considerable hedgerow loss. **B5 – Chet** • Early rectilinear field systems e.g. at Seething. Medieval open fields possibly based on earlier field system. • Late enclosure of Yelverton Heath.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved.

LT B: Tributary Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Landcover • Varied pattern from small scale, intricate networks of fields/hedgerows in tributary valleys and around settlements to large, open fields on higher ground. • An intricate network of narrow, winding lanes often bounded by ditches. • Elusive tributaries, evident but usually hidden within the landscape by topography or trees. • Medium to large-scale arable fields enclosed by sparse hedges with hedgerow trees. Permanent pasture and woodland found within valleys. • Remnant parkland which sometimes relates to former deer parks, plus areas of common land. • High proportion of important assemblages protected as SSSIs including woodland and wetland habitat.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with Solar PV development.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with Solar PV development.	**Medium-High** • Arable farmland is a resource in its own right and there is therefore higher susceptibility to this scale of development. • Landcover is more sensitive to this scale of development as it would be more extensive and could alter the perceptions of typical landcover.	**Medium-High** • Arable farmland is a resource in its own right and there is therefore higher susceptibility to this scale of development. • Landcover is more sensitive to this scale of development as it would be more extensive and could alter the perceptions of typical landcover.
Settlement pattern and human influence • Dispersed settlement pattern of small villages, hamlets, farmsteads and manors distributed across the landscape. Occasional large agricultural buildings e.g. poultry sheds • Compact villages sheltered within small valleys. • Mixed architectural character comprising modern bungalow development and vernacular architecture with stepped gable ends and other vernacular characteristics. Local building materials such as brick and flint. • Isolated churches. Locally distinctive round towered churches e.g. St Michael's Aslacton • The Chet Tributary Farmland contains the small town of Loddon.	**LCA B1, B3, B4, B5: Medium-High** **LCA B2: Medium** • The historic settlement pattern is still evident with only modest recent expansion. • The existing dispersed settlement pattern is susceptible to change. • Within B2 the A11 introduces a modern element which reduces local susceptibility. • Existing pylons introduce more human influence in places, which reduces the local susceptibility.	**LCA B1, B3, B4, B5: Medium-High** **LCA B2: Medium** • The historic settlement pattern is still evident with only modest recent expansion. • The existing dispersed settlement pattern is susceptible to change. • Within B2 the A11 introduces a modern element which reduces local susceptibility. • Existing pylons introduce more human influence in places, which reduces the local susceptibility.	**LCA B1, B3, B4, B5: High** **LCA B2: Medium-High** • The historic settlement pattern is still evident with only modest recent expansion. • The existing dispersed settlement pattern is susceptible to change. • Within B2 the A11 introduces a modern element which reduces local susceptibility. • Existing pylons introduce more human influence in places, which reduces the local susceptibility.	**LCA B1, B3, B4, B5: High** **LCA B2: Medium-High** • The historic settlement pattern is still evident with only modest recent expansion. • The existing dispersed settlement pattern is susceptible to change. • Within B2 the A11 introduces a modern element which reduces local susceptibility. • Existing pylons introduce more human influence in places, which reduces the local susceptibility.

LT B: Tributary Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Perceptual aspects • For the most part the landscape is peaceful, rural and tranquil. • Roads introduce a local source of movement within the landscape.	**LCA B1, B3, B4, B5: Medium-High** **B2: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the tributary farmland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment. • Within B2 the A11 introduces a source of noise and movement which reduces susceptibility.	**LCA B1, B3, B4, B5: Medium-High** **B2: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the tributary farmland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment. • Within B2 the A11 introduces a source of noise and movement which reduces susceptibility.	**LCA B1, B3, B4, B5: Medium-High** **B2: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the tributary farmland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment. • Within B2 the A11 introduces a source of noise and movement which reduces susceptibility.	**LCA B1, B3, B4, B5: Medium-High** **B2: Medium** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the tributary farmland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment. • Within B2 the A11 introduces a source of noise and movement which reduces susceptibility.
Visual characteristics • Transitional landscape occupying the mid ground between the plateaux and the main river valleys, providing opportunities for long and framed views. • Within these landscapes views are across arable fields to sloping valley sides and down to small-scale wooded tributary valleys. • Framed and open, long-ranging views across the countryside. • Large agricultural buildings can be visually prominent. • Pylons and poles interrupt the landscape wherever they are present, notably towards the northern part of the district. • Important views to landmarks such as Wymondham Abbey and Wicklewood Windmill that provide a sense of place. • Elements of vernacular interest that include round-towered churches. • Generally undeveloped skylines. • Strong visual influence of the adjoining Broads in character areas B3 and B5. • Visual influence of Norwich in character areas B1 and B3.	**Medium** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • The landscape is less sensitive to solar PV than to other forms of development as solar PV consists of low elements.	**Medium-High** • Development of this scale is more likely to be noticeable within the landscape which indicates a higher susceptibility to this scale of development.	**Medium-High** • Development of this scale is more likely to be noticeable within the landscape which indicates a higher susceptibility to this scale of development.	**Medium-High** • Development of this scale is more likely to be noticeable within the landscape which indicates a higher susceptibility to this scale of development.
Skylines • The skyline varies across the landscape type from clear to interrupted by woodland blocks and undulations in landform. • In the enclosed tributary valleys the skyline can include prominent valley crests.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as prominent valley crests.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as prominent valley crests.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as prominent valley crests.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as prominent valley crests.

LT B: Tributary Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Intactness • Some roads have been modernised and there has been some modest expansion of settlements. Changing agricultural practices have led to a simplification of the landscape pattern and the loss of some landscape features. The historic pattern is nonetheless legible, and there are relatively few modern elements. The rural character of the area is intact, and there is a moderately strong sense of place.	**Varying from Medium to Medium-High** • The introduction of Solar PV would have a negative effect on the intact rural landscape. This type of development would fragment the existing pattern of rural land uses. • Solar PV also consists of standard components which would tend to dilute the sense of place. Whilst planting could be locally appropriate the development itself would not contribute to local identity. • Within B2 the A11 introduces a modern element which reduces the intactness of the landscape.	**Varying from Medium to Medium-High** • The introduction of Solar PV would have a negative effect on the intact rural landscape. This type of development would fragment the existing pattern of rural land uses. • Solar PV also consists of standard components which would tend to dilute the sense of place. Whilst planting could be locally appropriate the development itself would not contribute to local identity. • Within B2 the A11 introduces a modern element which reduces the intactness of the landscape.	**Varying from Medium-High to High** • Development of this scale would have a more profound effect on sense of place by introducing standard elements across a wide area. • The existing rural character would also be more fundamentally altered by this scale of development.	**Varying from Medium-High to High** • Development of this scale would have a more profound effect on sense of place by introducing standard elements across a wide area. • The existing rural character would also be more fundamentally altered by this scale of development.

LT B: Tributary Farmland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large solar PV development (over 50MW)
LCA B1: Tas Tributary Farmland	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Tas Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the predominantly open character of the landscape. The farmed character of the Tas Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Tas Tributary Farmlands are susceptible to this type of development, especially where there are views to heritage assets such as Venta Icenorum, or to Norwich.	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Tas Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the predominantly open character of the landscape. The farmed character of the Tas Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Tas Tributary Farmlands are susceptible to this type of development, especially where there are views to heritage assets such as Venta Icenorum, or to Norwich.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Tas Tributary Farmlands. • Whilst it might be possible to screen solar panels with planting development of this scale would have an extensive effect on the landscape, and mitigation planting is also likely to alter the predominantly open character of the landscape. The Tas Tributary Farmlands display a rural, farmed character. The changes to land use and to the visual experience of the landscape would alter its fundamental character, so susceptibility is assessed as Medium-High.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Tas Tributary Farmlands. • Whilst it might be possible to screen solar panels with planting development of this scale would have an extensive effect on the landscape, and mitigation planting is also likely to alter the predominantly open character of the landscape. The Tas Tributary Farmlands display a rural, farmed character. The changes to land use and to the visual experience of the landscape would alter its fundamental character, so susceptibility is assessed as Medium-High.
LCA B2: Tiffey Tributary Farmland	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Tiffey Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the characteristic framed and long-range views. The farmed character of the Tiffey Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Tiffey Tributary Farmlands are susceptible to this type of development, especially where there are views to local landmarks including Wymondham Abbey and Wicklewood Windmill.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Tiffey Tributary Farmlands. Whilst it might be possible to screen panels with planting this is likely to affect the characteristic framed and long-range views. The farmed character of the Tiffey Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Tiffey Tributary Farmlands are susceptible to this type of development, especially where there are views to local landmarks including Wymondham Abbey and Wicklewood Windmill.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Tiffey Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the characteristic framed and long-range views. The farmed character of the Tiffey Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Tiffey Tributary Farmlands are susceptible to this type of development, especially where there are views to local landmarks including Wymondham Abbey and Wicklewood Windmill. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Tiffey Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the characteristic framed and long-range views. The farmed character of the Tiffey Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Tiffey Tributary Farmlands are susceptible to this type of development, especially where there are views to local landmarks including Wymondham Abbey and Wicklewood Windmill. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.

LT B: Tributary Farmland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large solar PV development (over 50MW)
LCA B3: Rockland Tributary Farmland	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Rockland Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the visual characteristics of the landscape. The farmed character of the Rockland Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Rockland Tributary Farmlands are susceptible to this type of development, especially where there are views to the Yare Valley or to isolated churches.	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Rockland Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the visual characteristics of the landscape. The farmed character of the Rockland Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Rockland Tributary Farmlands are susceptible to this type of development, especially where there are views to the Yare Valley or to isolated churches.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Rockland Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the visual characteristics of the landscape. The farmed character of the Rockland Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Rockland Tributary Farmlands are susceptible to this type of development, especially where there are views to the Yare Valley or to isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently shelving landscape of the Rockland Tributary Farmlands. • Whilst it might be possible to screen panels with planting this is likely to affect the visual characteristics of the landscape. The farmed character of the Rockland Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Rockland Tributary Farmlands are susceptible to this type of development, especially where there are views to the Yare Valley or to isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.
LCA B4: Waveney Tributary Farmland	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Waveney Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Waveney Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Waveney Tributary Farmlands are susceptible to this type of development, especially where there are views to the Broads or to landmark features including round-towered and isolated churches.	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Waveney Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Waveney Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Waveney Tributary Farmlands are susceptible to this type of development, especially where there are views to the Broads or to landmark features including round-towered and isolated churches.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Waveney Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Waveney Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Waveney Tributary Farmlands are susceptible to this type of development, especially where there are views to The Broads or to landmark features such as round-towered or isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Waveney Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Waveney Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Waveney Tributary Farmlands are susceptible to this type of development, especially where there are views to The Broads or to landmark features such as round-towered or isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.

LT B: Tributary Farmland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large solar PV development (over 50MW)
LCA B5: Chet Tributary Farmland	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently sloping landscape of the Chet Tributary Farmlands. • The rural, farmed character of the Chet Tributary Farmlands is sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Chet Tributary Farmlands are susceptible to this type of development, especially where there are views to the Broads or to landmark features such as round-towered and isolated churches.	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently sloping landscape of the Chet Tributary Farmlands. • The rural, farmed character of the Chet Tributary Farmlands is sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Chet Tributary Farmlands are susceptible to this type of development, especially where there are views to the Broads or to landmark features such as round-towered and isolated churches.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently sloping landscape of the Chet Tributary Farmlands. • The rural, farmed character of the Chet Tributary Farmlands is sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Chet Tributary Farmlands are susceptible to this type of development, especially where there are views to the Broads or to landmark features such as round-towered and isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently sloping landscape of the Chet Tributary Farmlands. • The rural, farmed character of the Chet Tributary Farmlands is sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Chet Tributary Farmlands are susceptible to this type of development, especially where there are views to the Broads or to landmark features such as round-towered and isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.
LCA B6: Yare Tributary Farmland	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Yare Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Yare Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Yare Tributary Farmlands are susceptible to this type of development, especially where there are views to landmark features such as round-towered and isolated churches.	**Medium** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Yare Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Yare Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Yare Tributary Farmlands are susceptible to this type of development, especially where there are views to landmark features such as round-towered and isolated churches.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Waveney Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Yare Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Yare Tributary Farmlands are susceptible to this type of development, especially where there are views to landmark features such as round-towered or isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.	**Medium-High** • Solar PV is lower than other forms of development, but could still be visible within the gently undulating landscape of the Waveney Tributary Farmlands. • Whilst it might be possible to screen panels with planting this would alter the open character of the landscape. The farmed character of the Yare Tributary Farmlands is also sensitive to change, irrespective of the proposed mitigation. The key characteristics of the Yare Tributary Farmlands are susceptible to this type of development, especially where there are views to landmark features such as round-towered or isolated churches. • Development of this scale would have a more fundamental effect on character, so susceptibility is assessed as Medium-High.

LT C: Tributary Farmland with Parkland

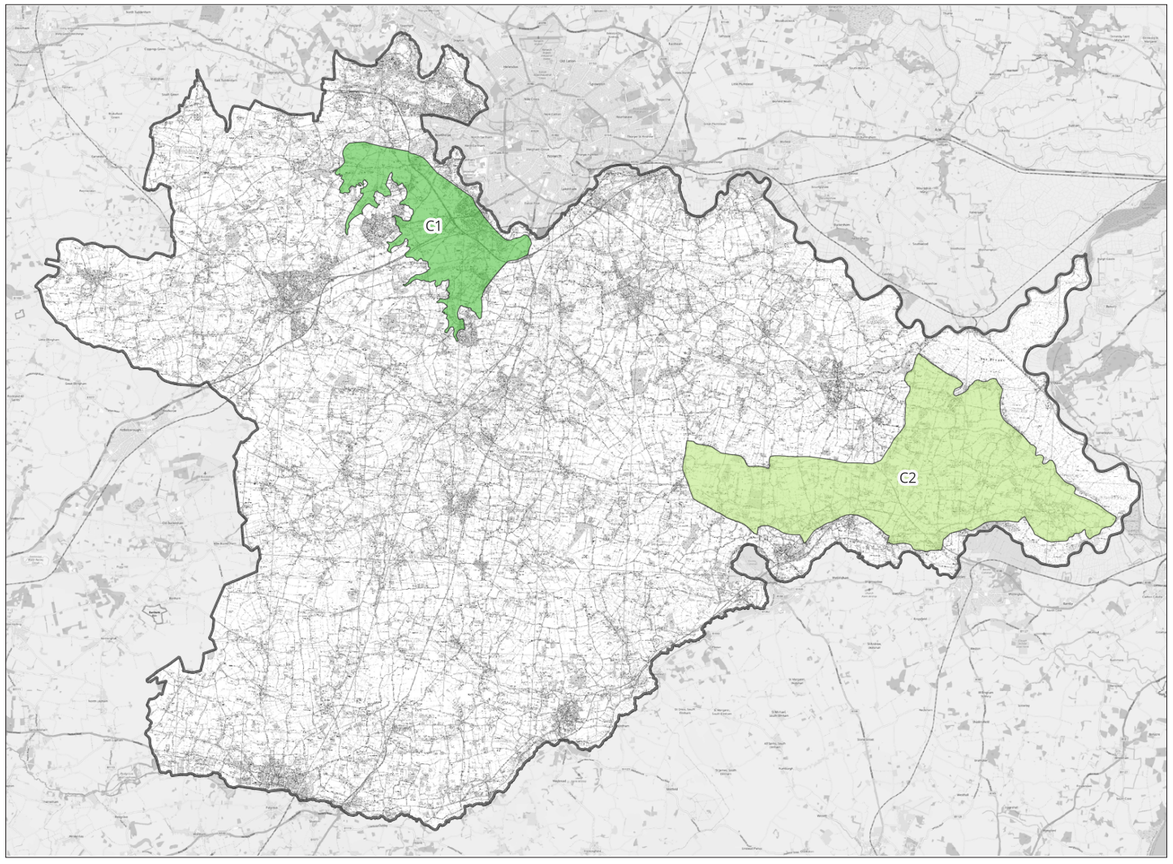
The Tributary Farmland with Parkland Landscape Type occurs in two discrete places, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very distinctive character throughout much of the area.

Key characteristics

- Gently undulating landform created by the presence of small tributary stream valleys which cut through the glacial till landscape providing a sense of restrained variety
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes, providing varied opportunities for long and framed views
- Presence of large parkland estates particularly associated directly with the tributary valleys. Estate railings, prominent gatehouses, boundary fences and tree-lined avenues with areas of pastoral farmland and horse grazing reveal the presence of the wooded parkland in the wider arable landscape.
- Context of tamed and peaceful arable farmland with scattered small farm woodlands, including ancient woodland, and medium to large-scale fields of sugarbeet and cereal surrounded by sparse hedges and hedgerow trees.
- Small fields of more unusual crops such as sunflowers and asparagus bounded by banks of coppiced willow.
- Dispersed but evenly distributed settlement pattern of small farmsteads and small, nucleated villages.
- An intricate network of small rural roads often bounded by banks or ditches with a sense of impenetrability.
- Tributaries visually elusive and often physically inaccessible- rarely evident because they are hidden within the landscape by topography or trees, particularly where they are associated with the parkland which prevents public access to them.
- Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped and Dutch gable ends and brick and flint.
- Isolated flint round towered churches particularly evident.
- Characteristic large detached halls and manor houses, usually constructed of brick and of high architectural quality, associated with the parkland estates. These are frequently screened by woodland, except at close range.

The individual character areas within this type are listed below:

- C1: Yare Tributary Farmland with Parkland
- C2: Thurlton Tributary Farmland with Parkland



LT C: Tributary Farmland with Parkland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Scale • Transitional landscape occupying the midground between the upland plateau and the main river valley landscapes, providing varied opportunities for open and framed views. • Larger scale fields contrast with the more intimate valleys and smaller-scale pastoral areas and villages.	**Medium** • Fields are generally of a medium to large size which reduces susceptibility to large scale developments such as solar PV. However there is variation in both size and shape resulting in an intricate, small-scale landscape pattern in places. In addition, the presence of villages, narrow lanes, halls and farmsteads introduces human scale elements which increase susceptibility to larger developments.	**Medium** • Fields are generally of a medium to large size which reduces susceptibility to large scale developments such as solar PV. However there is variation in both size and shape resulting in an intricate, small-scale landscape pattern in places. In addition, the presence of villages, narrow lanes, halls and farmsteads introduces human scale elements which increase susceptibility to larger developments.	**Medium-High** • A development of this scale would be difficult to accommodate in the gently undulating landscape and is likely to be dominating in terms of scale when contrasted with the existing elements of the landscape.	**Medium-High** • A development of this scale would be difficult to accommodate in the gently undulating landscape and is likely to be dominating in terms of scale when contrasted with the existing elements of the landscape.
Sense of enclosure • Open arable landscape is interrupted by areas of woodland. • Areas of woodland associated with estates provide greater enclosure.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.
Landform • Gently undulating landform created by the presence of small tributary stream valleys which cut through the landscape providing a sense of restrained variety.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.

LT C: Tributary Farmland with Parkland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Field pattern **C1 – Yare** • Irregular enclosures. • Late enclosure e.g. at Little Melton. • Parks. • Unenclosed land at Swardeston Common. **C2 - Thurlton** • Ancient irregular enclosures. • Considerable field amalgamation.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved. • Solar arrays can be accommodated within existing field patterns so susceptibility to this type of development is assessed as Medium-Low.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved. • Solar arrays can be accommodated within existing field patterns so susceptibility to this type of development is assessed as Medium-Low.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved. • Solar arrays can be accommodated within existing field patterns so susceptibility to this type of development is assessed as Medium-Low.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved. • Solar arrays can be accommodated within existing field patterns so susceptibility to this type of development is assessed as Medium-Low.
Landcover • Presence of large parkland estates particularly associated with the tributary valleys. Estate railings, prominent gatehouses, parkland belts, tree-lined avenues and areas of pasture reveal the presence of parkland within the wider arable landscape. • Peaceful arable farmland with small ancient woodlands and scattered coverts with medium to large-scale fields of wheat, barley, oilseed rape and sugarbeet surrounded by sparse hedges and hedgerow trees. • An intricate network of small rural roads. • Becks.	**Varying from Medium to High** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with Solar PV development. • Parklands are likely to feature important old grasslands.	**Varying from Medium to High** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, and parklands display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with Solar PV development. • Parklands are likely to feature important old grasslands.	**Varying from Medium-High to High** • Pre-C18 enclosures, commons, ancient woodland, and parklands display a strong time depth which increases local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with Solar PV development. • Parklands are likely to feature important old grasslands. • Landcover is more sensitive to this scale of development as it would be more extensive and could alter the perceptions of typical landcover.	**Varying from Medium-High to High** • Pre-C18 enclosures, commons, ancient woodland, and parklands display a strong time depth which increases local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with Solar PV development. • Parklands are likely to feature important old grasslands. • Landcover is more sensitive to this scale of development as it would be more extensive and could alter the perceptions of typical landcover
Settlement pattern and human influence • Dispersed but evenly distributed settlement with a pattern of farmsteads and small villages. • Sparse settlement pattern across C2. C1 Yare Tributary Farmland somewhat more settled with larger village of Cringleford as well as Norfolk & Norwich Hospital and A47. • Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped gables and brick and flint. • Vernacular architectural character, predominantly of rural buildings and estate dwellings. More modern dwellings are found in larger villages.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The sparse settlement pattern of C2 is susceptible to change. • C1 is more settled and has overt human influence from pylons and the A47 which reduces the susceptibility to change.	**LCA C1: Medium** **LCA C2: Medium-High** • The sparse settlement pattern of C2 is susceptible to change. • C1 is more settled and has overt human influence from pylons and the A47 which reduces the susceptibility to change. Development of this scale would introduce further human influence. • Solar PV would dilute the vernacular character (where this is present).	**LCA C1: Medium** **LCA C2: Medium-High** • The sparse settlement pattern of C2 is susceptible to change. • C1 is more settled and has overt human influence from pylons and the A47 which reduces the susceptibility to change. Development of this scale would introduce further human influence. • Solar PV would dilute the vernacular character (where this is present).	**LCA C1: Medium** **LCA C2: Medium-High** • The sparse settlement pattern of C2 is susceptible to change. • C1 is more settled and has overt human influence from pylons and the A47 which reduces the susceptibility to change. Development of this scale would introduce further human influence. • Solar PV would dilute the vernacular character (where this is present).

LT C: Tributary Farmland with Parkland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Perceptual aspects • Tamed arable farmland. • C2 is a peaceful rural landscape. C1 is adversely influenced by the Norwich Southern Bypass and the A11. • Pylons and the A47 negate any sense of remoteness within C1. There is however a sense of remoteness within C2, particularly adjacent to The Broads.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the Tributary Farmland with Parkland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the Tributary Farmland with Parkland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the Tributary Farmland with Parkland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The sense of rural tranquillity increases susceptibility to all development types, including Solar PV. • Development would adversely influence the rural qualities of the Tributary Farmland with Parkland. • Noise from inverters/transformers would have an adverse effect on the peaceful rural environment.
Visual characteristics • Views to wide open horizons and long views across denuded hedgerow boundaries and arable farmland from higher areas. • Prominent views to historic features such as isolated and round-towered churches. • Views framed and broken by woodland blocks and estate parkland with large manor buildings. • Intermittent, long views into The Broads from C2. • Views to Norwich in particular from the southern bypass which bisects C1. • Characteristic large halls though frequently screened by woodland. • Isolated round towered flint churches particularly evident. • Mixed architectural character comprising modern development and vernacular architecture.	**Medium** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • The landscape is less sensitive to solar PV than to other forms of development as solar PV consists of low elements.	**Medium-High** • Development of this scale is more likely to be noticeable within the landscape which indicates a higher susceptibility to this scale of development.	**Medium-High** • Development of this scale is more likely to be noticeable within the landscape which indicates a higher susceptibility to this scale of development.	**Medium-High** • Development of this scale is more likely to be noticeable within the landscape which indicates a higher susceptibility to this scale of development.

LT C: Tributary Farmland with Parkland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Skylines • In places interrupted by woodland, pylons and posts. • Views to parkland edges and woodland. • Intermittent long views to development at the City of Norwich and Norwich Southern Bypass (from C1).	**Low** • This form of development is low in height meaning it is less likely to affect skylines.	**Low** • This form of development is low in height meaning it is less likely to affect skylines.	**Low** • This form of development is low in height meaning it is less likely to affect skylines.	**Low** • This form of development is low in height meaning it is less likely to affect skylines.
Intactness • Intactness varies. Some areas have experienced considerable change with the introduction of the Norwich Southern Bypass and the expansion of settlements such as Cringleford, and the introduction of pylons and other development. • Elsewhere, there is a much stronger and more intact rural character.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The introduction of Solar PV would have a negative effect on the intact rural landscape. This type of development would fragment the existing pattern of rural land uses. • Solar PV also consists of standard components which would tend to dilute the local sense of place. Whilst planting could be locally appropriate the features of the development itself are generic, and would dilute local identity.	**LCA C1: Medium-Low** **LCA C2: Medium-High** • The introduction of Solar PV would have a negative effect on the intact rural landscape. This type of development would fragment the existing pattern of rural land uses. • Solar PV also consists of standard components which would tend to dilute the local sense of place. Whilst planting could be locally appropriate the features of the development itself are generic, and would dilute local identity.	**LCA C1: Medium** **LCA C2: High** • Development of this scale would have a more profound effect on the land use pattern and the perception of character, so the susceptibility to this type of change is higher.	**LCA C1: Medium** **LCA C2: High** • Development of this scale would have a more profound effect on the land use pattern and the perception of character, so the susceptibility to this type of change is higher.

LT C: Tributary Farmland with Parkland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
LCA C1: **Yare Tributary Farmland with Parkland**	**Medium** • Solar PV is lower than other forms of development so is less likely to affect important views. Other characteristics of the landscape would however be affected by this type of development, even if it was possible to screen it. • Solar PV is not compatible with the aims of the Landscape Zone, Key Views, or the Undeveloped Approaches. • Susceptibility is generally medium, but would be higher within the Landscape Protection Zone, Key Views, and the Undeveloped Approaches.	**Medium** • Solar PV is lower than other forms of development so is less likely to affect important views. Other characteristics of the landscape would however be affected by this type of development, even if it was possible to screen it. • Solar PV is not compatible with the aims of the Landscape Zone, Key Views, or the Undeveloped Approaches. • Susceptibility is generally medium, but would be higher within the Landscape Protection Zone, Key Views, and the Undeveloped Approaches.	**Medium-High** • Development of this scale would have an extensive effect on the key characteristics of the area. Development of this scale would have a detrimental effect on the remaining rural areas within this character area. It is unlikely the Yare Tributary Farmland with Parkland LCA could accommodate a development of this size whilst protecting the setting of Norwich. There is on the other hand human influence from the A47 and existing pylons which reduces the susceptibility of the area.	**Medium-High** • Development of this scale would have an extensive effect on the key characteristics of the area. Development of this scale would have a detrimental effect on the remaining rural areas within this character area. It is unlikely the Yare Tributary Farmland with Parkland LCA could accommodate a development of this size whilst protecting the setting of Norwich. There is on the other hand human influence from the A47 and existing pylons which reduces the susceptibility of the area.
LCA C2: **Thurlton Tributary Farmland with Parkland**	**Medium** • Solar PV is lower than other forms of development so is less likely to affect important views. Other characteristics of the landscape would however be affected by this type of development, even if it was possible to screen it. • Susceptibility is generally medium, but would be higher where there are views to historic parks, church towers or The Broads.	**Medium** • Solar PV is lower than other forms of development so is less likely to affect important views. Other characteristics of the landscape would however be affected by this type of development, even if it was possible to screen it. • Susceptibility is generally medium, but would be higher where there are views to historic parks, church towers or The Broads.	**Medium-High** • Development of this scale would have an extensive effect on the key characteristics of the area, and would compromise the sense of remoteness and peacefulness which is present. Development of this scale would alter the farmed character of the Thurlton Tributary Farmland with Parkland. Solar arrays would introduce overt human influence to a rural landscape. • Development of this scale would have a more fundamental effect on the key characteristics of the area, so susceptibility is assessed as Medium-High.	**Medium-High** • Development of this scale would have an extensive effect on the key characteristics of the area, and would compromise the sense of remoteness and peacefulness which is present. Development of this scale would alter the farmed character of the Thurlton Tributary Farmland with Parkland. Solar arrays would introduce overt human influence to a rural landscape. • Development of this scale would have a more fundamental effect on the key characteristics of the area, so susceptibility is assessed as Medium-High.

LT D: Settled Plateau Farmland

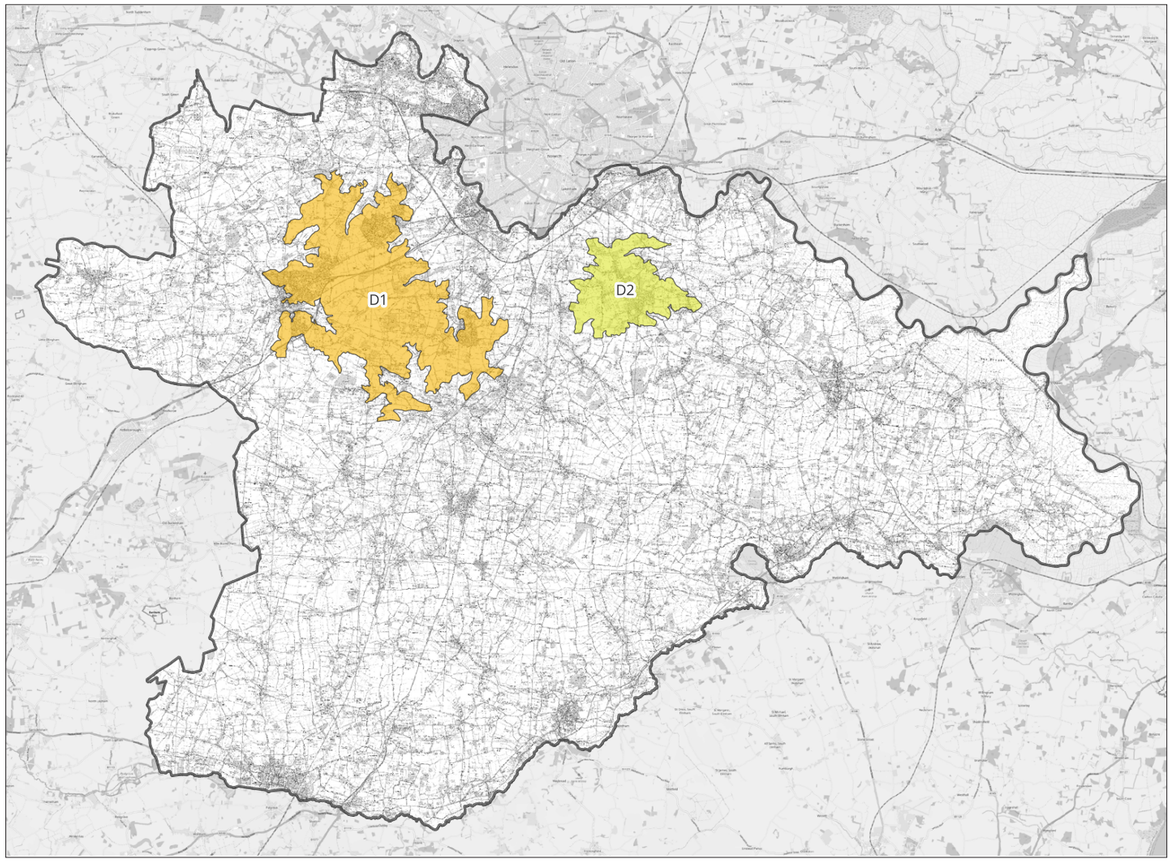
There are two areas of Settled Plateau Farmland, one to the east of the Tas Valley around Poringland, and one to the west of Tas Valley around Wymondham. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The boundaries of these areas are largely represented by the 40 and 50m AOD contours. However, small and fragmented areas above the 40m contour have not been classified as Settled Plateau Farmland.

Key characteristics

- Distinct flat to gently rising elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture principally characteristic swathes of cereal, oilseed rape and sugarbeet.
- Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements.
- Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. Elements of plateau interior not visible except from other plateau areas or where tall intrusive elements are present.
- Mature remnant oak hedgerow trees are features in the agricultural landscape however hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.
- Presence of large communications masts which interrupt of the sense of openness yet provide distinct landmarks.
- Settled landscape mostly comprising large edge-of-plateau towns and large villages with other smaller nucleated settlements dispersed across the plateau.
- Some evidence of historical features within the landscape including isolated churches (some of which are round-towered), moats, historic parkland and some farm ponds.
- Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development.

The individual character areas within this type are listed below:

- D1: Wymondham Settled Plateau Farmland
- D2: Poringland Settled Plateau Farmland



LT D: Settled Plateau Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Scale • Large expanse of flat landform. Medium to large-scale fields. • Views on the plateau can be contained by hedges, while other areas are more open. Visual qualities influence the sense of scale. • Loss of hedges has created a larger scale landscape.	**Medium-Low** • Larger scale landscapes are considered less sensitive to this form of development.	**Medium-Low** • Larger scale landscapes are considered less sensitive to this form of development.	**Medium-Low** • Larger scale landscapes are considered less sensitive to this form of development.	**Medium-Low** • Larger scale landscapes are considered less sensitive to this form of development.
Sense of enclosure • Generally open landscape. Poor hedgerows accentuate the openness of the landscape. • Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements. • Wooded character in parts provides enclosure, particularly around settlements.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development, including Solar PV.	**High** • Development of this scale is likely to be visible. Solar PV has potential for mitigation but this could in itself foreshorten views and alter the characteristic sense of openness.	**High** • Development of this scale is likely to be visible. Solar PV has potential for mitigation but this could in itself foreshorten views and alter the characteristic sense of openness.	**High** • Development of this scale is likely to be visible. Solar PV has potential for mitigation but this could in itself foreshorten views and alter the characteristic sense of openness.
Landform • Distinct flat to gently rolling, elevated landform as a result of the simple underlying geology. • The area centred on Poringland has the greatest variation, rising up to a gentle 'dome' at 75m AOD which is one of the most elevated areas in the district. • The boundaries of these areas are largely represented by the 40 and 50m AOD contours – the plateau edges are highly visible from adjacent landscapes.	**Medium-Low to High** • The simple flat landform is less sensitive to this type of development. • The plateau edges however would be highly sensitive to this form of development which would potentially be exposed and difficult to screen.	**Medium-Low to High** • The simple flat landform is less sensitive to this type of development. • The plateau edges however would be highly sensitive to this form of development which would potentially be exposed and difficult to screen.	**Medium-Low to High** • The simple flat landform is less sensitive to this type of development. • The plateau edges however would be highly sensitive to this form of development which would potentially be exposed and difficult to screen.	**Medium-Low to High** • The simple flat landform is less sensitive to this type of development. • The plateau edges however would be highly sensitive to this form of development which would potentially be exposed and difficult to screen.

LT D: Settled Plateau Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Field pattern **D1 - Wymondham** • Early irregular enclosures at Bracon Ash and Mulbarton. • Irregular field pattern in Ketteringham. • Late enclosure of greens e.g. High Green, Melton and High Green, Wreningham. • Park at Ketteringham. • Field pattern obliterated by airfield at Hethel. **D2 – Poringland** • Late enclosure of former heath (shared between settlements). • Former park at Bixley Hall.	**Medium-Low** • A mix of different field patterns.	**Medium-Low** • A mix of different field patterns.	**Medium-Low** • A mix of different field patterns.	**Medium-Low** • A mix of different field patterns.
Landcover • Large arable fields characterised by swathes of cereals, oilseed rape and sugarbeet. • Some evidence of historic landscape features including moats, historic parkland and farm ponds. • Woodland blocks tend to be associated with halls/remnant parkland.	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum. • Arable farmland is a resource in its own right and there is therefore some susceptibility to development of this type and scale.	**Medium** • Arable farmland is a resource in its own right and there is therefore some susceptibility to development of this type and scale.	**Medium-High** • Arable farmland is a resource in its own right and there is therefore higher susceptibility to this scale of development. • Landcover is more sensitive to this scale of development as it would be more extensive and could alter the perceptions of typical landcover.	**High** • Arable farmland is a resource in its own right and there is therefore higher susceptibility to this scale of development. • Landcover is more sensitive to this scale of development as it would be more extensive and could alter the perceptions of typical landcover.
Settlement pattern and human influence • Historically somewhat sparsely settled but with some dispersed settlement including green-side settlement. • The modern day settlement pattern includes the town of Wymondham and a number of large villages. • Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development. • Wymondham and Mulbarton retain a historic character despite more recent peripheral development, whereas Poringland and Hethersett have a much more modern character (characterised by post-war bungalow development). • Former airfield at Hethel (now site of motor works).	**Medium-Low** • Settlement pattern has somewhat altered with the expansion of settlements. More developed character is apparent in the vicinity of Wymondham, Hethersett and the A11. • There is opportunity for small-scale solar PV linked to the more modern peripheral development of towns.	**Medium** • Development of this scale would have affect the existing land use pattern and increase the sense of human influence, so susceptibility is higher.	**Medium** • Development of this scale would have a large effect on the existing land use pattern and would increase the sense of human influence, so susceptibility is higher.	**Medium** • Development of this scale would have a large effect on the existing land use pattern and would increase the sense of human influence, so susceptibility is higher.

LT D: Settled Plateau Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Perceptual aspects • A number of large settlements are present and there is therefore little sense of remoteness. • The A11 cuts across the Wymondham Settled Plateau Farmlands and introduces a source of noise, movement and modernity. • Whilst this is a settled landscape the villages are set within a rural landscape and there is a sense of countryside.	**Medium** • The remaining areas of countryside are sensitive to development. • Away from the A11 there is a greater sense of tranquillity. Tranquil areas are somewhat sensitive to Solar PV which would introduce some low-level noise.	**Medium** • The remaining areas of countryside are sensitive to development. • Away from the A11 there is a greater sense of tranquillity. Tranquil areas are somewhat sensitive to Solar PV which would introduce some low-level noise.	**Medium-High** • Development of this scale would have a more profound effect on the rural characteristics of the landscape.	**Medium-High** • Development of this scale would have a more profound effect on the rural characteristics of the landscape.
Visual characteristics • Strong open horizons – the archetypal 'Norfolk' Landscape. • Illusions of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape. • Views to large communication masts, settlement on the plateau edge and areas of parkland and woodland blocks. • Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. • D2 plateau is very prominent in views from the surrounding landscape. • Mast at Poringland has high visibility but also serves as a landmark. • A number of large-scale farm buildings including grain towers and silos that punctuated the horizon (particularly near Silfield).	**Medium** • Prominent plateau edges are highly sensitive due to views from adjacent areas. • The interior of the plateau is less sensitive but nonetheless features archetypal views across arable farmland to distant horizons. • Existing farm buildings are different in nature from Solar PV as they are part of the rural landscape. • Solar arrays would represent new and contrasting features, which suggests higher susceptibility. There is some potential to mitigate Solar PV developments, but this can still lead to the loss of long-distance views. Overall then susceptibility to this type of development is judged as Medium.	**Medium-High** • Development of this scale is likely to have a more profound effect on the visual characteristics of the Settled Plateau Farmlands. • Solar panels can be screened with hedges, but this is likely to lead to a loss of the characteristic sense of openness.	**Medium-High** • Development of this scale is likely to have a more profound effect on the visual characteristics of the Settled Plateau Farmlands. • Solar panels can be screened with hedges, but this is likely to lead to a loss of the characteristic sense of openness.	**Medium-High** • Development of this scale is likely to have a more profound effect on the visual characteristics of the Settled Plateau Farmlands. • Solar panels can be screened with hedges, but this is likely to lead to a loss of the characteristic sense of openness.

LT D: Settled Plateau Farmland - susceptibility to Solar PV development

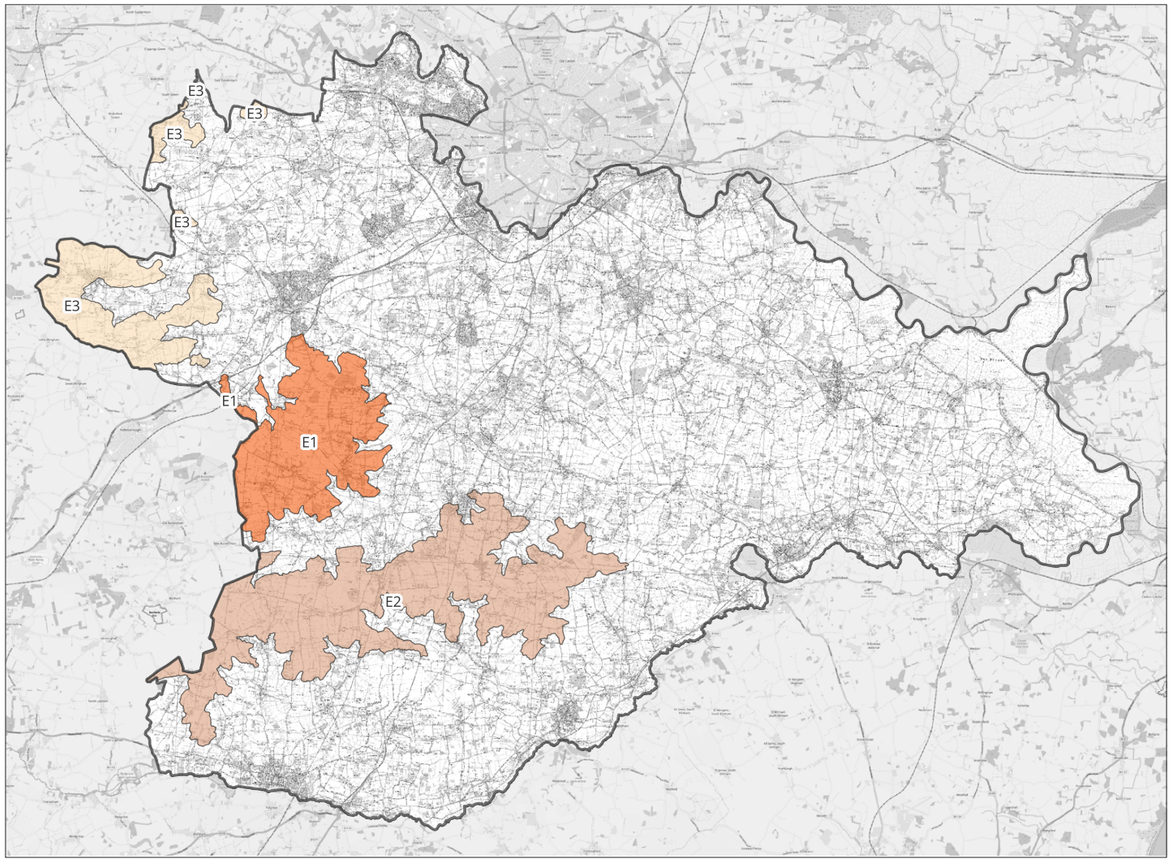
Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Skylines • Strong open horizons – the archetypal 'Norfolk' landscape. • Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.	**Low** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Low** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Low** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Medium** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons. • A development of this scale is more likely to affect the characteristic open horizons.
Intactness • The landscape has clearly experienced considerable change through the expansion of settlements. • Poringland extends across the central part of D2 and is a relatively modern settlement. • Within D1, the settlements of Wymondham, Hethersett and Mulbarton have extended into the countryside, and the area is bisected by the A11. Earlier patterns have also been disrupted by the introduction of a WW2 airfield. The settlements are nonetheless separated by substantial areas of countryside.	**Medium-Low** • Development is nucleated and there is a clear distinction between urban areas and the countryside. • There is some potential to accommodate field scale solar PV linked to the more modern peripheral development of towns. • Development which fragments the remaining countryside would be detrimental.	**Medium-High** • Development of this scale would inevitably have a detrimental effect on the intactness of the remaining countryside.	**Medium-High** • Development of this scale would inevitably have a detrimental effect on the intactness of the remaining countryside.	**Medium-High** • Development of this scale would inevitably have a detrimental effect on the intactness of the remaining countryside.

LT D: Settled Plateau Farmland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
LCA D1: Wymondham Settled Plateau Farmland	**Medium** • Solar PV is lower than other forms of development, so is less likely to affect important views. Other characteristics of the landscape would however be affected, even if it was possible to screen the development. Mitigation planting would itself affect the characteristic openness of the Wymondham Settled Plateau Farmlands. The gaps between settlements are also sensitive to erosion from this type of development.	**Medium** • Solar PV is lower than other forms of development, so is less likely to affect important views. Other characteristics of the landscape would however be affected, even if it was possible to screen the development. Mitigation planting would itself affect the characteristic openness of the Wymondham Settled Plateau Farmlands. The gaps between settlements are also sensitive to erosion from this type of development.	**Medium-High** • A development of this scale would affect the gaps between settlements and would alter the land use pattern. The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Development of this scale would alter the characteristics of the Wymondham Settled Plateau Farmlands.	**Medium-High** • A development of this scale would affect the gaps between settlements and would alter the land use pattern. The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Development of this scale would alter the characteristics of the Wymondham Settled Plateau Farmlands.
LCA D2: Poringland Settled Plateau Farmland	**Medium** • Solar PV is lower than other forms of development, so is less likely to affect important views. Other characteristics of the landscape would however be affected, even if it is possible to screen the development. Mitigation planting is likely to affect the characteristic openness of the Poringland Settled Plateau Farmlands.	**Medium** • Solar PV is lower than other forms of development, so is less likely to affect important views. Other characteristics of the landscape would however be affected, even if it is possible to screen the development. Mitigation planting is likely to affect the characteristic openness of the Poringland Settled Plateau Farmlands.	**Medium-High** • A development of this scale would alter the land use pattern within the area. The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Development of this scale would alter the characteristics of the Poringland Settled Plateau Farmland.	**Medium-High** • A development of this scale would alter the land use pattern within the area. The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Development of this scale would alter the characteristics of the Poringland Settled Plateau Farmland.

LT E: Plateau Farmland

The Plateau Farmland Landscape Type occurs in the western part of the district in three principal areas, all of which continue beyond the South Norfolk boundary into the adjoining Breckland District. The Plateau Farmlands are defined by their elevation and all are primarily delineated by the 50m contour. However, it should be noted that not all areas above the 50m contour line have been classified as Plateau Farmland due to differing land use patterns.



Key characteristics

- Distinct flat and elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture with characteristic swathes of cereal, oilseed rape and sugarbeet monoculture.
- Sense of openness and exposure due to the elevation and scarcity of enclosing elements.
- Long views of the district from the plateau edges and shorter internalised plateau views. Inner plateau largely invisible from other areas.
- Mature remnant oak hedgerow trees are features in the agricultural landscape. However, hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Straight plateau-top roads characteristically lined with attractive wide grass verges and ditches.
- Wooded horizons as a result of visual merging of hedgerow trees and woodlands in the landscape, which integrate settlements into the landscape.
- Presence of tall structures including masts and poles which disturb the rural scene interrupting the sense of openness.
- Sparsely settled landscape mostly comprising larger edge-of-plateau settlements, small nucleated and long linear settlements.
- Presence of historic features within the landscape including isolated church, moats, and farm ponds.
- Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development.
- Disused air fields

The individual character areas within this type are listed below:

- E1: Ashwellthorpe Plateau Farmland
- E2: Great Moulton Plateau Farmland
- E3: Hingham-Mattishall Plateau Farmland

LT E: Plateau Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Scale • A generally open character creates a medium to large scale landscape.	**Medium-Low** • Fields are generally of a medium to large size which reduces sensitive to larger scale developments such as solar farms.	**Medium-Low** • Fields are generally of a medium to large size which reduces sensitive to larger scale developments such as solar farms.	**Medium-Low** • Fields are generally of a medium to large size which reduces sensitive to larger scale developments such as solar farms.	**Medium-Low** • Fields are generally of a medium to large size which reduces sensitive to larger scale developments such as solar farms
Sense of enclosure • Sense of openness and exposure due to the elevation and scarcity of enclosing elements. • The flatness of the plateau creates a strong sense of openness with large skies and distant horizons.	**Medium-High** • The generally open character and lack of screening elements increases susceptibility to any new development. Hedges and woodlands do though provide some localised enclosure.	**High** • Development of this scale is likely to be visible. Solar PV has potential for mitigation, but this could in itself foreshorten views and alter the characteristic sense of openness.	**High** • Development of this scale is likely to be visible. Solar PV has potential for mitigation, but this could in itself foreshorten views and alter the characteristic sense of openness.	**High** • Development of this scale is likely to be visible. Solar PV has potential for mitigation, but this could in itself foreshorten views and alter the characteristic sense of openness.
Landform • Distinct flat and elevated plateau landform. • Defined by the elevation and primarily delineated by the 50m contour.	**Medium-Low** • The large flat landform is considered less-sensitive to Solar PV.	**Medium-Low** • The large flat landform is considered less-sensitive to Solar PV.	**Medium-Low** • The large flat landform is considered less-sensitive to Solar PV.	**Medium-Low** • The large flat landform is considered less-sensitive to Solar PV.
Field pattern **E1 – Ashwellthorpe Plateau Farmland** • Ancient rectilinear enclosures in Bunwell • Ancient irregular enclosures at Fundenhall • Late enclosure of large commons (shared between settlements). • Fields on poor drained plateau bound by ditches. **E2 – Great Moulton** • Ancient rectilinear field patterns in Burston, Tibenham, Great Moulton and Hardwick. • Irregular field patterns, presumably early enclosures. • Large heath at western edge of area enclosed in C18. • Some remaining unenclosed land e.g. Wacton Common. • Field pattern eroded by airfields and hedgerow loss. **E3 – Hingham - Mattishall** • Later enclosure of commons and warren signified by rectilinear field pattern e.g at Deopham Green. • Irregular field patterns at Hingham an Wicklewood. • Late enclosure of Welborne Common (C18)	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape.

LT E: Plateau Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Landcover • Large fields of arable monoculture with characteristic swathes of wheat, barley, oilseed rape and sugar beet. • Mature hedgerow oaks are features in the agricultural landscape. However hedgerows have been severely degraded or lost, leading to a much simplified landscape. • Generally an early enclosed landscape, but with significant areas of common/ heath, many of which were enclosed in the C19. Some remaining commons. • Mixed field patterns relating to the history of enclosure.	**Medium** • Rural landcover pattern is sensitive to extensive developments such as Solar PV.	**Medium-High** • Predominantly arable farmland is sensitive to development of this scale, which would alter its character. • Development would have an effect on arable farmland as a resource in its own right.	**Medium-High** • Predominantly arable farmland is sensitive to development of this scale, which would alter its character. • Development of this scale would have a considerable effect on arable farmland as a resource in its own right.	**Medium-High** • Predominantly arable farmland is sensitive to development of this scale, which would alter its character. • Development of this scale would have a considerable effect on arable farmland as a resource in its own right.
Settlement pattern and human influence • Dispersed settlement pattern. Common-edge settlement, hamlets and small nucleated villages. Many small halls, often isolated, with moats. No large parklands. • Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development. • Linear settlements occur along roads with some vernacular buildings intermixed with more modern development. • Disused airfields. • Occasional tall structures including wind turbines.	**Medium-High** • A rural settlement pattern with relatively few modern elements is sensitive to development. • Solar PV could detract from historic features including vernacular buildings.	**Medium-High** • A rural settlement pattern with relatively few modern elements is sensitive to development. • Solar PV could detract from historic features including vernacular buildings.	**High** • A rural settlement pattern with relatively few modern elements is highly sensitive to development of this scale. • Solar PV could detract from historic features including vernacular buildings. • Solar PV on this scale would have a large effect on the land use pattern, and introduce a much greater sense of human influence.	**High** • A rural settlement pattern with relatively few modern elements is highly sensitive to development of this scale. • Solar PV could detract from historic features including vernacular buildings. • Solar PV on this scale would have a large effect on the land use pattern, and introduce a much greater sense of human influence.
Perceptual aspects • A peaceful rural character created by the absence of main roads and development. • Quiet rural lanes dissect the landscape. • The A140 cuts north-south through part of E2.	**Medium-High** • The large areas of quiet rural farmland provide a sense of remoteness and tranquillity, which increases susceptibility to all forms of development. • The rural character of this area is sensitive to the urbanising influence of Solar PV. • Tranquil character is somewhat sensitive to Solar PV which would introduce some low-level noise.	**Medium-High** • The large areas of quiet rural farmland provide a sense of remoteness and tranquillity, which increases susceptibility to all forms of development. • The rural character of this area is sensitive to the urbanising influence of Solar PV. • Tranquil character is somewhat sensitive to Solar PV which would introduce some low-level noise.	**High** • Development of this scale would have a more profound effect on the perceptions of rurality etc.	**High** • Development of this scale would have a more profound effect on the perceptions of rurality etc.

LT E: Plateau Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Visual characteristics • Long views of the district from the plateau edges take in a wide panorama of South Norfolk and these are some of the best in the district. • Shorter internalised plateau views are to farm buildings and isolated churches. • From higher areas of plateau and from the plateau edge there are views to adjacent landscapes including to churches in adjoining areas	**Medium** • Solar PV consist of low elements, but these may still be enough to foreshorten views within the plateau landscape. • In terms of views there is scope to locate small-scale Solar PV in flat areas away from the plateau edge. • Unlikely to be visible from adjacent landscapes. • Care should be taken to avoid interrupting views to historic features.	**Medium-High** • Development of this scale is likely to have a more profound effect on the visual characteristics of the Plateau Farmlands. • Solar panels can be screened with hedges, but this is likely to lead to a loss of the characteristic sense of visual openness.	**Medium-High** • Development of this scale is likely to have a more profound effect on the visual characteristics of the Plateau Farmlands. • Solar panels can be screened with hedges, but likely to lead to a loss of the characteristic sense of visual openness.	**Medium-High** • Development of this scale is likely to have a more profound effect on the visual characteristics of the Plateau Farmlands. • Solar panels can be screened with hedges, but likely to lead to a loss of the characteristic sense of visual openness.
Skylines • The flatness of the plateau creates a strong sense of openness with vast skies and dramatic horizons. • Expansive skies are a defining feature with distant views and farm buildings are visible in the open landscape. • 360 degree horizon in places.	**Low** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Low** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Low** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Medium** • This form of development is low in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons. • A development of this scale is more likely to affect the characteristic open horizons.
Intactness • The landscape has experienced ongoing change including enclosure in the C19 and rationalisation in the C20. Some elements of the landscape however can be traced back to the medieval era and there is some sense of historic continuity. Modern elements are relatively few. • Though there have clearly been changes in land management, including the amalgamation of fields, the landscape retains a strong rural character.	**Medium-High** • Intact rural landscape is sensitive to development of this type and scale.	**Medium-High** • Intact rural landscape is sensitive to development of this type and scale.	**High** • Development of this scale would have a profound effect on the intact rural character of the area.	**High** • Development of this scale would have a profound effect on the intact rural character of the area.

LT E: Plateau Farmland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
LCA E1: Ashwellthorpe Plateau Farmland	**Medium** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. The mast at Tacolneston introduces some overt human influence, but the area otherwise has a peaceful, rural character which is susceptible to change.	**Medium** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. The mast at Tacolneston introduces some overt human influence, but the area otherwise has a peaceful, rural character which is susceptible to change.	**Medium-High** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. • Development of this scale would have a more profound effect on the peaceful, rural character of the area.	**Medium-High** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. • Development of this scale would have a more profound effect on the peaceful, rural character of the area.
LCA E2: Great Moulton Plateau Farmland	**Medium** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. Timber-framed buildings and moats increase the sense of time-depth, which increases sensitivity.	**Medium** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. Timber-framed buildings and moats increase the sense of time-depth, which increases sensitivity. The sparse rural settlement pattern is susceptible to change.	**Medium-High** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. Timber-framed buildings and moats increase the sense of time-depth, which increases sensitivity. The sparse rural settlement pattern would be compromised by development of this scale.	**Medium-High** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the extensive arable farmland which is a characteristic feature of the area. Timber-framed buildings and moats increase the sense of time-depth, which increases sensitivity. The sparse rural settlement pattern would be compromised by development of this scale.
LCA E3: Hingham-Mattishall Plateau Farmland	**Medium** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the arable farmland which is a characteristic feature of the area. The rural character of the landscape is susceptible to change. Extensive views to and from the plateau increase sensitivity.	**Medium** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the arable farmland which is a characteristic feature of the area. The rural character of the landscape is susceptible to change. Extensive views to and from the plateau increase sensitivity.	**Medium-High** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the arable farmland which is a characteristic feature of the area. A development of this scale would have a large effect on the rural character of the area. Extensive views to and from the plateau increase sensitivity.	**Medium-High** • The flat plateau landform offers the potential to screen solar panels, however mitigation planting is likely to alter the characteristic sense of openness within this landscape. Solar PV would have a direct effect on the arable farmland which is a characteristic feature of the area. A development of this scale would have a large effect on the rural character of the area. Extensive views to and from the plateau increase sensitivity.

LT F: Valley Urban Fringe

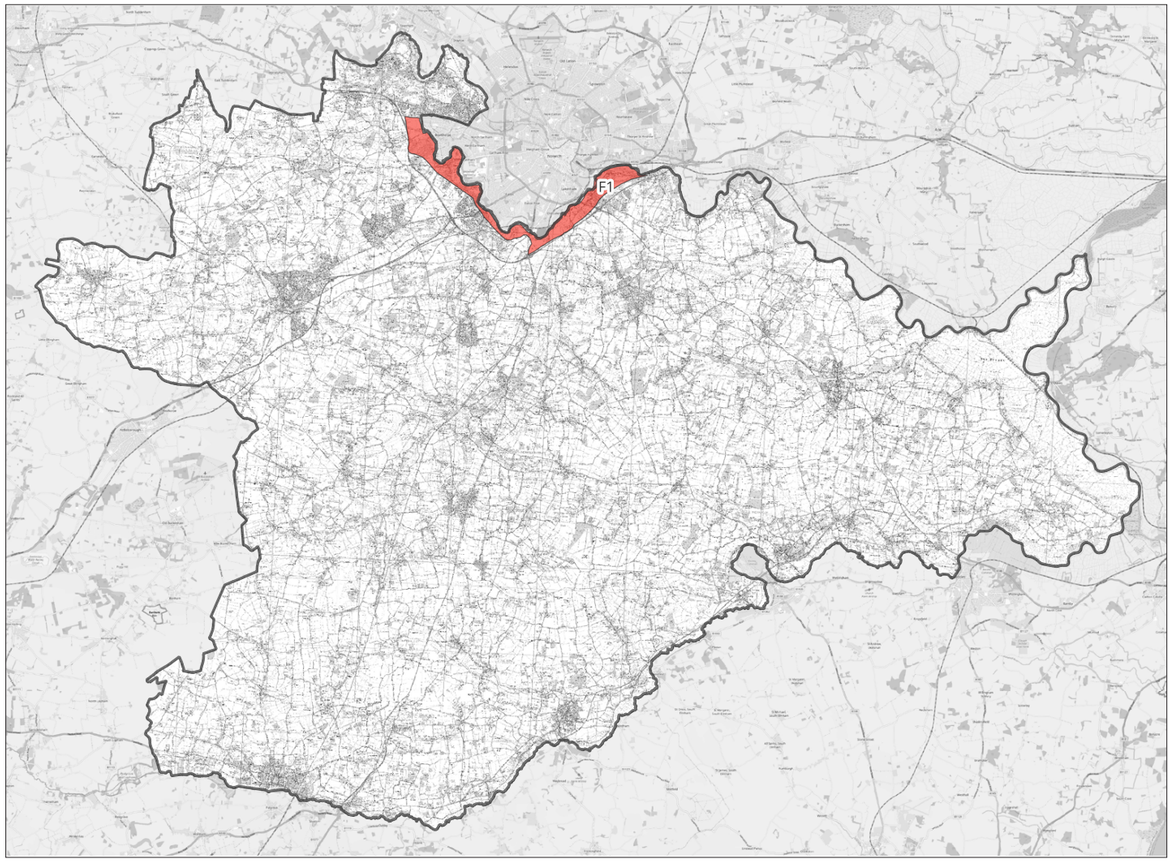
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area within the jurisdiction of Norwich City Council. The crest of the slope at about 30m AOD represents the boundary of this landscape type; as it is at this point that the character changes to a valley landform, focused on the River Yare.

Key characteristics

- Distinctive broad meandering valley form with wide flat flood plain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.
- Glacial gravel deposits, which have been exploited resulting in remnant flooded gravel workings along the valley floor.
- Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland creating a well wooded appearance.
- Inaccessible valley floor with relatively few river crossings.
- Evidence of early human activity, for example the henge at Arminghall and presence of numerous Scheduled Ancient Monuments.
- Few distinctive vernacular buildings mainly due to the relative lack of prewar settlement within the valley.
- Distinct absence of settlement within the valley, apart from discrete areas nestled around river crossings, although influenced by Norwich urban fringe along parts of the upper valley sides.
- Impenetrability resulting in a sense of remoteness and solitude- remarkable given the closeness of a major city.
- Large institutional buildings occasionally visible from the valley.

There is one Landscape Character Area within this type:

- F1: Yare Valley Urban Fringe



LT F: Valley Urban Fringe - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Scale • Distinctive broad meandering valley form with wide flat floodplain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley meet the main valley.	**Medium** • The Yare Valley Urban Fringe is a relatively small scale, semi-enclosed and contained landscape. • The relatively small scale landscape is moderately sensitive to development of this scale.	**Medium** • The Yare Valley Urban Fringe is a relatively small scale, semi-enclosed and contained landscape. • The relatively small scale landscape is moderately sensitive to development of this scale.	**Medium-High** • The Yare Valley Urban Fringe is a relatively small scale, semi-enclosed and contained landscape. • The relatively small scale valley could not accommodate development of this scale without fundamentally altering the characteristics of the valley.	**Medium-High** • The Yare Valley Urban Fringe is a relatively small scale, semi-enclosed and contained landscape. • The relatively small scale valley could not accommodate development of this scale without fundamentally altering the characteristics of the valley.
Sense of enclosure • A sense of containment. • Wide, fairly flat floodplain with enclosing valley sides. • Trees and woodland also contribute to enclosure in places.	**Medium** • Landform provides containment, but there is some openness within the valley itself. • Trees and woodland also contribute to enclosure in places. • Semi-enclosed landscape with medium susceptibility.	**Medium-High** • More extensive schemes are less likely to be contained by existing vegetation so susceptibility is higher.	**Medium-High** • More extensive schemes are less likely to be contained by existing vegetation so susceptibility is higher.	**Medium-High** • More extensive schemes are less likely to be contained by existing vegetation so susceptibility is higher.
Landform • Wide, fairly flat floodplain with enclosing valley sides. • The sides of the valley are fairly steep in places.	**Varying from Medium to Medium-High** • Meandering valley features some sinuous landform which lies at the higher end of the sensitivity spectrum. • Valley floor is flat and has lower sensitivity. • Valley-sides are considered to have higher sensitivity as panels would be difficult to screen.	**Varying from Medium to Medium-High** • Meandering valley features some sinuous landform which lies at the higher end of the sensitivity spectrum. • Valley floor is flat and has lower sensitivity. • Valley-sides are considered to have higher sensitivity as panels would be difficult to screen.	**Varying from Medium to Medium-High** • Meandering valley features some sinuous landform which lies at the higher end of the sensitivity spectrum. • Valley floor is flat and has lower sensitivity. • Valley-sides are considered to have higher sensitivity as panels would be difficult to screen.	**Varying from Medium to Medium-High** • Meandering valley features some sinuous landform which lies at the higher end of the sensitivity spectrum. • Valley floor is flat and has lower sensitivity. • Valley-sides are considered to have higher sensitivity as panels would be difficult to screen.
Field pattern • The field pattern largely consists of irregular flood meadows divided by dykes. • The valley sides feature irregular and regular enclosures, as well as parkland.	**Varying from Medium to Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character. The fields on the valley side are however bound by hedges.	**Varying from Medium to Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character. The fields on the valley side are however bound by hedges.	**Varying from Medium to Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character. The fields on the valley side are however bound by hedges.	**Varying from Medium to Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Solar arrays would appear stark, while the introduction of hedges would be out of character. The fields on the valley side are however bound by hedges.

LT F: Valley Urban Fringe - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Landcover • Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland. Mixed woodlands and shelterbelts occur on the valley sides creating a well-wooded appearance. • Glacial gravel deposits, which have been and continue to be exploited resulting in remnant flooded gravel workings along the valley floor. • Natural character. Nature reserves such as Whitlingham Marsh. The river itself is a chalk river. • Presence of recreational landscapes including the country park at Whitlingham and playing fields at UEA. • Inaccessible valley floor with relatively few river crossings.	**Varying from Medium to Medium-High** • The floodplain features meadows and pastures, riparian woodland, marsh, the University of East Anglia Broad and flooded mineral workings at Bawburgh. These habitats form an interlinked chain which is sensitive to development. • Semi-natural habitats within floodplain have higher susceptibility. • The valley contains rare and valuable habitats such as marsh which would be incompatible with this form of development.	**Varying from Medium to Medium-High** • The floodplain features meadows and pastures, riparian woodland, marsh, the University of East Anglia Broad and flooded mineral workings at Bawburgh. These habitats form an interlinked chain which is sensitive to development. • Semi-natural habitats within floodplain have higher susceptibility. • The valley contains rare and valuable habitats such as marsh which would be incompatible with this form of development.	**Varying from Medium to Medium-High** • The floodplain features meadows and pastures, riparian woodland, marsh, the University of East Anglia Broad and flooded mineral workings at Bawburgh. These habitats form an interlinked chain which is sensitive to development. • Semi-natural habitats within floodplain have higher susceptibility. • The valley contains rare and valuable habitats such as marsh which would be incompatible with this form of development.	**Medium-High** • The floodplain features meadows and pastures, riparian woodland, marsh, the University of East Anglia Broad and flooded mineral workings at Bawburgh. These habitats form an interlinked chain which is sensitive to development. • Semi-natural habitats within floodplain have higher susceptibility. • The valley contains rare and valuable habitats such as marsh which would be incompatible with this form of development. • Development of this scale would alter the typical landcover within the valley.
Settlement pattern and human influence • Highly influenced by Norwich urban fringe along parts of the upper valley sides. • A number of large institutional buildings in or adjacent to the valley. • Green buffer and comprehensible development edge to the City of Norwich. • Floodplain has remained undeveloped.	**Medium-Low** • The valley largely functions as a green buffer, but there is some development at Colney, Cringleford and Trowse Newton. • The urban influence in the area reduces its susceptibility to change.	**Medium-Low** • Development of this scale is likely to weaken the perception of the Yare Valley as a green buffer.	**Medium** • Development of this scale would have a large effect on the land use pattern, and would compromise the perception of the Yare Valley as a green buffer.	**Medium** • Development of this scale would have a large effect on the land use pattern, and would compromise the perception of the Yare Valley as a green buffer.
Perceptual aspects • Noise of traffic on the Norwich Southern Bypass disturbs the tranquillity of the valley. Overall, despite these urban influences, the valley is mostly quiet and secluded.	**Medium-Low** • Little sense of tranquillity or remoteness. • Proximity to urban area is apparent. • Lighting from urban area. • Potentially introduces noise and lighting however existing conditions indicate lower susceptibility.	**Medium-Low** • Little sense of tranquillity or remoteness. • Proximity to urban area is apparent. • Lighting from urban area. • Potentially introduces noise and lighting however existing conditions indicate lower susceptibility.	**Medium-Low** • Little sense of tranquillity or remoteness. • Proximity to urban area is apparent. • Lighting from urban area. • Potentially introduces noise and lighting however existing conditions indicate lower susceptibility.	**Medium-Low** • Little sense of tranquillity or remoteness. • Proximity to urban area is apparent. • Lighting from urban area. • Potentially introduces noise and lighting however existing conditions indicate lower susceptibility.

LT F: Valley Urban Fringe - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Visual characteristics • Views are variable with open and enclosed views within the valley with large institutional buildings occasionally visible. • Views across the valley towards the City of Norwich. Valley performs an important visual function in creating a setting to the city. • Some enclosure from valley sides and vegetation.	**Medium** • Important views across valley to Norwich are susceptible to change. • Solar panels are typically fairly low so are unlikely to completely obscure views. They can however change the visual characteristics of the area.	**Medium-High** • Important views across valley to Norwich are susceptible to change. • Solar panels are typically fairly low so are unlikely to completely obscure views. • Development of this scale would be more difficult to accommodate without compromising the visual characteristics of the valley, so the susceptibility is judged to be higher.	**Medium-High** • Important views across valley to Norwich are susceptible to change. • Solar panels are typically fairly low so are unlikely to completely obscure views. • Development of this scale would be more difficult to accommodate without compromising the visual characteristics of the valley, so the susceptibility is judged to be higher.	**Medium-High** • Important views across valley to Norwich are susceptible to change. • Solar panels are typically fairly low so are unlikely to completely obscure views. • Development of this scale would be more difficult to accommodate without compromising the visual characteristics of the valley, so the susceptibility is judged to be higher.
Skylines • The valley crests form a skyline in views from the valley floor. • Mixed woodland blocks and shelter blocks occur on the valley sides creating a well-wooded skyline.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Generally low susceptibility, but valley crests are sensitive to development.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Generally low susceptibility, but valley crests are sensitive to development.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Generally low susceptibility, but valley crests are sensitive to development.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Generally low susceptibility, but valley crests are sensitive to development.
Intactness • The floodplain features former meadows and parkland, but nature conservation and recreation are increasingly important. • The land uses have evolved and there is a weak sense of historical continuity. • The intactness is to some extent disturbed by past mineral workings, which have made a lasting impression on the landscape. • The intactness of the valley is also influenced by the development of railways and later road bridges.	**Medium** • The land uses have evolved and there is a weak sense of historical continuity. • The floodplain is largely undeveloped and features a coherent pattern of land uses which is vulnerable to fragmentation. • The susceptibility is therefore assessed as Medium.	**Medium** • The land uses have evolved and there is a weak sense of historical continuity. • The floodplain is largely undeveloped and features a coherent pattern of land uses which is vulnerable to fragmentation. • The susceptibility is therefore assessed as Medium.	**Medium** • The land uses have evolved and there is a weak sense of historical continuity. • The floodplain is largely undeveloped and features a coherent pattern of land uses which is vulnerable to fragmentation. • The susceptibility is therefore assessed as Medium.	**Medium** • The land uses have evolved and there is a weak sense of historical continuity. • The floodplain is largely undeveloped and features a coherent pattern of land uses which is vulnerable to fragmentation. • The susceptibility is therefore assessed as Medium.

LT F: Valley Urban Fringe - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
LCA F1: **Yare Valley Urban Fringe**	**Medium** • The undeveloped floodplain is sensitive to development of all types. The valley sides are also considered to be sensitive to Solar PV panels as they would be difficult to screen. • There is some settlement and human influence within the valley and the overall susceptibility in relation to this scale of development is assessed as Medium.	**Medium** • The undeveloped floodplain is sensitive to development of all types. The valley sides are also considered to be sensitive to Solar PV panels as they would be difficult to screen. • There is some settlement and human influence within the valley and the overall susceptibility in relation to this scale of development is assessed as Medium.	**Medium-High** • The undeveloped floodplain is sensitive to development of all types. The valley sides are also considered to be sensitive to Solar PV panels as they would be difficult to screen. • The floodplain features a coherent pattern of land uses which would be vulnerable to fragmentation. • This scale of development would alter the characteristics of the landscape.	**Medium-High** • The undeveloped floodplain is sensitive to development of all types. The valley sides are also considered to be sensitive to Solar PV panels as they would be difficult to screen. • The floodplain features a coherent pattern of land uses which would be vulnerable to fragmentation. • This scale of development would alter the characteristics of the landscape.

LT G: Fringe Farmland

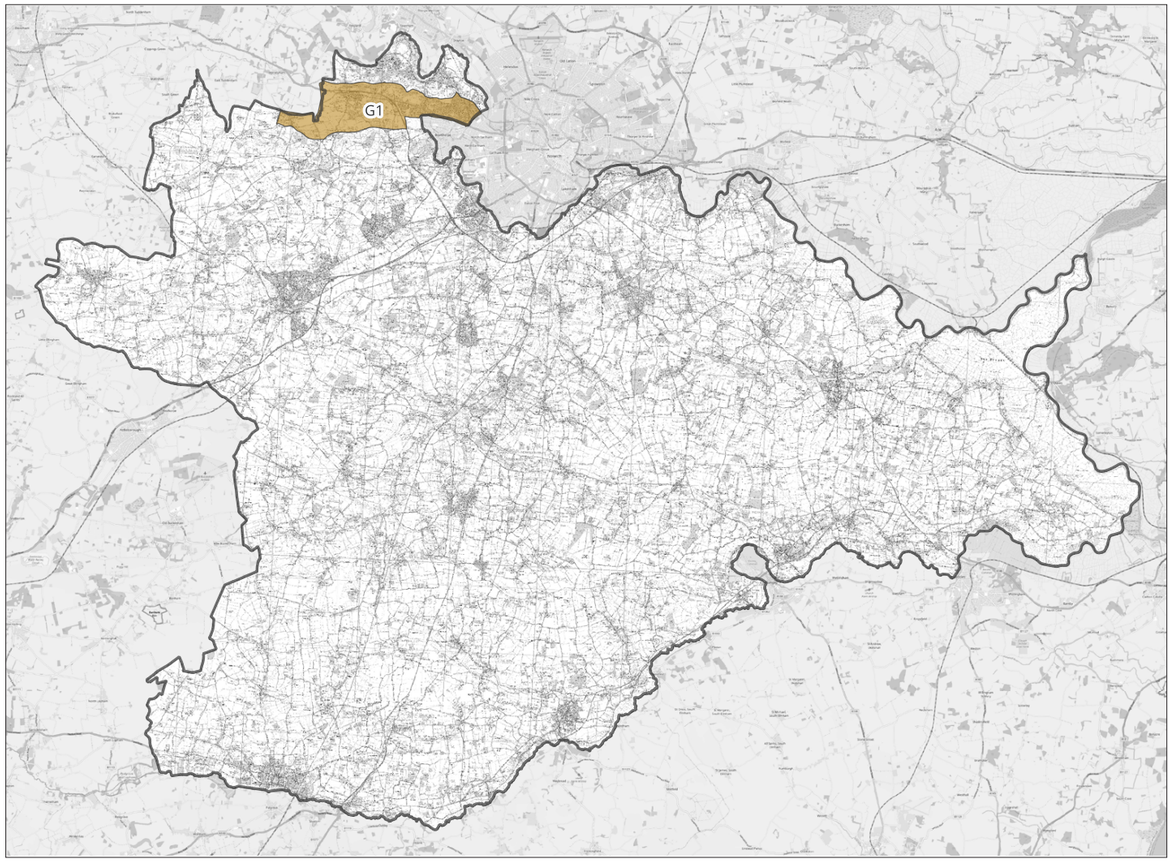
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare Rural River Valley to the south. It is defined as a distinctive landscape as a result of its relatively developed character and eroded farmland context.

Key characteristics

- Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline;
- History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas.
- Use of the area for urban fringe uses including a park and ride scheme (under construction), retail warehouses, a golf course and the Royal Norfolk Showground.
- Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton.
- Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.
- Absence of large wooded areas.
- Norwich Southern Bypass is a major feature of the area.

There is one Landscape Character Area within this type:

- G1: Easton Fringe Farmland



LT G: Fringe Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Scale • The scale of this landscape varies according to the land cover pattern and level of built development.	**Varies** • The more developed and wooded parts of the area create a small-scale landscape. • The more open parts of the area have an intermediate scale with medium susceptibility.	**Varies** • The more developed and wooded parts of the area create a small-scale landscape. • The more open parts of the area have an intermediate scale with medium susceptibility.	**Varies** • The more developed and wooded parts of the area create a small-scale landscape. • The more open parts of the area have an intermediate scale with medium susceptibility.	**Varies** • The more developed and wooded parts of the area create a small-scale landscape. • The more open parts of the area have an intermediate scale with medium susceptibility.
Sense of enclosure • This landscape can feel exposed in places as a consequence of the elevated ridge topography and relatively low– level of woodland.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • Areas of localised enclosure would have lower susceptibility. • The more open and exposed areas have high susceptibility.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development • Areas of localised enclosure would have lower susceptibility. • The more open and exposed areas have high susceptibility.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • Areas of localised enclosure would have lower susceptibility. • The more open and exposed areas have high susceptibility.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • Areas of localised enclosure would have lower susceptibility. • The more open and exposed areas have high susceptibility.
Landform • Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline. • Undulating landscape with a distinct ridge top.	**Medium-High** • Ridge landform is sensitive to all types of development including Solar PV.	**Medium-HIgh** • Ridge landform is sensitive to all types of development including Solar PV.	**Medium-High** • Ridge landform is sensitive to all types of development including Solar PV.	**Medium-High** • Ridge landform is sensitive to all types of development including Solar PV.
Field pattern • Field pattern is obscured by land use change across part of the area. • More rural parts of the area show a mix of regular and irregular field patterns which relates to the history of enclosure.	**Medium** • Mix of irregular and regular enclosures. Medium to small-scale fields.	**Medium** • Mix of irregular and regular enclosures. Medium to small-scale fields.	**Medium** • Mix of irregular and regular enclosures. Medium to small-scale fields.	**Medium** • Mix of irregular and regular enclosures. Medium to small-scale fields.

LT G: Fringe Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Landcover • Defined predominantly by farmland with urban and urban fringe development. A degraded farmland context. • History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas. • Urban fringe uses including a park and ride scheme, retail warehouses, a golf course and the Royal Norfolk Showground. • Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.	**Varies** • More developed areas including the urban fringe have a lower sensitivity. • The more rural parts of the area have moderate sensitivity.	**Varies** • More developed areas including the urban fringe have a lower sensitivity. • The more rural parts of the area have moderate sensitivity.	**Varies** • More developed areas including the urban fringe have a lower sensitivity. • The more rural parts of the area have moderate sensitivity. • Development of this scale would alter the existing landcover pattern.	**Medium-High** • Development of this scale would alter the typical landcover. • Development of this scale would have a more profound effect on landccover so the susceptibility is higher.
Settlement pattern and human influence • Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton. • Relatively developed character. • Retail warehouses and supermarkets on edge of town.	**Varies from Low to Medium** • The relatively developed character of much of the area indicates lower susceptibility. • The south-western part of the area however retains a rural settlement pattern.	**Varies from Low to Medium** • The relatively developed character of much of the area indicates lower susceptibility. • The south-western part of the area however retains a rural settlement pattern.	**Varies from Medium to Medium-High** • Development of this scale would create additional human influence and could compromise the remaining rural areas.	**Varies from Medium to Medium-High** • Development of this scale would create additional human influence and could compromise the remaining rural areas.
Perceptual aspects • Not a remote or tranquil landscape. Recent construction and land use activities have had significant effect upon the rural character. • The Norwich Southern Bypass introduces a corridor of noise and movement. Other roads of the area retain a strong rural character.	**Varies from Low to Medium** • Existing noise and disturbance indicate a fairly low susceptibility to change.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.

LT G: Fringe Farmland - susceptibility to Solar PV development

Landscape attribute	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
Visual characteristics • There are views from the ridge into the adjacent valley landscapes of the Tud and the valley of the rural Yare with its flooded gravel workings. • The ridge is a locally prominent feature of the landscape and is visible from the valleys of the Yare and Tud and the surrounding tributary valley landscape.	**Medium-High** • The ridge is a locally prominent feature which is sensitive to development of all types. • Solar PV would potentially appear stark in this location. • Views to and from the adjacent valley landscapes increase sensitivity.	**Medium-High** • The ridge is a locally prominent feature which is sensitive to development of all types. • Solar PV would potentially appear stark in this location. • Views to and from the adjacent valley landscapes increase sensitivity.	**Medium-High** • The ridge is a locally prominent feature which is sensitive to development of all types. • Solar PV would potentially appear stark in this location. • Views to and from the adjacent valley landscapes increase sensitivity.	**Medium-High** • The ridge is a locally prominent feature which is sensitive to development of all types. • Solar PV would potentially appear stark in this location. • Views to and from the adjacent valley landscapes increase sensitivity.
Skylines • Skyline varies, sometimes formed by distant views to adjacent landscapes but often interrupted by development and shelterbelts.	**Low** • This form of development is low and is unlikely to affect the skyline. • Panels or mitigation planting could interrupt views to distant horizons.	**Low** • This form of development is low and is unlikely to affect the skyline. • Panels or mitigation planting could interrupt views to distant horizons.	**Medium-Low** • This form of development is low and is unlikely to affect the skyline. • Development of this scale is more likely to interrupt views to distant horizons.	**Medium** • This form of development is low and is unlikely to affect the skyline. • Development of this scale is more likely to interrupt views to distant horizons.
Intactness • This Landscape Type has seen considerable land use change and there is a fragmented pattern of land uses. • Changing demands upon the land mean that the historical landscape pattern is weakly expressed. • Areas of more intact rural landscape do however occur away from urban edge.	**Medium-Low** • The fragmented landscape pattern has a lower susceptibility to change. • Solar PV consists of standard components which would tend to dilute the local sense of place.	**Medium-Low** • The fragmented landscape pattern has a lower susceptibility to change. • Solar PV consists of standard components which would tend to dilute the local sense of place.	**Medium** • Development of this scale would have a more profound effect on the land use pattern and the perception of character, so the susceptibility to this type of change is higher. • Solar PV consists of standard components which would tend to dilute the local sense of place.	**Medium** • Development of this scale would have a more profound effect on the land use pattern and the perception of character, so the susceptibility to this type of change is higher. • Solar PV consists of standard components which would tend to dilute the local sense of place.

LT G: Fringe Farmland - susceptibility to Solar PV development

Overall susceptibility	Small-scale Solar PV development (up to 5MW)	Medium-scale Solar PV development (5MW – 15MW)	Large-scale Solar PV development (15MW – 50MW)	Very large Solar PV development (over 50MW)
LCA G1: Easton Fringe Farmland	**Medium** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides moderate enclosure. Visual connections with adjacent landscapes increase sensitivity. • There is some potential for small-scale Solar PV developments if they are appropriately sited. The overall susceptibility to this scale of development is assessed as Medium.	**Medium** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides moderate enclosure. Visual connections with adjacent landscapes increase sensitivity. • There is some potential for mediuml-scale Solar PV developments if they are appropriately sited. The overall susceptibility to this scale of development is assessed as Medium.	**Medium-High** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides some enclosure. Visual connections with adjacent landscapes increase sensitivity. • Development of this scale is more likely to be visible, and the susceptibility is therefore higher. Solar PV would potentially appear stark in this location.	**Medium-High** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides some enclosure. Visual connections with adjacent landscapes increase sensitivity. • Development of this scale is more likely to be visible, and the susceptibility is therefore higher. Solar PV would potentially appear stark in this location.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 3.2
Landscape Susceptibility Analysis
AD plants

November 2025

thelandscapepartnership

LT A: Rural River Valleys

The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

Five rural river valleys have been identified within South Norfolk. These are: the broad valley of the River Waveney in the south of the district, the narrower valleys of the Tud and Wensum, west of Norwich, the meandering upper reaches of the River Yare/Tiffey south west of Norwich, and the distinctive Tas Valley to the south of Norwich.

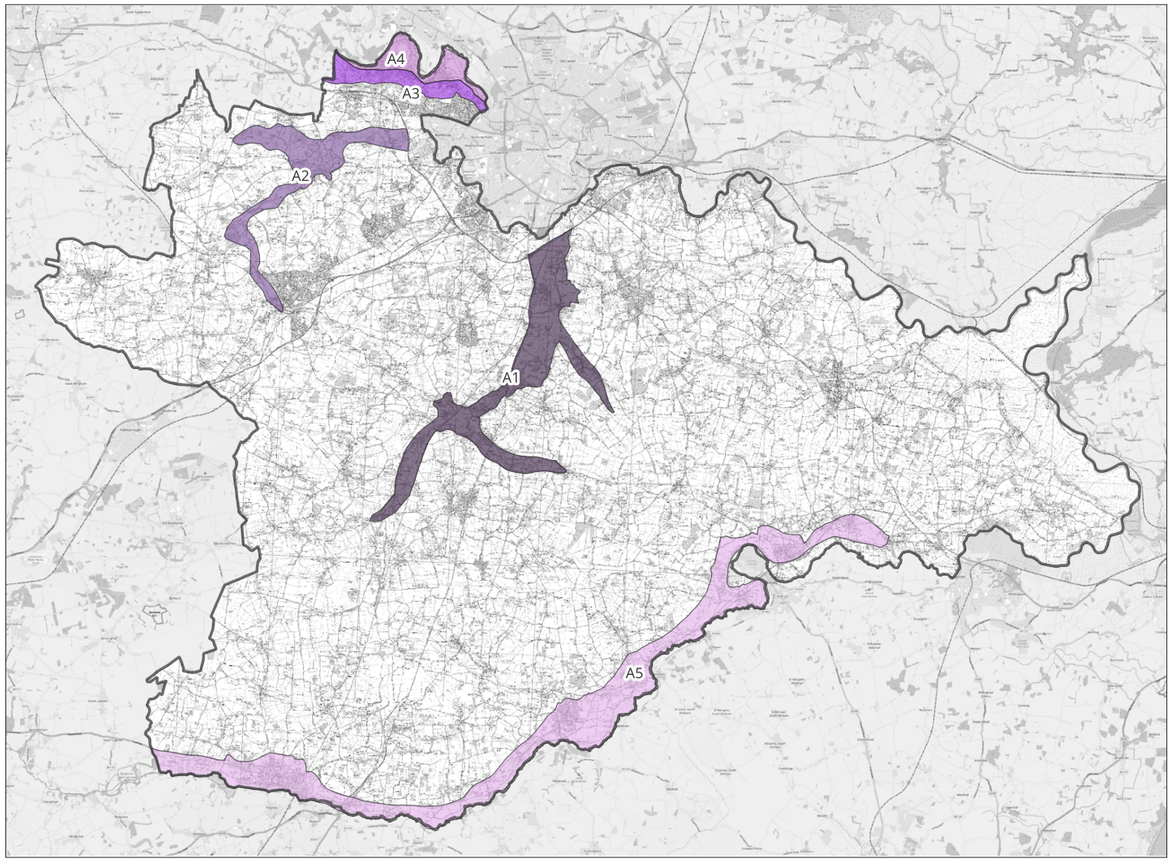
The boundary of this landscape type is defined primarily by topography and corresponds with the upper crest of the valley side, which generally occurs below the 30m AOD contour. Occasionally, the perceived boundary has been affected by cultural features which have transgressed this natural boundary to either extend or reduce the influence of the valley-form character, for example in the valley of the Waveney where the settlements have grown up as an integral part of the valley landscape, although now extend beyond the natural valley line.

Key characteristics

- Distinct valley landform created by glacial and fluvial activity, with wide flat valley floodplains, which create important divisions within the district landscape.
- Semi-enclosed landscape with long views within the valley but restricted views from the valley, creating occasional areas of more intimate character.
- Perceived presence of a river that is often not actually visible within the landscape but which at close-range is seen to be attractive, of significant size and distinct character.
- Willow pollards and lines of poplar flanking ditches and watercourses on the valley floor, plus reeds and marsh in areas.
- Attractive river crossings including fords and old bridges approached by sunken lanes.
- Areas of pastoral floodplain predominantly grazed by cattle, set within the arable landscape that occupies the valley sides.
- Historic quality to areas within the valley landscape due to the presence of visual reminders of the valleys' settled past, particularly the earthworks at Venta Icenorum, watermills, historic river crossings and round-towered churches.
- Settlements predominantly small and nucleated of strong vernacular character with scattered farmsteads on the valley floor or linear settlements at the valley side crest, with a few large towns of 'market town' quality distinct to the Waveney.
- Characteristic vernacular architecture particularly including red brick and Dutch gable ends, windmills, weather-boarded watermills and round towered churches.
- Presence of characteristic ecological assemblages, uncommon or unfound elsewhere in the district, including wetland vegetation, heathland and wet meadows/ pastures.

The individual character areas within this type are listed below:

- A1: Tas Rural River Valley
- A2: Yare/Tiffey Rural River Valley
- A3: Tud Rural River Valley
- A4: Wensum Rural River Valley
- A5: Waveney Rural River Valley



LT A: Rural River Valleys - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • A semi-enclosed landscape with some long views within the valleys but restricted views out. Areas of more intimate character on the valley floor. • Some river valleys less enclosed than others, the Waveney for example is a wide valley which has a more open character.	**Medium-Low** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.	**Medium-Low** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.
Landform • Distinct valley landform created by glacial and fluvial activity with distinct floodplain and shallow valley sides.	**Medium** • The valleys of South Norfolk are typically shallow-sided. • The valley floor is typically undeveloped and would therefore be sensitive to development – which would be out of character. • Some ability to accommodate farm-scale AD plant outside of floodplain.	**High** • The valleys of South Norfolk are typically shallow-sided. • Valley sides tend to have high susceptibility to features such as AD plants which have a semi-industrial character and would be difficult to accommodate. • The valley floor is typically undeveloped and would therefore be sensitive to development – which would be out of character.
Landcover • Distinctive land cover: small-scale field pattern and prevalence of grazed pastures on the valley floor, with mix of arable and pasture on the valley sides, creating a complex landcover pattern. • Characteristic ecological assemblages – reeds and marsh, wet meadows/ pastures, woodland plus areas of heathland. High ecological value recognised in designations (SAC/SSSIs). • Willow pollards and lines of poplar flank ditches and watercourses. • Some areas of active mineral working and open water associated with mineral extraction sites, for example in A3: Tud and A4: Wensum valleys. • The Tas Valley features two historic parks, an iron age hillfort at Tasburgh, and a Roman colony at Venta Icenorum.	**Medium** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be unsuitable for development. The majority of the land within the rural river valleys however is not priority habitat, so developments could potentially avoid this ecological constraint. • A farm-scale AD plant occupies a smaller footprint so is potentially easier to accommodate within the existing landcover pattern.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be unsuitable for development. The majority of the land within the rural river valleys however is not priority habitat, so developments could potentially avoid this ecological constraint.

LT A: Rural River Valleys - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Settlement pattern and human influence • Valleys have historically been a focus for settlement and the valleys contain some historic villages. • The floodplain however tends not to be settled, except for occasional mills. • Settlements predominantly small and nucleated of strong vernacular character. Isolated farms are present on the edges of the floodplain. • The Waveney Valley is generally rural but the area around Diss is more urbanised.	**Low** • Development of this scale could be accommodated within the context of an existing farm complex.	**High** • Plants of this size would have an industrial character which would tend to be inappropriate within the rural landscape.
Perceptual aspects • The river valleys are typically settled, but for the most part this consists of small rural villages, often with historic character recognised through Conservation Area designations, connected by minor roads. • The generally quiet character and low density of settlement contribute to the perception of an intimate, tranquil rural landscape within the River Valleys. • Tranquillity is reduced in the Waveney Valley by the A1066 and the A143. • Tranquillity is also reduced in the middle section of the Yare Valley by the A47.	**Low** • AD plants have some connection to the rural landscape so would have less of an effect on the rural qualities of the area than other forms of development. • If AD plant related to farm wastes only then additional vehicular movements would be minimal.	**Medium** • Development of this scale would have an adverse effect on the rural qualities of the river valleys. • AD plants have little effect on tranquillity but might increase vehicle movements and introduce lighting.
Visual characteristics • Views within the valleys vary from long range and open to some more enclosed, confined views. • Views frequently include landmark features. • Views into adjacent landscapes are for the most part restricted by the ridges marking the limits of the valleys. There are some views into the valleys from the surrounding higher land. • Key views from Waveney Valley into The Broads	**Medium-Low** • Scenic quality is sensitive to development; however, development of this scale would have a limited effect on scenic quality. • Intervisibility between the Waveney Valley and The Broads increases its sensitivity.	**Medium-High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. • Intervisibility between the Waveney Valley and The Broads increases its sensitivity. • The scenic quality is more susceptible to development of this scale, which would be perceived more as industrial development.

LT A: Rural River Valleys - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Skylines • The valley crests form a skyline in views from the valley floor marking the transition to the adjacent landscape type. • In A5: Waveney Valley- a series of churches on the ridgeline form a prominent landmark. • Skyline is usually undeveloped creating a rural context. • Woodland along the valley crest is a key feature of A3: Tud River Valley.	**Medium** • The skylines are susceptible to AD plants, which are likely to include taller elements. • Valley crests and skylines with churches on the ridgeline have high susceptibility to change.	**Medium** • The skylines are susceptible to AD plants, which are likely to include taller elements. • Valley crests and skylines with churches on the ridgeline have high susceptibility to change.
Intactness • Ditches, fens, meadows, riparian vegetation and vernacular buildings create a sense of place. • The Tas Valley has an intact character. Small villages are present just above the floodplain. The character is somewhat influenced by nearby pylons, railway and A-road. • The Yare and Tiffey Valleys have an intact rural character with meadows, wet woodland, and historic parkland. Small villages are also present just above the floodplain. A tranquil character away from the A47, and a strong sense of place. • The Tud Valley is largely undeveloped and the historic pattern is still legible, however the A47 cuts through the pre-existing landscape pattern and weakens the sense of character. The eastern portion of the valley is found within an increasingly urban context. The land use here has changed with the introduction of a golf course at Costessey Park, and paddocks. • The Wensum Valley is partially disturbed by flooded mineral workings in the base of the valley. The valley is largely undeveloped. • The Waveney Valley is undeveloped and largely rural except around Diss. Pattern of meadows, fens and carrs remains intact throughout most of the area. Tranquillity is reduced by the A143, but there is a relatively strong sense of place.	**Medium-Low** • Settlement is found on the valley sides while the floodplain is generally undeveloped. The floodplain then is sensitive to development of all types. • A farm-scale AD plant is in some sense connected to the rural landscape in that it uses agricultural feedstocks. The susceptibility to this form of development is therefore lower.	**Medium-High** • Settlement is found on the valley sides while the floodplain is generally undeveloped. The floodplain then is sensitive to development of all types. • Development of this scale might use non-farm feedstocks, and has less of a connection to traditional rural land uses. Development of this scale would have a negative effect on the intactness of the rural landscape. • An AD plant is unlikely to contribute to the distinctiveness of the local area.

LT A: Rural River Valleys - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA A1: **Tas Rural River Valley**	**Medium-Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Tas Rural River Valley. There are however some sensitivities in terms of habitats and heritage assets, which would need to be avoided.	**High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace grazing marsh this would have a further adverse effect on character. An AD plant of this size is not considered to be compatible with the established characteristics of the Tas Valley, so the susceptibility is assessed as High.
LCA A2: **Yare/Tiffey Rural River Valley**	**Medium-Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Yare/Tiffey Rural River Valley. There are however some sensitivities in terms of habitats and heritage assets which would need to be avoided.	**High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace grazing marsh this would have a further adverse effect on character. An AD plant of this size is not considered to be compatible with the established characteristics of the Yare/Tiffey Valley, so the susceptibility is assessed as High.
LCA A3: **Tud Rural River Valley**	**Medium-Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Tud Rural River Valley. There are however some sensitivities in terms of habitats and heritage assets which would need to be avoided.	**High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace grazing marsh this would have a further adverse effect on character. An AD plant of this size is not considered to be compatible with the established characteristics of the Tud Valley, so the susceptibility is assessed as High.
LCA A4: **Wensum Rural River Valley**	**Medium-Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Wensum Rural River Valley. There are however some sensitivities in terms of habitats and heritage assets such as Costessey Conservation Area.	**High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace grazing marsh this would have a further adverse effect on character. An AD plant of this size is not considered to be compatible with the established characteristics of the Wensum Rural River Valley, so the susceptibility is assessed as High.

LT A: Rural River Valleys - susceptibility to AD plants

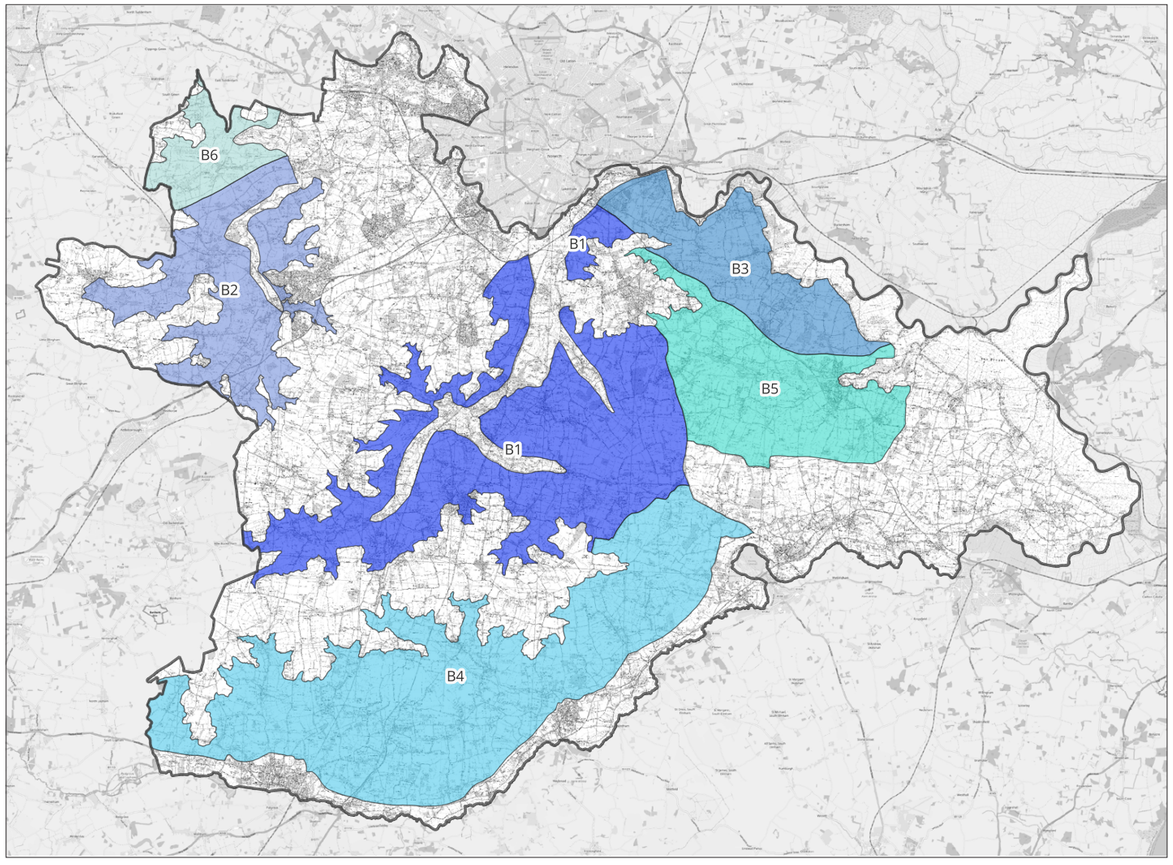
Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA A5: **Waveney Rural River Valley**	**Medium-Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Waveney Rural River Valley. There are however some sensitivities in terms of priority habitats which would need to be avoided.	**High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace grazing marsh this would have a further adverse effect on character. An AD plant of this size is not considered to be compatible with the established characteristics of the Waveney Valley, so the susceptibility is assessed as High.

LT B: Tributary Farmland

The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole of the district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD.

Key characteristics

- Shelving and gently undulating landform created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.
- Tamed and peaceful farmland with scattered small farm woodlands creating a quiet rural landscape.
- Dispersed but evenly distributed settlement pattern of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.
- An intricate network of narrow, winding rural lanes often bounded by banks or ditches with a sense of impenetrability.
- Tributaries elusive- evident but usually hidden within the landscape by topography or trees.
- Medium to large-scale arable farmland of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.
- Remnant parkland, which sometimes relates to former deer parks, plus areas of common land.
- Mixed architectural character comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.
- High proportion of important ecological assemblages protected as SSSIs including woodland, and wetland habitats.



The individual character areas within this type are listed below:

- B1: Tas Tributary Farmland
- B2: Tiffey Tributary Farmland
- B3: Rockland Tributary Farmland
- B4: Waveney Tributary Farmland
- B5: Chet Tributary Farmland
- B6: Yare Tributary Farmland

LT B: Tributary Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • Woodland blocks impart a semi-wooded, semi-enclosed character to much of the area. • Valley landforms offers opportunity for longer views.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.
Landform • Varied landform from flat to gently undulating, sloping towards tributary valleys. • Minor stream valleys cut through the glacial till to create a landscape of restrained variety.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.	**Medium** • The varied landform results in localised areas of higher and lower susceptibility to low developments such as Solar AD. Susceptibility varies according to the degree of slope and the potential screening of the landform. The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.
Landcover • Varied pattern from small scale, intricate networks of fields/hedgerows in tributary valleys and around settlements to large, open fields on higher ground. • An intricate network of narrow, winding lanes often bounded by ditches. • Elusive tributaries, evident but usually hidden within the landscape by topography or trees. • Medium to large-scale arable fields enclosed by sparse hedges with hedgerow trees. Permanent pasture and woodland found within valleys. • Remnant parkland which sometimes relates to former deer parks, plus areas of common land. • High proportion of important assemblages protected as SSSIs including woodland and wetland habitat.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with AD plants. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided. • A farm-scale AD plant occupies a smaller footprint so is potentially easier to accommodate within the existing landcover pattern.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with AD plants. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.

LT B: Tributary Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Settlement pattern and human influence • Dispersed settlement pattern of small villages, hamlets, farmsteads and manors distributed across the landscape. Occasional large agricultural buildings e.g. poultry sheds • Compact villages sheltered within small valleys. • Mixed architectural character comprising modern bungalow development and vernacular architecture with stepped gable ends and other vernacular characteristics. Local building materials such as brick and flint. • Isolated churches. Locally distinctive round towered churches e.g. St Michael's Aslacton • The Chet Tributary Farmland contains the small town of Loddon.	**Low** • Development of this scale could be accommodated within the context of an existing farm complex without altering the sense of human influence.	**Medium** • The landscape does include some modern elements such as poultry sheds, however human influence is limited, so the landscape lies in the middle of the susceptibility spectrum.
Perceptual aspects • For the most part the landscape is peaceful, rural and tranquil. • Roads introduce a local source of movement within the landscape.	**Low** • AD plants have some connection to the rural landscape so would have less of an effect on the rural qualities of the area than other forms of development. • If the AD plant related to farm products only then additional vehicular movements would be minimal.	**Medium** • Development of this scale would have an adverse effect on the rural qualities of the Tributary Farmlands. • AD plants have little effect on tranquillity but might increase vehicular movements and introduce lighting.

LT B: Tributary Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Visual characteristics • Transitional landscape occupying the mid ground between the plateaux and the main river valleys, providing opportunities for long and framed views. • Within these landscapes views are across arable fields to sloping valley sides and down to small-scale wooded tributary valleys. • Framed and open, long-ranging views across the countryside. • Large agricultural buildings can be visually prominent. • Pylons and poles interrupt the landscape wherever they are present, notably towards the northern part of the district. • Important views to landmarks such as Wymondham Abbey and Wicklewood Windmill that provide a sense of place. • Elements of vernacular interest that include round-towered churches. • Generally undeveloped skylines. • Strong visual influence of the adjoining Broads in character areas B3 and B5. • Visual influence of Norwich in character areas B1 and B3.	**Medium-Low** • The type does feature some sensitive views e.g. long-ranging views across the countryside or views to landmarks, however development of this scale would have a limited effect on visual character.	**Medium-High** • Views across arable fields to sloping valley sides and down to small-scale wooded tributary valleys create a moderate to high scenic quality, which indicates higher susceptibility to this form of development. • AD plants include large elements which are potentially visible in the gently undulating landscape. • The presence of historic landmark features increases the susceptibility of the landscape to large structures such as those contained within AD plants.
Skylines • The skyline varies across the landscape type from clear to interrupted by woodland blocks and undulations in landform. • In the enclosed tributary valleys the skyline can include prominent valley crests.	**Medium** • Undeveloped skylines, though not generally prominent or distinctive. • Prominent valley crests are sensitive to development. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility.	**Medium** • Undeveloped skylines, though not generally prominent or distinctive. • Prominent valley crests are sensitive to development. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility.
Intactness • Some roads have been modernised and there has been some modest expansion of settlements. Changing agricultural practices have led to a simplification of the landscape pattern and the loss of some landscape features. The historic pattern is nonetheless legible, and there are relatively few modern elements. The rural character of the area is intact, and there is a moderately strong sense of place.	**Low** • The tanks associated with an AD plant are similar in scale to large agricultural buildings, through the form of the structures is distinctive. • If an AD plant uses farm products only then it can be more easily accepted as part of the rural landscape. • A development of this scale would have a limited effect on the intactness of the rural landscape.	**Medium** • The tanks associated with an AD plant are similar in scale to large agricultural buildings, through the form of the structures is distinctive. • A larger AD plant is likely to use non-farm waste and would have a more industrial character with less connection to the existing rural landscape. Similarly, if bioenergy crops were to replace farm crops there would no longer be any connection to agriculture as such. • A development of this scale would affect the intactness of the rural landscape.

LT B: Tributary Farmland - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA B1: **Tas Tributary Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Tas Tributary Farmlands. Careful siting is still required within the predominantly open landscape.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were also introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Tas Tributary Farmlands are susceptible to this type of development, especially where there are views to heritage assets such as Venta Icenorum, Dunston Hall, or Norwich. The scenic qualities of the landscape are sensitive to this type of development, so susceptibility is assessed as Medium-High.
LCA B2: **Tiffey Tributary Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Tiffey Tributary Farmlands. Careful siting is still required within the predominantly open landscape.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were also introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Tiffey Tributary Farmlands are susceptible to this type of development, especially where there are views to local landmarks including Wymondham Abbey and Wicklewood Windmill. Elements of vernacular interest are vulnerable to generic forms of development which weaken sense of place. The scenic qualities of the landscape are sensitive to this type of development, so susceptibility is assessed as Medium-High.

LT B: Tributary Farmland - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA B3: **Rockland Tributary Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Rockland Tributary Farmlands. Careful siting is still required within the predominantly open landscape.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were also introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Rockland Tributary Farmlands are susceptible to this type of development, especially where there are views to the Yare Valley, or to isolated churches. Elements of vernacular interest are vulnerable to generic forms of development which weaken sense of place. The scenic qualities of the landscape are sensitive to this type of development, so susceptibility is assessed as Medium-High.
LCA B4: **Waveney Tributary Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Waveney Tributary Farmlands. Careful siting is still required within the predominantly open landscape.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were also introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Waveney Tributary Farmlands are susceptible to this type of development, especially where there are views to The Broads or to landmark features such as round-towered or isolated churches. The scenic qualities of the landscape are sensitive to this type of development, so susceptibility is assessed as Medium-High.

LT B: Tributary Farmland - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA B5: **Chet Tributary Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Chet Tributary Farmlands. Careful siting is still required within the landscape.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were also introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Chet Tributary Farmlands are susceptible to this type of development, especially where there are views to The Broads or to landmark features such as round-towered or isolated churches. The scenic qualities of the landscape are sensitive to this type of development, so susceptibility is assessed as Medium-High.
LCA B6: **Yare Tributary Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Yare Tributary Farmlands. Careful siting is still required within the predominantly open landscape.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were also introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Yare Tributary Farmlands are susceptible to this type of development, especially where there are views to landmark features such as round-towered or isolated churches. The scenic qualities of the landscape are sensitive to this type of development, so susceptibility is assessed as Medium-High.

LT C: Tributary Farmland with Parkland

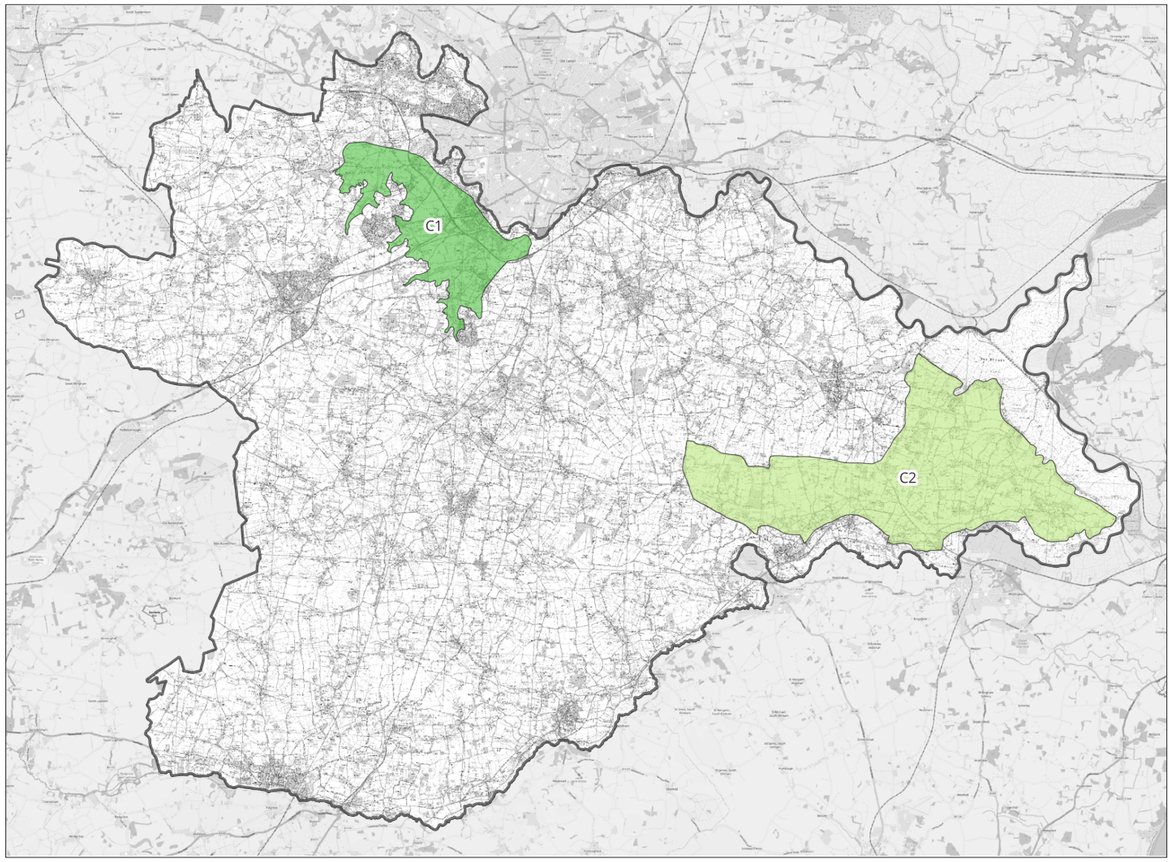
The Tributary Farmland with Parkland Landscape Type occupies two discrete areas of landscape, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very distinctive character throughout much of the area.

Key characteristics

- Gently undulating landform created by the presence of small tributary stream valleys which cut through the glacial till landscape providing a sense of restrained variety
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes, providing varied opportunities for long and framed views
- Presence of large parkland estates particularly associated directly with the tributary valleys. Estate railings, prominent gatehouses, boundary fences and tree-lined avenues with areas of pastoral farmland and horse grazing reveal the presence of the wooded parkland in the wider arable landscape.
- Context of tamed and peaceful arable farmland with scattered small farm woodlands, including ancient woodland, and medium to large-scale fields of sugarbeet and cereal surrounded by sparse hedges and hedgerow trees.
- Small fields of more unusual crops such as sunflowers and asparagus bounded by banks of coppiced willow.
- Dispersed but evenly distributed settlement pattern of small farmsteads and small, nucleated villages.
- An intricate network of small rural roads often bounded by banks or ditches with a sense of impenetrability.
- Tributaries visually elusive and often physically inaccessible- rarely evident because they are hidden within the landscape by topography or trees, particularly where they are associated with the parkland which prevents public access to them.
- Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped and Dutch gable ends and brick and flint.
- Isolated flint round towered churches particularly evident.
- Characteristic large detached halls and manor houses, usually constructed of brick and of high architectural quality, associated with the parkland estates. These are frequently screened by woodland, except at close range.

The individual character areas within this type are listed below:

- C1: Yare Tributary Farmland with Parkland
- C2: Thurlton Tributary Farmland with Parkland



LT C: Tributary Farmland with Parkland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • Open arable landscape is interrupted by areas of woodland. • Areas of woodland associated with estates provide greater enclosure.	**Medium** • Semi-enclosed character is moderately sensitive to development.	**Medium** • Semi-enclosed character is moderately sensitive to development.
Landform • Gently undulating landform created by the presence of small tributary stream valleys which cut through the landscape providing a sense of restrained variety.	**Medium** • The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • The varied landform results in localised areas of higher and lower susceptibility to developments such as AD plants according to the degree of slope.	**Medium** • The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • The varied landform results in localised areas of higher and lower susceptibility to developments such as AD plants according to the degree of slope.
Landcover • Presence of large parkland estates particularly associated with the tributary valleys. Estate railings, prominent gatehouses, parkland belts, tree-lined avenues and areas of pasture reveal the presence of parkland within the wider arable landscape. • Peaceful arable farmland with small ancient woodlands and scattered coverts with medium to large-scale fields of wheat, barley, oilseed rape and sugarbeet surrounded by sparse hedges and hedgerow trees. • An intricate network of small rural roads. • Becks.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with AD plants. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided. • A farm-scale AD plant occupies a smaller footprint so is potentially easier to accommodate within the existing landcover pattern than other forms of development.	**Varying from Medium to High** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with AD plants. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.

LT C: Tributary Farmland with Parkland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Settlement pattern and human influence • Dispersed but evenly distributed settlement with a pattern of farmsteads and small villages. • Sparse settlement pattern across C2. C1 Yare Tributary Farmland somewhat more settled with larger village of Cringleford as well as Norfolk & Norwich Hospital and A47. • Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped gables and brick and flint. • Vernacular architectural character, predominantly of rural buildings and estate dwellings. More modern dwellings are found in larger villages.	**LCA C1: Medium** **LCA C2: Low** • C1 Yare Tributary Farmland with Parkland already displays considerable human influence, however it also lies within the Norwich Southern Bypass Protection Zone so is sensitive to development which would reduce the openness of the area. • C2 has a farmed character. Farm-scale AD is related to the agricultural landscape so it is considered that the susceptibility to this form of development is low.	**LCA C1: Medium-High** **LCA C2: Medium-High** • An AD plant of this scale would have a considerable influence on the openness of the landscape and introduce a strong sense of human influence. Susceptibility to this form of development is therefore judged as Medium-High.
Perceptual aspects • Tamed arable farmland. • C2 is a peaceful rural landscape. C1 is adversely influenced by the Norwich Southern Bypass and the A11. • Pylons and the A47 negate any sense of remoteness within C1. There is however a sense of remoteness within C2, particularly adjacent to The Broads.	**LCA C1: Low** **LCA C2: Medium** • The lack of remoteness or tranquillity within C1 reduces susceptibility. • AD plants have some connection to the rural landscape so would have less of an effect on the rural qualities of the area than other forms of development.	**LCA C1: Medium-High** **LCA C2: Medium-High** • Although C1 lacks remoteness or tranquillity the landscape lies within the Norwich Southern Bypass Protection Zone and is therefore sensitive to development which compromises the openness of the landscape. • A larger AD plant would source the feedstock from several farms, or from non-farm sources, so cannot be seen as an extension of an existing farm complex. • A development of this size would affect the rural qualities of the landscape. • A larger AD plant would potentially increase traffic and introduce lighting which would affect tranquillity and dark skies.

LT C: Tributary Farmland with Parkland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Visual characteristics • Views to wide open horizons and long views across denuded hedgerow boundaries and arable farmland from higher areas. • Prominent views to historic features such as isolated and round-towered churches. • Views framed and broken by woodland blocks and estate parkland with large manor buildings. • Intermittent, long views into The Broads from C2. • Views to Norwich in particular from the southern bypass which bisects C1. • Characteristic large halls though frequently screened by woodland. • Isolated round towered flint churches particularly evident. • Mixed architectural character comprising modern development and vernacular architecture.	**Medium-Low** • The type does feature some sensitive views e.g. views to The Broads, or to local landmarks, however development of this scale would have a limited effect on visual character. • Development which is related to an existing farm complex would be seen as part of the rural landscape.	**Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality, which indicates higher susceptibility to development. • AD plants include large elements which are potentially visible in the gently undulating landscape. • The presence of historic features increases susceptibility to large structures such as those contained within AD plants. • Intervisibility between LCA C2 and the Broads increases the sensitivity of this area.
Skylines • In places interrupted by woodland, pylons and posts. • Views to parkland edges and woodland. • Intermittent long views to development at the City of Norwich and Norwich Southern Bypass (from C1).		**C1: Low** **C2: Medium-Low** • Existing skylines in C1 are already influenced by pylons, and the susceptibility is considered to be low. • Skylines in C2 have some influence from existing pylons.

LT C: Tributary Farmland with Parkland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Intactness • Intactness varies. Some areas have experienced considerable change with the introduction of the Norwich Southern Bypass and the expansion of settlements such as Cringleford, and the introduction of pylons and other development. • Elsewhere, there is a much stronger and more intact rural character.	**LCA C1: Low** **LCA C2: Low** • The tanks associated with an AD plant are similar in scale to large agricultural buildings, through the form of the structures is distinctive. • If an AD plant uses farm products only then it can be more easily accepted as part of the rural landscape. • A development of this scale would have a limited effect on the intactness of the rural landscape.	**LCA C1: Medium** **LCA C2: Medium-High** • The tanks associated with an AD plant are similar in scale to large agricultural buildings, through the form of the structures is distinctive. • A larger AD plant is likely to use non-farm waste and would have a more industrial character with less connection to the existing rural landscape. Similarly, if bioenergy crops were to replace farm crops there would no longer be any connection to agriculture as such. • A development of this scale would affect the intactness of the rural landscape. • AD plants utilise standard elements which would not make any contribution to local distinctiveness. • The stronger character of C2 has increased susceptibility to all forms of development. • The more fragmented landscape pattern of C1 leads to a lower sensitivity.

LT C: Tributary Farmland with Parkland - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA C1: **Yare Tributary Farmland with Parkland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Tributary Farmland with Parklands. There are still some sensitivities relating to views from the southern bypass towards Norwich, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. The key characteristics of the Yare Tributary Farmland with Parklands are susceptible to this type of development, especially where there are views from the southern bypass, or to Norwich. The scenic qualilties of the area are reduced by existing development, however the remaining rural areas are vulnerable to change, so the overall susceptibility is assessed as Medium-High.
LCA C2: **Thurlton Tributary Farmland with Parkland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Tributary Farmland with Parklands. There are still some sensitivities relating to historic parks and sensitive views, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. The key characteristics of the Thurlton Tributary Farmland with Parklands are susceptible to this type of development, especially where there are views to historic estates, churches, or adjacent landscapes. The scenic qualities of the landscape are sensitive to this type of development, and the sense of place would be diluted by generic forms of development. Susceptibility then is assessed as Medium-High.

LT D: Settled Plateau Farmland

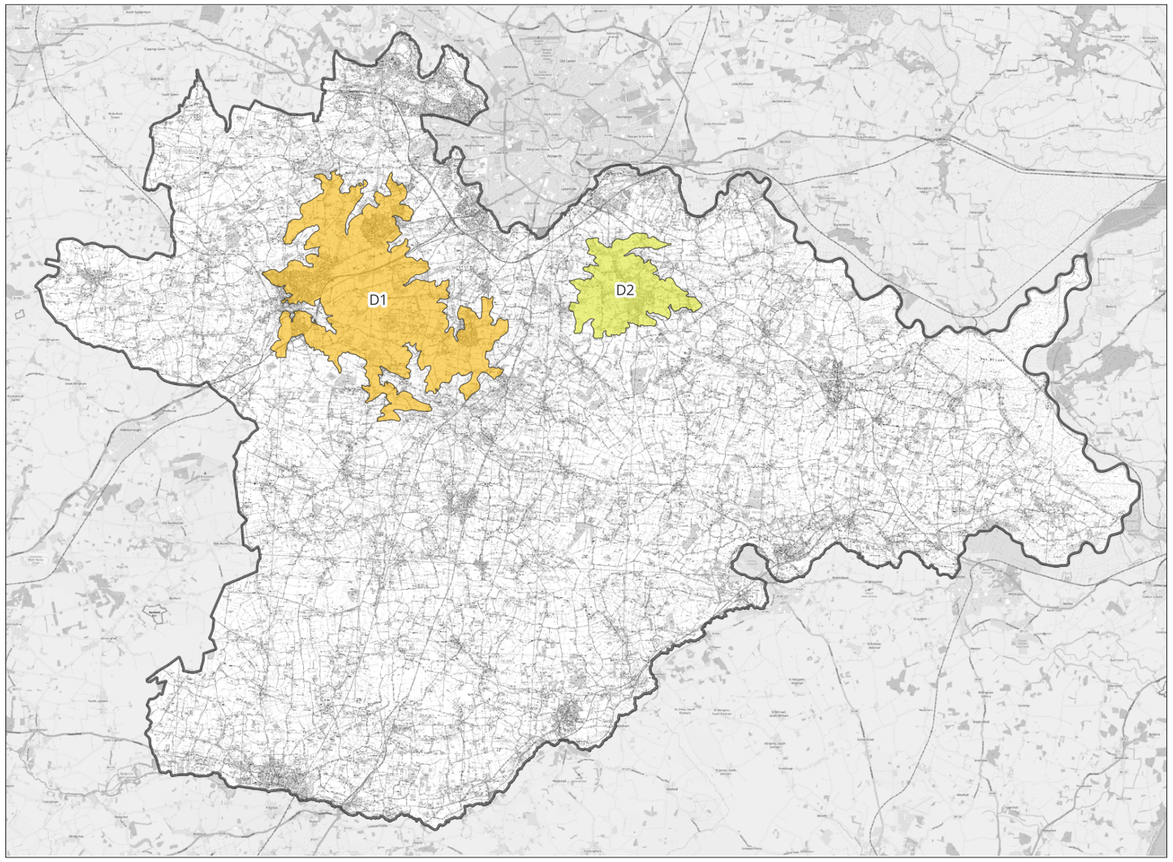
There are two areas of the Settled Plateau Farmland Landscape Type, one to the east and one to the west of the Tas Valley around the settlements of Wymondham and Poringland respectively. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The boundaries of these areas are largely represented by the 40 and 50m AOD contours. However, small and fragmented areas above the 40m contour have not been classified as Settled Plateau Farmland.

Key characteristics

- Distinct flat to gently rising elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture principally characteristic swathes of cereal, oilseed rape and sugarbeet.
- Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements.
- Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. Elements of plateau interior not visible except from other plateau areas or where tall intrusive elements are present.
- Mature remnant oak hedgerow trees are features in the agricultural landscape however hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.
- Presence of large communications masts which interrupt of the sense of openness yet provide distinct landmarks.
- Settled landscape mostly comprising large edge-of-plateau towns and large villages with other smaller nucleated settlements dispersed across the plateau.
- Some evidence of historical features within the landscape including isolated churches (some of which are round-towered), moats, historic parkland and some farm ponds.
- Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development.

The individual character areas within this type are listed below:

- D1: Wymondham Settled Plateau Farmland
- D2: Poringland Settled Plateau Farmland



LT D: Settled Plateau Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • Generally open landscape. Poor hedgerows accentuate the openness of the landscape. • Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements. • Wooded character in parts provides enclosure, particularly around settlements.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.
Landform • Distinct flat to gently rolling, elevated landform as a result of the simple underlying geology. • The area centred on Poringland has the greatest variation, rising up to a gentle 'dome' at 75m AOD which is one of the most elevated areas in the district. • The boundaries of these areas are largely represented by the 40 and 50m AOD contours – the plateau edges are highly visible from adjacent landscapes.	**Varying from Low to High** • The simple, flat landform is less sensitive to this type of development. • The plateau edges however would be sensitive to AD plants, which would be exposed and difficult to screen.	**Varying from Low to High** • The simple, flat landform is less sensitive to this type of development. • The plateau edges however would be sensitive to AD plants, which would be exposed and difficult to screen.
Landcover • Large arable fields characterised by swathes of cereals, oilseed rape and sugarbeet. • Some evidence of historic landscape features including moats, historic parkland and farm ponds. • Woodland blocks tend to be associated with halls/remnant parkland	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.

LT D: Settled Plateau Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Settlement pattern and human influence • Historically somewhat sparsely settled but with some dispersed settlement including green-side settlement. • The modern day settlement pattern includes the town of Wymondham and a number of large villages. • Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development. • Wymondham and Mulbarton retain a historic character despite more recent peripheral development, whereas Poringland and Hethersett have a much more modern character (characterised by post-war bungalow development). • Former airfield at Hethel (now site of motor works).	**Medium-Low** • More developed character is apparent in the vicinity of Wymondham, Hethersett and the A11.	**Medium** • Areas of countryside between settlements are sensitive to the urbanising effect of a larger AD plant.
Perceptual aspects • A number of large settlements are present and there is therefore little sense of remoteness. • The A11 cuts across the Wymondham Settled Plateau Farmlands and introduces a source of noise, movement and modernity. • Whilst this is a settled landscape the villages are set within a rural landscape and there is a sense of countryside.	**Low** • A farm-scale AD plant which is related to agricultural activities would have less of an effect on the rural qualities of the landscape than other forms of development.	**Medium** • The remaining areas of countryside are sensitive to urbanisation. • A larger AD plant may use non-farm feedstocks and would be more industrial in character. This scale of plant would then have an adverse effect on the perceptions of rurality. • A larger AD plant would use feedstocks from several farms or from non-farm sources. Increased traffic could affect the tranquillity of the area. • Lighting would affect dark skies.

LT D: Settled Plateau Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Visual characteristics • Strong open horizons – the archetypal 'Norfolk' Landscape. • Illusions of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape. • Views to large communication masts, settlement on the plateau edge and areas of parkland and woodland blocks. • Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. • D2 plateau is very prominent in views from the surrounding landscape. • Mast at Poringland has high visibility but also serves as a landmark. • A number of large-scale farm buildings including grain towers and silos that punctuated the horizon (particularly near Silfield).	**Varying from Low to Medium** • The interior of the plateau is not considered particularly sensitive to this form of development, but exposed plateau edges would have a higher sensitivity.	**Varying from Medium to High** • AD plants have a moderate height (assumed to be up to 14m) which is comparable to modern farm structures. • The prominent nature of D2 makes it sensitive to views from adjoining landscape character areas. • The edge of D1 is potentially sensitive to views from adjoining landscapes. The interior of the plateau may be less sensitive to AD plants, particularly where they are seen as part of a large-scale landscape, or where there is strong enclosure from existing woodland.
Skylines • Strong open horizons – the archetypal 'Norfolk' landscape. • Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.	**Medium** • The long views to open horizons are sensitive to taller forms of development including AD plants. • Mitigation planting could also affect the characteristic open horizons.	**Medium** • The long views to open horizons are sensitive to taller forms of development including AD plants. • Mitigation planting could also affect the characteristic open horizons.

LT D: Settled Plateau Farmland - susceptibility to AD plants

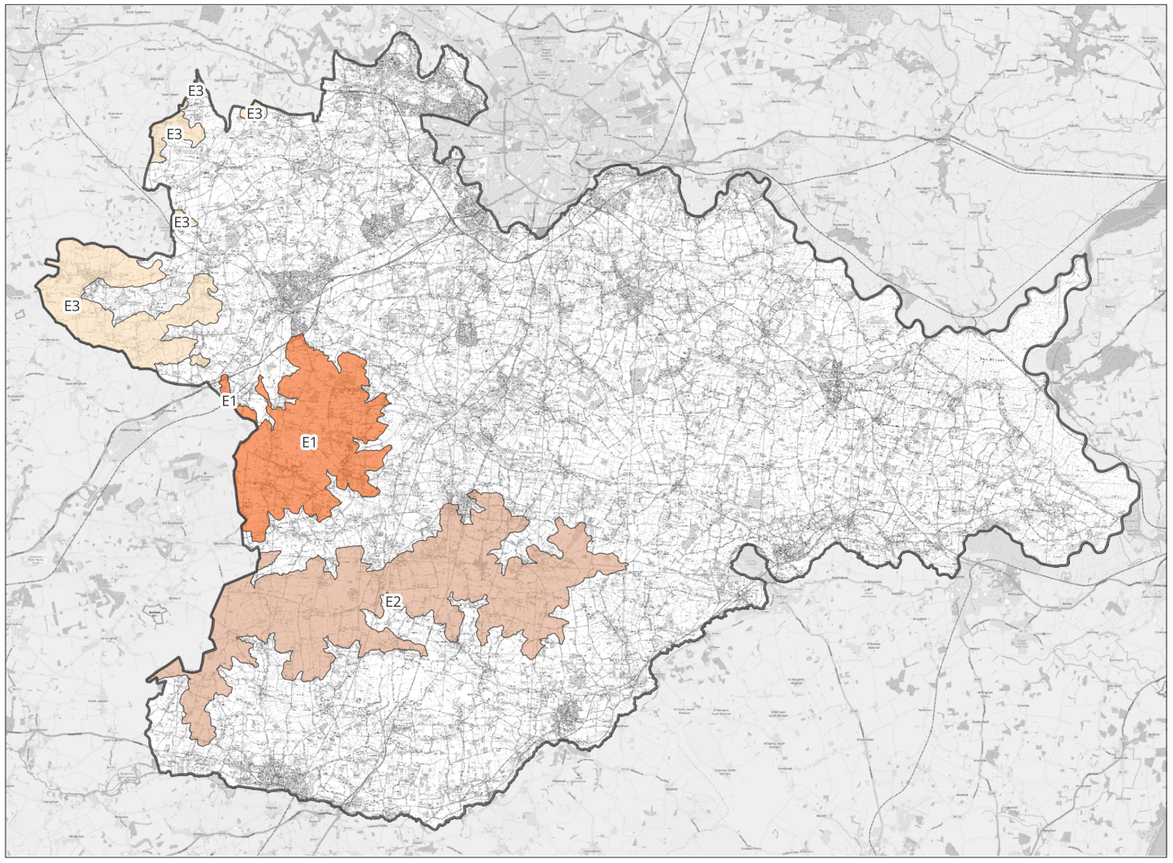
Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA D1: **Wymondham Settled Plateau Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Settled Plateau Farmlands. There are still some sensitivities relating to the openness of the landscape, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace food crops this would have a further, subtle effect on character with characteristic cereal crops being replaced. The key characteristics of the Wymondham Settled Plateau Farmlands are susceptible to this type of development, especially where there are views to Wymondham Church. The characteristic open views are sensitive to this type of development, as are the gaps between settlements. Susceptibility then is assessed as Medium-High.
LCA D2: **Poringland Settled Plateau Farmland** **Overall susceptibility**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the Poringland Settled Plateau Farmlands. There are still some sensitivities relating to the openness of the landscape, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. If bioenergy crops were to replace food crops this would have a further, subtle effect on character with characteristic cereal crops being replaced. The key characteristics of the Poringland Settled Plateau Farmlands are susceptible to this type of development, especially where there are views to and from adjacent landscapes. The characteristic open views are sensitive to this type of development, and susceptibility is assessed as Medium-High.

LT E: Plateau Farmland

The Plateau Farmland Landscape Type occurs in the western part of the district in three principal areas, all of which continue beyond the South Norfolk boundary into the adjoining Breckland District. The Plateau Farmlands are defined by their elevation and all are primarily delineated by the 50m contour. However, it should be noted that not all areas above the 50m contour line have been classified as Plateau Farmland due to differing land use patterns.

Key characteristics

- Distinct flat and elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture with characteristic swathes of cereal, oilseed rape and sugarbeet monoculture.
- Sense of openness and exposure due to the elevation and scarcity of enclosing elements.
- Long views of the district from the plateau edges and shorter internalised plateau views. Inner plateau largely invisible from other areas.
- Mature remnant oak hedgerow trees are features in the agricultural landscape. However, hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Straight plateau-top roads characteristically lined with attractive wide grass verges and ditches.
- Wooded horizons as a result of visual merging of hedgerow trees and woodlands in the landscape, which integrate settlements into the landscape.
- Presence of tall structures including masts and poles which disturb the rural scene interrupting the sense of openness.
- Sparsely settled landscape mostly comprising larger edge-of-plateau settlements, small nucleated and long linear settlements.
- Presence of historic features within the landscape including isolated church, moats, and farm ponds.
- Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development.
- Disused air fields



The individual character areas within this type are listed below:

- E1: Ashwellthorpe Plateau Farmland
- E2: Great Moulton Plateau Farmland
- E3: Hingham-Mattishall Plateau Farmland

LT E: Plateau Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • Sense of openness and exposure due to the elevation and scarcity of enclosing elements. • The flatness of the plateau creates a strong sense of openness with large skies and distant horizons.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.
Landform • Distinct flat and elevated plateau landform. • Defined by the elevation and primarily delineated by the 50m contour.	**Varying from Low to High** • The simple, flat landform is less sensitive to this type of development. • The plateau edges however would be sensitive to AD plants, which would be exposed and difficult to screen.	**Varying from Low to High** • The simple flat landform is less sensitive to this type of development. • The plateau edges however would be sensitive to AD plants, which would be exposed and difficult to screen.
Landcover • Large fields of arable monoculture with characteristic swathes of wheat, barley, oilseed rape and sugar beet. • Mature hedgerow oaks are features in the agricultural landscape. However hedgerows have been severely degraded or lost, leading to a much simplified landscape. • Generally an early enclosed landscape, but with significant areas of common/ heath, many of which were enclosed in the C19. Some remaining commons. • Mixed field patterns relating to the history of enclosure.	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.
Settlement pattern and human influence • Dispersed settlement pattern. Common-edge settlement, hamlets and small nucleated villages. Many small halls, often isolated, with moats. No large parklands. • Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development. • Linear settlements occur along roads with some vernacular buildings intermixed with more modern development. • Disused airfields. • Occasional tall structures including wind turbines.	**Low** • A farm-scale AD plant would be similar in nature to existing farm buildings, which suggests low susceptibility to this scale of development.	**Medium-High** • Little industrial or modern development within the landscape. The landscape is then sensitive to development of this scale.

LT E: Plateau Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Perceptual aspects • A peaceful rural character created by the absence of main roads and development. • Quiet rural lanes dissect the landscape. • The A140 cuts north-south through part of E2.	**Low** • A farm-scale AD plant would relate to existing agricultural activities, and would therefore have little effect on the rural qualities of the landscape. • If an AD plant were to use farm products only it is unlikely to lead to a significant increase in traffic.	**Medium-High** • The peaceful, rural character is sensitive to development of this scale. • A larger AD plant would use feedstocks from several farms or from non-farm sources which potentially leads to increased traffic. • Lighting could affect dark skies.
Visual characteristics • Long views of the district from the plateau edges take in a wide panorama of South Norfolk and these are some of the best in the district. • Shorter internalised plateau views are to farm buildings and isolated churches. • From higher areas of plateau and from the plateau edge there are views to adjacent landscapes including to churches in adjoining areas.	**Varying from Low to Medium** • The plateau edges are sensitive to views from adjoining landscape character areas while the interior of the plateau is less sensitive. • A farm-scale AD plant connected to existing farm buildings would have little effect on the visual characteristics of the plateau farmlands.	**Varying from Medium to High** • AD plants have a moderate height (up to 14m) which is comparable to modern farm structures. • The plateau edges are sensitive to views from adjoining landscape character areas. • The interior of the plateau is less sensitive. A development of this size and scale however is likely to compromise the characteristic sense of openness. • Whilst smaller AD plants can be seen as part of the agricultural landscape a larger plant would have a more industrial character which is less compatible.
Skylines • The flatness of the plateau creates a strong sense of openness with vast skies and dramatic horizons. • Expansive skies are a defining feature with distant views and farm buildings are visible in the open landscape. • 360 degree horizon in places.	**Medium** • The long views to open horizons are sensitive to taller forms of development including AD plants. • Mitigation planting could also affect the characteristic open horizons.	**Medium** • The long views to open horizons are sensitive to taller forms of development including AD plants. • Mitigation planting could also affect the characteristic open horizons.
Intactness • The landscape has experienced ongoing change including enclosure in the C19 and rationalisation in the C20. Some elements of the landscape however can be traced back to the medieval era and there is some sense of historic continuity. Modern elements are relatively few. • Though there have clearly been changes in land management, including the amalgamation of fields, the landscape retains a strong rural character.	**Low** • A farm-scale AD plant is related to the rural landscape and is similar in scale to modern farm buildings. • There is potential to accommodate an AD plant of this scale in connection with existing farm buildings.	**Medium-High** • Development is nucleated and there is a clear distinction between urban areas and the countryside. • An AD plant of this size would have a more industrial character, and the scale of the plant would affect the intactness of the countryside. The strong rural character of the plateau farmlands indicates higher sensitivity to this type of development.

LT E: Plateau Farmland - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA E1: **Ashwellthorpe Plateau Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the rural character of the Ashwellthorpe Plateau Farmlands. There are still some sensitivities relating to the openness of the landscape, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. Were bioenergy crops to be introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Ashwellthorpe Plateau Farmlands are susceptible to this type of development, especially where there are panoramic views. The rural landscape is sensitive to industrialisation, and the characteristic open views also increase sensitivity. Susceptibility then is assessed as Medium-High.
LCA E2: **Great Moulton Plateau Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the rural character of the Great Moulton Plateau Farmlands. There are still some sensitivities relating to the openness of the landscape, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. Were bioenergy crops to be introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Great Moulton Plateau Farmlands are susceptible to this type of development, especially where there are panoramic views. The rural landscape is sensitive to industrialisation, and the characteristic open views also increase sensitivity. Susceptibility then is assessed as Medium-High.
LCA E3: **Hingham-Mattishall Plateau Farmland**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the rural character of the Hingham-Mattishall Plateau Farmlands. There are still some sensitivities relating to the openness of the landscape, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. Were bioenergy crops to be introduced this would have a further subtle effect on character, with characteristic cereal crops being replaced. The key characteristics of the Hingham-Mattishall Plateau Farmlands are susceptible to this type of development, especially where there are views to adjacent landscapes. The rural landscape is sensitive to industrialisation, and the characteristic open views also increase sensitivity. Susceptibility then is assessed as Medium-High.

LT F: Valley Urban Fringe

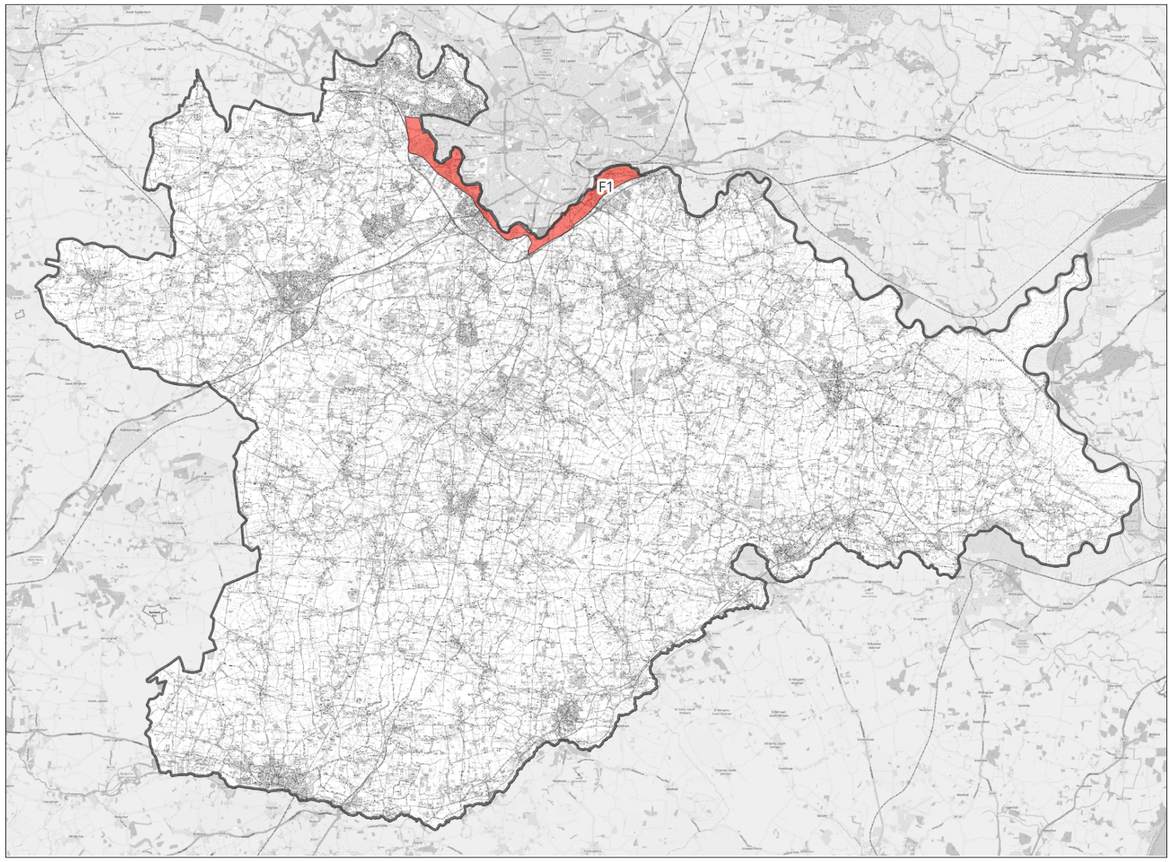
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area within the jurisdiction of Norwich City Council. The crest of the slope at about 30m AOD represents the boundary of this landscape type; as it is at this point that the character changes to a valley landform, focused on the River Yare.

Key characteristics

- Distinctive broad meandering valley form with wide flat flood plain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.
- Glacial gravel deposits, which have been exploited resulting in remnant flooded gravel workings along the valley floor.
- Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland creating a well wooded appearance.
- Inaccessible valley floor with relatively few river crossings.
- Evidence of early human activity, for example the henge at Arminghall and presence of numerous Scheduled Ancient Monuments.
- Few distinctive vernacular buildings mainly due to the relative lack of prewar settlement within the valley.
- Distinct absence of settlement within the valley, apart from discrete areas nestled around river crossings, although influenced by Norwich urban fringe along parts of the upper valley sides.
- Impenetrability resulting in a sense of remoteness and solitude- remarkable given the closeness of a major city.
- Large institutional buildings occasionally visible from the valley.

There is one Landscape Character Area within this type:

- F1: Yare Valley Urban Fringe



LT F: Valley Urban Fringe - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • A sense of containment. • Wide, fairly flat floodplain with enclosing valley sides. • Trees and woodland also contribute to enclosure in places.	**Medium** • Semi-enclosed landscape with medium susceptibility. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.	**Medium** • Semi-enclosed landscape with medium susceptibility. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.
Landform • Wide, fairly flat floodplain with enclosing valley sides. • The sides of the valley are fairly steep in places.	**Medium** • Floodplain is flat, but is subject to flooding constraint. • Some potential to accommodate farm-scale AD plant outside of floodplain.	**High** • Floodplain is flat, but is subject to flooding constraint. • A larger AD plant would be difficult to accommodate on the valley side without major earthworks. The plant would also be difficult to screen.
Landcover • Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland. Mixed woodlands and shelterbelts occur on the valley sides creating a well-wooded appearance. • Glacial gravel deposits, which have been and continue to be exploited resulting in remnant flooded gravel workings along the valley floor. • Natural character. Nature reserves such as Whitlingham Marsh. The river itself is a chalk river. • Presence of recreational landscapes including the country park at Whitlingham and playing fields at UEA. • Inaccessible valley floor with relatively few river crossings.	**Medium** • Semi-natural habitats within floodplain have higher susceptibility. • Valley sides however are less sensitive in terms of landcover. • A farm-scale AD plant occupies a small footprint so is potentially easier to accommodate within the existing landcover pattern.	**Varying from Medium to Medium-High** • Semi-natural habitats within floodplain have higher susceptibility. • The valley contains rare and valuable habitats such as marsh which would be unsuitable for development. • Valley sides however are less sensitive in terms of landcover.
Settlement pattern and human influence • Highly influenced by Norwich urban fringe along parts of the upper valley sides. • A number of large institutional buildings in or adjacent to the valley. • Green buffer and comprehensible development edge to the City of Norwich. • Floodplain has remained undeveloped.	**Low** • Floodplain is largely undeveloped but development is present on the valley-sides. Development of this scale could be accommodated within the context of an existing farm complex.	**Medium** • Floodplain is sensitive to development, which would be out of character. Valley-sides do feature development however development of this scale is likely to weaken the perception of the Yare Valley as a green buffer.

LT F: Valley Urban Fringe - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Perceptual aspects • Noise of traffic on the Norwich Southern Bypass disturbs the tranquillity of the valley. Overall, despite these urban influences, the valley is mostly quiet and secluded.	**Low** • Little sense of tranquillity or remoteness. • Proximity to urban area is apparent. • Lighting from urban area.	**Medium-Low** • Development of this scale potentially introduces additional lighting, movement and noise, however the existing conditions indicate lower susceptibility.
Visual characteristics • Views are variable with open and enclosed views within the valley with large institutional buildings occasionally visible. • Views across the valley towards the City of Norwich. Valley performs an important visual function in creating a setting to the city. • Some enclosure from valley sides and vegetation.	**Medium-Low** • Development of this scale would have a limited effect on the setting of Norwich.	**Medium-High** • Larger AD plants represent substantial structures which could potentially block or interfere with views to Norwich. Mitigation planting could also block views.
Skylines • The valley crests form a skyline in views from the valley floor. • Mixed woodland blocks and shelter belts occur on the valley sides creating a well-wooded skyline.		**Low** • The well wooded skylines means that development is unlikely to be visible on the skyline. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility. • Generally low susceptibility, but valley crests are sensitive to development.

LT F: Valley Urban Fringe - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA F1: **Yare Valley Urban Fringe**	**Low** • A farm-scale AD plant which is connected to existing farm buildings could be seen as an extension of farming practices and would not therefore alter the fundamental characteristics of the landscape. There are still some sensitivities relating to key views to and from Norwich, and careful siting would therefore be required.	**Medium-High** • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. The key characteristics of the Yare Valley Urban Fringe are susceptible to this type of development, especially where there are views to and from Norwich. The scenic qualities of the area are reduced by existing development, however the remaining rural areas are vulnerable to change, so the overall susceptibility is assessed as Medium-High.

LT G: Fringe Farmland

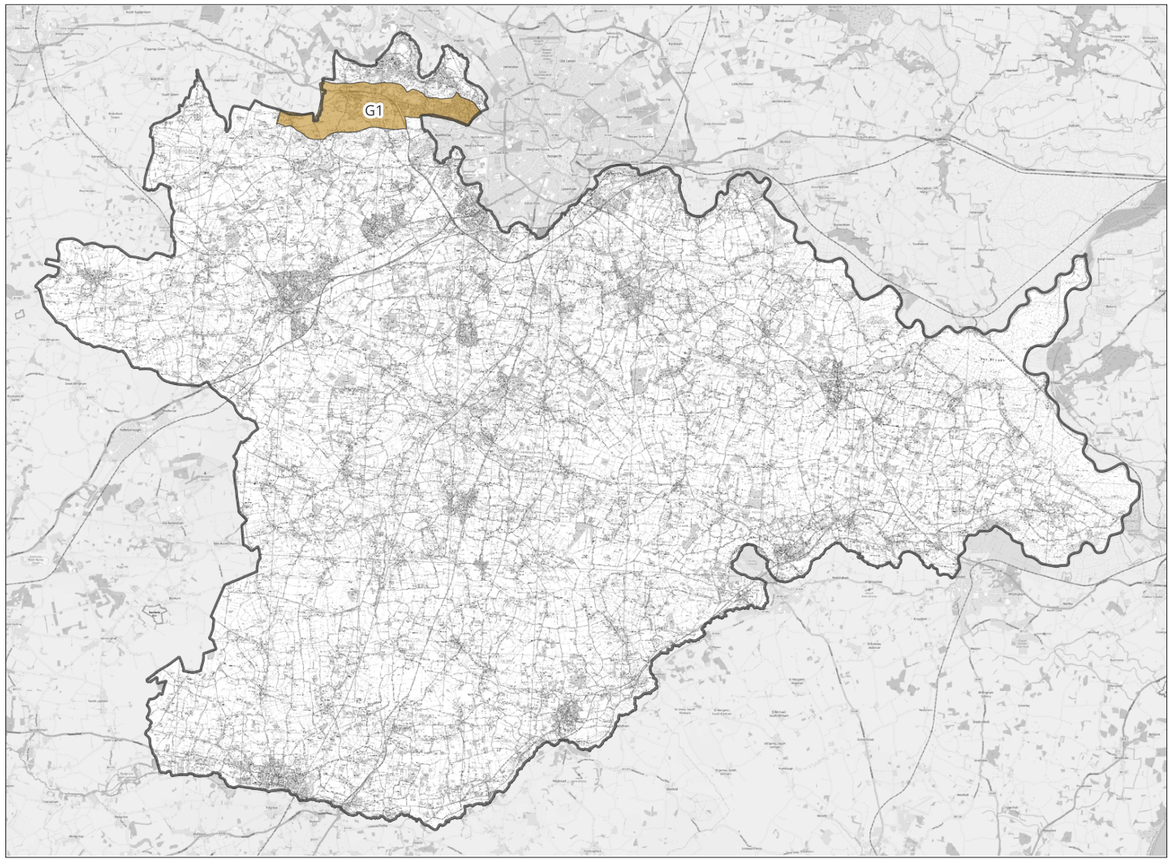
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare Rural River Valley to the south. It is defined as a distinctive landscape as a result of its relatively developed character and eroded farmland context.

Key characteristics

- Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline;
- History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas.
- Use of the area for urban fringe uses including a park and ride scheme (under construction), retail warehouses, a golf course and the Royal Norfolk Showground.
- Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton.
- Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.
- Absence of large wooded areas.
- Norwich Southern Bypass is a major feature of the area.

There is one Landscape Character Area within this type:

- G1: Easton Fringe Farmland



LT G: Fringe Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Sense of enclosure • This landscape can feel exposed in places as a consequence of the elevated ridge topography and relatively low–level of woodland.	**Varies** • Areas of localised enclosure would have lower susceptibility. • The more open and exposed areas have higher susceptibility.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • The more open and exposed areas have high susceptibility.
Landform • Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline. • Undulating landscape with a distinct ridge top.	**Medium** • Ridge landform is sensitive but there is some potential to accommodate farm-scale AD in connection with an existing farm complex.	**High** • The ridge and undulating landform is sensitive. • A larger AD plant would sit awkwardly in relation to the topography and would potentially appear as a stark addition to the landscape.
Landcover • Defined predominantly by farmland with urban and urban fringe development. A degraded farmland context. • History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas. • Urban fringe uses including a park and ride scheme, retail warehouses, a golf course and the Royal Norfolk Showground. • Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.	**Medium-Low** • Fragmented landscape pattern has lower susceptibility to change.	**Varies** • Fragmented landscape pattern has lower susceptibility to change. • The more rural parts of the area have moderate sensitivity.
Settlement pattern and human influence • Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton. • Relatively developed character. • Retail warehouses and supermarkets on edge of town.	**Low** • Significant levels of settlement indicate lower susceptibility.	**Medium-Low** • Significant levels of settlement indicate lower susceptibility. • Development of this scale would nonetheless be substantial and would introduce additional human influence to the landscape.

LT G: Fringe Farmland - susceptibility to AD plants

Landscape attribute	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
Perceptual aspects • Not a remote or tranquil landscape. Recent construction and land use activities have had significant effect upon the rural character. • The Norwich Southern Bypass introduces a corridor of noise and movement. Other roads of the area retain a strong rural character.	**Low** • Qualities such as tranquiliity and remoteness are unlikely to be affected by this type of development.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.
Visual characteristics • There are views from the ridge into the adjacent valley landscapes of the Tud and the valley of the rural Yare with its flooded gravel workings. • The ridge is a locally prominent feature of the landscape and is visible from the valleys of the Yare and Tud and the surrounding tributary valley landscape.	**Medium-Low** • The ridge is a sensitive feature, however careful siting could limit the effect.	**High** • The existing visual characteristics are more susceptible to this scale of development. • The ridge is sensitive to this form of development, which would appear stark. • Views to and from the adjacent valley landscapes increase sensitivity.
Skylines • Skyline varies, sometimes formed by distant views to adjacent landscapes but often interrupted by development and shelterbelts.	**Medium-Low** • More developed parts of the area do not feature important or characteristic skylines and are less susceptible to change. • The ridge however forms an important part of the skyline in views from adjacent landscapes. • The presence of pylons reduces the susceptibility of the skyline.	**Medium-Low** • More developed parts of the area do not feature important or characteristic skylines and are less susceptible to change. • The ridge however forms an important part of the skyline in views from adjacent landscapes. • The presence of pylons reduces the susceptibility of the skyline.

LT G: Fringe Farmland - susceptibility to AD plants

Overall susceptibility	Farm-scale AD plant, single or double tank system, up to 1ha	Larger AD plant, over 1ha
LCA G1: **Easton Fringe Farmland**	**Low** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides moderate enclosure. • A development of this size would have a limited effect on the key characteristics of the Easton Fringe Farmland. There are still some sensitivities relating to the ridge topography and views from adjacent landscapes, and careful siting would therefore be required.	**Medium-High** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides moderate enclosure. Views from adjacent landscapes increase sensitivity. • An AD plant of this size would have a more industrial character and is unlikely to be related to a single farm. A larger AD plant would potentially appear stark in this location. The effects on the landscape would be harder to mitigate, and the susceptibility to this scale of development is therefore higher.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 3.3
Landscape Susceptibility Analysis
Battery Storage

November 2025

thelandscapepartnership

LT A: Rural River Valleys - susceptibility to Battery Storage

The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

Five rural river valleys have been identified within South Norfolk. These are: the broad valley of the River Waveney in the south of the district, the narrower valleys of the Tud and Wensum, west of Norwich, the meandering upper reaches of the River Yare/Tiffey south west of Norwich, and the distinctive Tas Valley to the south of Norwich.

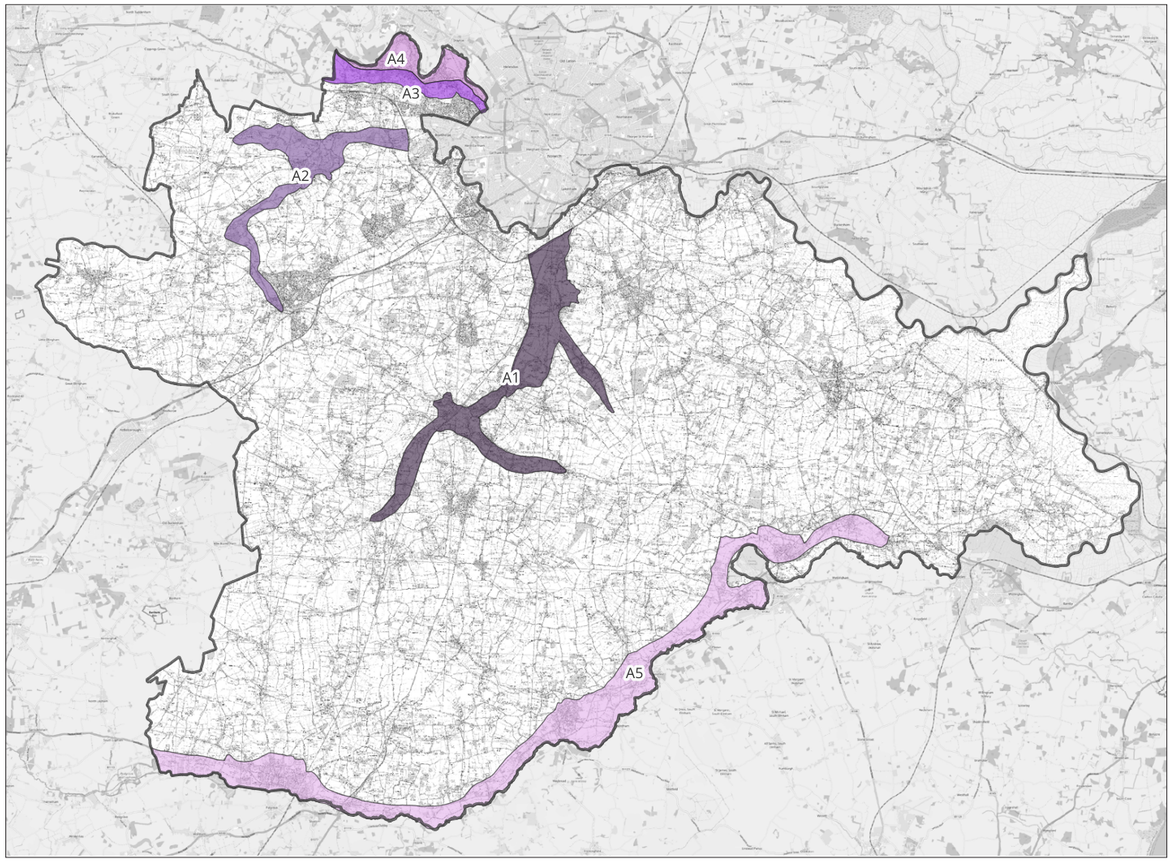
The boundary of this landscape type is defined primarily by topography and corresponds with the upper crest of the valley side, which generally occurs below the 30m AOD contour. Occasionally, the perceived boundary has been affected by cultural features which have transgressed this natural boundary to either extend or reduce the influence of the valley-form character, for example in the valley of the Waveney where the settlements have grown up as an integral part of the valley landscape, although now extend beyond the natural valley line.

Key characteristics

- Distinct valley landform created by glacial and fluvial activity, with wide flat valley floodplains, which create important divisions within the district landscape.
- Semi-enclosed landscape with long views within the valley but restricted views from the valley, creating occasional areas of more intimate character.
- Perceived presence of a river that is often not actually visible within the landscape but which at close-range is seen to be attractive, of significant size and distinct character.
- Willow pollards and lines of poplar flanking ditches and watercourses on the valley floor, plus reeds and marsh in areas.
- Attractive river crossings including fords and old bridges approached by sunken lanes.
- Areas of pastoral floodplain predominantly grazed by cattle, set within the arable landscape that occupies the valley sides.
- Historic quality to areas within the valley landscape due to the presence of visual reminders of the valleys' settled past, particularly the earthworks at Venta Icenorum, watermills, historic river crossings and round-towered churches.
- Settlements predominantly small and nucleated of strong vernacular character with scattered farmsteads on the valley floor or linear settlements at the valley side crest, with a few large towns of 'market town' quality distinct to the Waveney.
- Characteristic vernacular architecture particularly including red brick and Dutch gable ends, windmills, weather-boarded watermills and round towered churches.
- Presence of characteristic ecological assemblages, uncommon or unfound elsewhere in the district, including wetland vegetation, heathland and wet meadows/ pastures.

The individual character areas within this type are listed below:

- A1: Tas Rural River Valley
- A2: Yare/Tiffey Rural River Valley
- A3: Tud Rural River Valley
- A4: Wensum Rural River Valley
- A5: Waveney Rural River Valley



LT A: Rural River Valleys - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • A semi-enclosed landscape with some long views within the valleys but restricted views out. Areas of more intimate character on the valley floor. • Some river valleys less enclosed than others, the Waveney for example is a wide valley which has a more open character.	**Medium-Low** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.	**Medium-Low** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.
Landform • Distinct valley landform created by glacial and fluvial activity with distinct floodplain and shallow valley sides.	**High** • The valleys of South Norfolk are typically shallow-sided. • Valley sides have high susceptibility to battery storage, which would typically require a level platform. Development on a valley-side would also be difficult to screen. • The valley floor is typically undeveloped and would therefore be sensitive to development, which would be out of character.	**High** • The valleys of South Norfolk are typically shallow-sided. • Valley sides have high susceptibility to battery storage, which would typically require a level platform. Development on a valley-side would also be difficult to screen. • The valley floor is typically undeveloped and would therefore be sensitive to development, which would be out of character.

LT A: Rural River Valleys - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Field pattern **A1- Tas** • Meadows and fens, some surviving unenclosed land e.g. at Shotesham and Flordon. • 19th century enclosure at Tasburgh along with earlier enclosures. **A2 – Yare Tiffey** • Narrow floodplain meadows. Some C19 enclosure of meadows. • Meadows defined by dykes. • Small scale field pattern within floodplain. **A3 – Tud** • Narrow floodplain meadows. • Rationalised early enclosures on valley-side. **A4 – Wensum** • Small organic and regular enclosures bound by dykes in the vicinity of Costessey. • Large, regular enclosures on valley-side. **A5 – Waveney** • 19th century enclosure awards, with some earlier enclosure. • Fields defined by dykes rather than hedges. • Mixture of organic field patterns and regular field patterns reflecting history of enclosure.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Battery storage units would appear stark, while the introduction of hedges would be out of character.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Battery storage units would appear stark, while the introduction of hedges would be out of character.
Landcover • Distinctive land cover: small-scale field pattern and prevalence of grazed pastures on the valley floor, with mix of arable and pasture on the valley sides, creating a complex landcover pattern. • Characteristic ecological assemblages – reeds and marsh, wet meadows/ pastures, woodland plus areas of heathland. High ecological value recognised in designations (SAC/SSSIs). • Willow pollards and lines of poplar flank ditches and watercourses. • Some areas of active mineral working and open water associated with mineral extraction sites, for example in A3: Tud and A4: Wensum valleys. • The Tas Valley features two historic parks, an iron age hillfort at Tasburgh, and a Roman colony at Venta Icenorum.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valley-sides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be unsuitable for development. The majority of the land within the rural river valleys however is not priority habitat, so developments could potentially avoid this ecological constraint.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valley-sides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be unsuitable for development. The river valleys are therefore constrained.

LT A: Rural River Valleys - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Settlement pattern and human influence • Valleys have historically been a focus for settlement and the valleys contain some historic villages. • The floodplain however tends not to be settled, except for occasional mills. • Settlements predominantly small and nucleated of strong vernacular character. Isolated farms are present on the edges of the floodplain. • The Waveney Valley is generally rural but the area around Diss is more urbanised.	**Medium-High** • Frequent small villages and narrow country lanes create a complex settlement pattern which has a higher susceptibility to development. • Battery storage installations could detract from historic features such as church towers or villages.	**High** • Frequent small villages and narrow country lanes create a complex settlement pattern which has a higher susceptibility to development. • Battery storage installations could detract from historic features such as church towers or villages, and would dilute the strong vernacular character.
Perceptual aspects • The river valleys are typically settled, but for the most part this consists of small rural villages, often with historic character recognised through Conservation Area designations, connected by minor roads. • The generally quiet character and low density of settlement contribute to the perception of an intimate, tranquil rural landscape within the River Valleys. • Tranquillity is reduced in the Waveney Valley by the A1066 and the A143. • Tranquillity is also reduced in the middle section of the Yare Valley by the A47.	**Medium-High** • Battery storage would have a negative effect on the rural qualities of the river valleys. • Battery storage would have a localised effect on tranquillity.	**Medium-High** • Battery storage would have a negative effect on the rural qualities of the river valleys. • Battery storage would have a localised effect on tranquillity.
Visual characteristics • Views within the valleys vary from long range and open to some more enclosed, confined views. • Views frequently include landmark features. • Views into adjacent landscapes are for the most part restricted by the ridges marking the limits of the valleys. There are some views into the valleys from the surrounding higher land. • Key views from Waveney Valley into The Broads	**Medium-High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. • Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. This scenic quality increases susceptibility to development. • Views from the Waveney Valley into The Broads increases its sensitivity.	**Medium-High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. • Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. This scenic quality increases susceptibility to development. • Views from the Waveney Valley into The Broads increases its sensitivity.

LT A: Rural River Valleys - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Skylines • The valley crests form a skyline in views from the valley floor marking the transition to the adjacent landscape type. • In A5: Waveney Valley- a series of churches on the ridgeline form a prominent landmark. • Skyline is usually undeveloped creating a rural context. • Woodland along the valley crest is a key feature of A3: Tud River Valley.	**Varies** • This form of development is low in height meaning it is less likely to affect skylines. • There are however local sensitivities such as valley crests forming skylines, and churches on the ridgeline.	**Medium** • The skylines are more susceptible to large battery storage schemes which are likely to include taller elements. • Valley crests and skylines with churches on the ridgeline have high susceptibility to change.
Intactness • Ditches, fens, meadows, riparian vegetation and vernacular buildings create a sense of place. • The Tas Valley has an intact character. Small villages are present just above the floodplain. The character is somewhat influenced by nearby pylons, railway and A-road. • The Yare and Tiffey Valleys have an intact rural character with meadows, wet woodland, and historic parkland. Small villages are also present just above the floodplain. A tranquil character away from the A47, and a strong sense of place. • The Tud Valley is largely undeveloped and the historic pattern is still legible, however the A47 cuts through the pre-existing landscape pattern and weakens the sense of character. The eastern portion of the valley is found within an increasingly urban context. The land use here has changed with the introduction of a golf course at Costessey Park, and paddocks. • The Wensum Valley is partially disturbed by flooded mineral workings in the base of the valley. The valley is largely undeveloped. • The Waveney Valley is undeveloped and largely rural except around Diss. Pattern of meadows, fens and carrs remains intact throughout most of the area. Tranquillity is reduced by the A143, but there is a relatively strong sense of place.	**High** • Battery storage would introduce a new and discordant use. • Battery storage typically consists of generic elements which would dilute the sense of place.	**High** • Battery storage would introduce a new and discordant use. • Battery storage typically consists of generic elements which would dilute the sense of place.

LT A: Rural River Valleys - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA A1: **Tas Rural River Valley**	**Medium-High** • The existing characteristics are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Small scale battery storage developments have some potential for mitigation, and the overall susceptibility is assessed as Medium-High.	**High** • The existing characteristics are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Large battery storage developments are likely to include taller elements and would be more difficult to mitigate. The susceptibility is therefore judged as High.
LCA A2: **Yare/Tiffey Rural River Valley**	**Medium-High** • The existing characteristics of the Yare/Tiffey Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Small scale battery storage developments have some potential for mitigation, and the overall susceptibility is assessed as Medium-High.	**High** • The existing characteristics of the Yare/Tiffey Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Large battery storage developments are likely to include taller elements and would be more difficult to mitigate. The susceptibility is therefore judged as High.
LCA A3: **Tud Rural River Valley**	**Medium-High** • The existing characteristics of the Tud Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Small scale battery storage developments have some potential for mitigation, and the overall susceptibility is assessed as Medium-High.	**High** • The existing characteristics of the Tud Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Large battery storage developments are likely to include taller elements and would be more difficult to mitigate. The susceptibility is therefore judged as High.

LT A: Rural River Valleys - susceptibility to Battery Storage

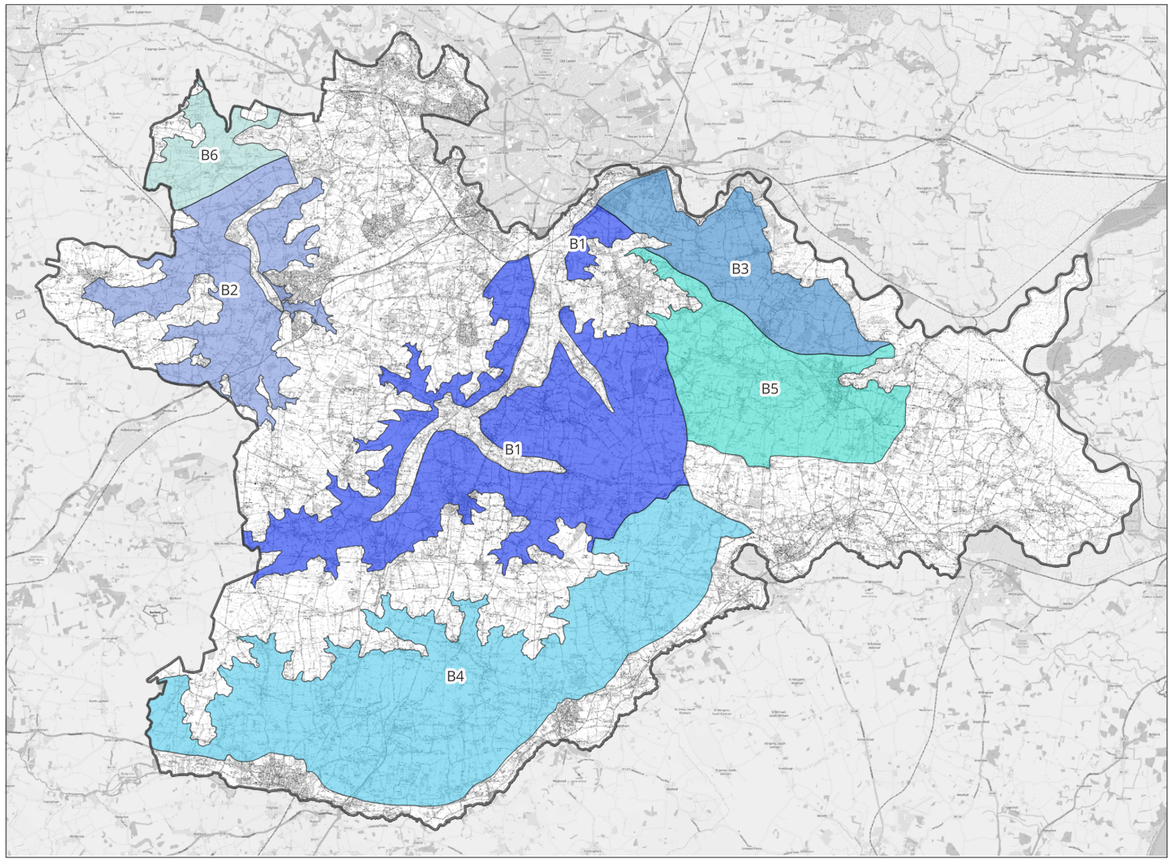
Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA A4: **Wensum Rural River Valley**	**Medium-High** • The existing characteristics of the Wensum Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Small scale battery storage developments have some potential for mitigation, and the overall susceptibility is assessed as Medium-High.	**High** • The existing characteristics of the Wensum Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Large battery storage developments are likely to include taller elements and would be more difficult to mitigate. The susceptibility is therefore judged as High.
LCA A5: **Waveney Rural River Valley**	**Medium-High** • The existing characteristics of the Waveney Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Small scale battery storage developments have some potential for mitigation, and the overall susceptibility is assessed as Medium-High.	**High** • The existing characteristics of the Waveney Rural River Valley are considered to be sensitive to battery storage, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to battery storage installations, which are composed of generic elements. • Large battery storage schemes are likely to include taller elements and would be more difficult to mitigate. The susceptibility is therefore judged as High.

LT B: Tributary Farmland

The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole of the district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD.

Key characteristics

- Shelving and gently undulating landform created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.
- Tamed and peaceful farmland with scattered small farm woodlands creating a quiet rural landscape.
- Dispersed but evenly distributed settlement pattern of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.
- An intricate network of narrow, winding rural lanes often bounded by banks or ditches with a sense of impenetrability.
- Tributaries elusive- evident but usually hidden within the landscape by topography or trees.
- Medium to large-scale arable farmland of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.
- Remnant parkland, which sometimes relates to former deer parks, plus areas of common land.
- Mixed architectural character comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.
- High proportion of important ecological assemblages protected as SSSIs including woodland, and wetland habitats.



The individual character areas within this type are listed below:

- B1: Tas Tributary Farmland
- B2: Tiffey Tributary Farmland
- B3: Rockland Tributary Farmland
- B4: Waveney Tributary Farmland
- B5: Chet Tributary Farmland
- B6: Yare Tributary Farmland

LT B: Tributary Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • Woodland blocks impart a semi-wooded, semi-enclosed character to much of the area. • Valley landforms offers opportunity for longer views.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.	**Medium** • Semi-enclosed landscape is moderately sensitive to development.
Landform • Varied landform from flat to gently undulating, sloping towards tributary valleys. • Minor stream valleys cut through the glacial till to create a landscape of restrained variety.	**Medium** • The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • Steeper slopes would however be more sensitive to battery storage as this type of development typically requires a level platform.	**Medium** • The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • Steeper slopes would however be more sensitive to battery storage as this type of development typically requires a level platform.

LT B: Tributary Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Field pattern **B1 - Tas Tributary Farmland** • Early rectilinear field patterns across much of the area. • Planned enclosures of former greens and heaths prior to the C18 creating semi-regular field pattern. • Common arable fields in Forncett St Mary visible on tithe map. • Late enclosure of fens, for example at Hingham • Some unenclosed meadows/fen. • Widespread hedgerow loss means that most fields are now classified as 20th century enclosures. **B2 – Tiffey** • Mix of field patterns. Some irregular, presumably early enclosures. • Late enclosures at Spooner Row and Barnham Broom. • Medieval deer parks at Kimberley and Oxehaghe. • Small area of unenclosed meadow at Coston. • Widespread hedgerow loss means that most fields are now classified as 20th century enclosures. **B3 – Rockland** • Mix of organic field patterns, suggesting early enclosure, and rectilinear field patterns, suggesting late enclosure. • Late enclosures of marshland and heathland in Kirby Bedon and Surlingham. • Sinuous field boundaries in Ashby St Mary suggest enclosure from common field. **B4 – Waveney Tributary Farmland** • Early rectilinear field patterns e.g. at Alburgh and Denton. • Ancient, irregular enclosures across much of the area. • Sinuous enclosures from open fields in Denton. • Considerable hedgerow loss. **B5 – Chet** • Early rectilinear field systems e.g. at Seething. Medieval open fields possibly based on earlier field system. • Late enclosure of Yelverton Heath.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved.

LT B: Tributary Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Landcover • Varied pattern from small scale, intricate networks of fields/hedgerows in tributary valleys and around settlements to large, open fields on higher ground. • An intricate network of narrow, winding lanes often bounded by ditches. • Elusive tributaries, evident but usually hidden within the landscape by topography or trees. • Medium to large-scale arable fields enclosed by sparse hedges with hedgerow trees. Permanent pasture and woodland found within valleys. • Remnant parkland which sometimes relates to former deer parks, plus areas of common land. • High proportion of important assemblages protected as SSSIs including woodland and wetland habitat.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.	**Medium** • Pre-C18 enclosures, commons, ancient woodland, and parklands display considerable time depth and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. • Arable farmland is a resource in its own right and is therefore sensitive to larger scale developments.
Settlement pattern and human influence • Dispersed settlement pattern of small villages, hamlets, farmsteads and manors distributed across the landscape. Occasional large agricultural buildings e.g. poultry sheds • Compact villages sheltered within small valleys. • Mixed architectural character comprising modern bungalow development and vernacular architecture with stepped gable ends and other vernacular characteristics. Local building materials such as brick and flint. • Isolated churches. Locally distinctive round towered churches e.g. St Michael's Aslacton • The Chet Tributary Farmland contains the small town of Loddon.	**Medium** • The existing rural settlement pattern is somewhat susceptible to this type of development. • The landscape includes some modern elements and has a mixed architectural character. • Historic features less likely to be affected by battery storage as this type of development consists of low elements. • The settlement pattern is considered to be moderately sensitive to Small battery storage developments.	**Medium-High** • The existing rural settlement pattern is somewhat susceptible to this type of development. • The landscape does include some modern elements and has a mixed architectural character. • Large scale battery storage would have a more pronounced effect on the rural settlement pattern, and is more likely to affect historic features.

LT B: Tributary Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Perceptual aspects • For the most part the landscape is peaceful, rural and tranquil. • Roads introduce a local source of movement within the landscape.	**Medium** • Battery storage does not have any intrinsic link with the countryside and would therefore have a negative effect on the rural qualities of the Tributary Farmlands. • Battery storage schemes are likely to have a localised effect on tranquillity. • Sensitive design i.e. infrared cameras, could avoid the need for lighting.	**Medium-High** • Battery storage does not have any intrinsic link with the countryside and would therefore have a negative effect on the rural qualities of the Tributary Farmlands. Large schemes would have a more pronounced effect on the rural qualities of the countryside. • Battery storage schemes are likely to have a localised effect on tranquillity. • Sensitive design i.e. infrared cameras, could avoid the need for lighting.
Visual characteristics • Transitional landscape occupying the mid ground between the plateaux and the main river valleys, providing opportunities for long and framed views. • Within these landscapes views are across arable fields to sloping valley sides and down to small-scale wooded tributary valleys. • Framed and open, long-ranging views across the countryside. • Large agricultural buildings can be visually prominent. • Pylons and poles interrupt the landscape wherever they are present, notably towards the northern part of the district. • Important views to landmarks such as Wymondham Abbey and Wicklewood Windmill that provide a sense of place. • Elements of vernacular interest that include round-towered churches. • Generally undeveloped skylines. • Strong visual influence of the adjoining Broads in character areas B3 and B5. • Visual influence of Norwich in character areas B1 and B3.	**Medium** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • The landscape is less susceptible to small scale battery storage than to other forms of development as battery storage installations are composed of low elements.	**Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Large scale battery storage could include shipping containers or taller structures which would have a considerable negative influence on the visual characteristics of the Tributary Farmlands. The susceptibility to this form of development is therefore higher.
Skylines • The skyline varies across the landscape type from clear to interrupted by woodland blocks and undulations in landform. • In the enclosed tributary valleys the skyline can include prominent valley crests.	**Varies** • This form of development is limited in height meaning it is less likely to affect skylines. • There are however local sensitivities such as prominent valley crests.	**Medium** • Undeveloped skylines, though not generally prominent or distinctive. • Prominent valley crests are sensitive to development. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility.

LT B: Tributary Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Intactness • Some roads have been modernised and there has been some modest expansion of settlements. Changing agricultural practices have led to a simplification of the landscape pattern and the loss of some landscape features. The historic pattern is nonetheless legible, and there are relatively few modern elements. The rural character of the area is intact, and there is a moderately strong sense of place.	**Medium-High** • The intact rural character is susceptible to the urbanising influence of battery storage, which would fragment the landscape pattern. • Battery storage installations consist of standard, utilitarian elements which would dilute the sense of place.	**Medium-High** • The intact rural character is susceptible to the urbanising influence of battery storage, which would fragment the landscape pattern. • Battery storage installations consist of standard, utilitarian elements which would dilute the sense of place.

LT B: Tributary Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA B1: **Tas Tributary Farmland**	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • The Tas Tributary Farmlands are considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.
LCA B2: **Tiffey Tributary Farmland**	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • The Tiffey Tributary Farmlands are considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.

LT B: Tributary Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA B3: Rockland Tributary Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • The Rockland Tributary Farmlands are considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.
LCA B4: Waveney Tributary Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • The Waveney Tributary Farmlands are considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.

LT B: Tributary Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA B5: Chet Tributary Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • The Chet Tributary Farmlands are considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.
LCA B6: Yare Tributary Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • The Yare Tributary Farmlands are considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.

LT C: Tributary Farmland with Parkland

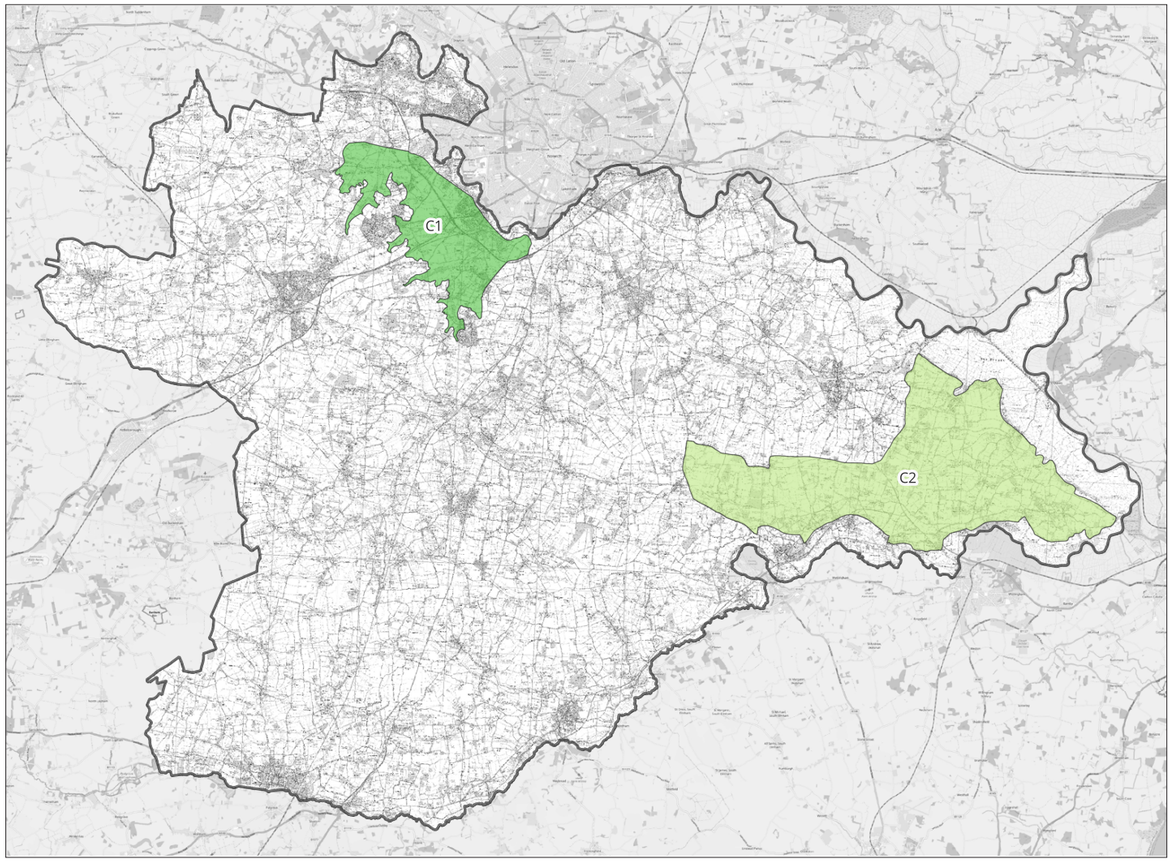
The Tributary Farmland with Parkland Landscape Type occupies two discrete areas of landscape, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very distinctive character throughout much of the area.

Key characteristics

- Gently undulating landform created by the presence of small tributary stream valleys which cut through the glacial till landscape providing a sense of restrained variety
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes, providing varied opportunities for long and framed views
- Presence of large parkland estates particularly associated directly with the tributary valleys. Estate railings, prominent gatehouses, boundary fences and tree-lined avenues with areas of pastoral farmland and horse grazing reveal the presence of the wooded parkland in the wider arable landscape.
- Context of tamed and peaceful arable farmland with scattered small farm woodlands, including ancient woodland, and medium to large-scale fields of sugarbeet and cereal surrounded by sparse hedges and hedgerow trees.
- Small fields of more unusual crops such as sunflowers and asparagus bounded by banks of coppiced willow.
- Dispersed but evenly distributed settlement pattern of small farmsteads and small, nucleated villages.
- An intricate network of small rural roads often bounded by banks or ditches with a sense of impenetrability.
- Tributaries visually elusive and often physically inaccessible- rarely evident because they are hidden within the landscape by topography or trees, particularly where they are associated with the parkland which prevents public access to them.
- Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped and Dutch gable ends and brick and flint.
- Isolated flint round towered churches particularly evident.
- Characteristic large detached halls and manor houses, usually constructed of brick and of high architectural quality, associated with the parkland estates. These are frequently screened by woodland, except at close range.

The individual character areas within this type are listed below:

- C1: Yare Tributary Farmland with Parkland
- C2: Thurlton Tributary Farmland with Parkland



LT C: Tributary Farmland with Parkland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • Open arable landscape is interrupted by areas of woodland. • Areas of woodland associated with estates provide greater enclosure.	**Medium** • Semi-enclosed character is moderately susceptible to development.	**Medium** • Semi-enclosed character is moderately susceptible to development.
Landform • Gently undulating landform created by the presence of small tributary stream valleys which cut through the landscape providing a sense of restrained variety.	**Medium** • The area consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • Steeper slopes would however be more sensitive to battery storage installations as they typically require a level platform.	**Medium** • The area consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • Steeper slopes would however be more sensitive to battery storage installations as they typically require a level platform.
Field pattern **C1 - Yare** • Irregular enclosures. • Late enclosure e.g. at Little Melton. • Parks. • Unenclosed land at Swardeston Common. **C2 - Thurlton** • Ancient irregular enclosures. • Considerable field amalgamation.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved. • A development of this size is likely to be contained within a single field and the effect on the field pattern would be limited.	**Medium** • Whilst there are likely to be some early field systems these are somewhat poorly preserved. • A larger Battery Storage scheme would potentially have a greater effect on the field pattern.
Landcover • Presence of large parkland estates particularly associated with the tributary valleys. Estate railings, prominent gatehouses, parkland belts, tree-lined avenues and areas of pasture reveal the presence of parkland within the wider arable landscape. • Peaceful arable farmland with small ancient woodlands and scattered coverts with medium to large-scale fields of wheat, barley, oilseed rape and sugarbeet surrounded by sparse hedges and hedgerow trees. • An intricate network of small rural roads. • Becks.	**Varying from Medium to High** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, and parklands display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.	**Varying from Medium to High** • Pre-C18 enclosures, commons, ancient woodland, and parklands display considerable time depth and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. • Arable farmland is a resource in its own right and is therefore sensitive to larger scale developments.

LT C: Tributary Farmland with Parkland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Settlement pattern and human influence • Dispersed but evenly distributed settlement with a pattern of farmsteads and small villages. • Sparse settlement pattern across C2. C1 Yare Tributary Farmland somewhat more settled with the larger village of Cringleford, as well as the Norfolk & Norwich Hospital and the A47. • Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped gables and brick and flint. • Vernacular architectural character, predominantly of rural buildings and estate dwellings. More modern dwellings are found in larger villages.	**LCA C1: Medium-Low** **LCA C2: Medium** • C2 has a sparse rural settlement pattern which is susceptible change. • C1 is more settled and has overt human influence from pylons and the A47 which reduces the susceptibility to change. • Historic features are less likely to be affected by small scale battery sXtorage installations as they are composed of low elements. • Small scale schemes consisting of low elements would have a limited effect on the settlement pattern.	**C1: Medium** **C2: Medium-High** • C2 has a sparse rural settlement pattern which is susceptible change. • C1 is more settled and has overt human influence from pylons and the A47 which reduces the susceptibility to change. • Large scale battery storage would have a more pronounced effect on the rural settlement pattern, and is more likely to affect historic features.
Perceptual aspects • Tamed arable farmland. • C2 is a peaceful rural landscape. C1 is adversely influenced by the Norwich Southern Bypass and the A11. • Pylons and the A47 negate any sense of remoteness within C1. There is however a sense of remoteness within C2, particularly adjacent to The Broads. .	**LCA C1: Low** **LCA C2: Medium** • The lack of remoteness or tranquillity within C1 reduces susceptibility. • Battery storage does not have any intrinsic link with the countryside and would therefore have a negative effect on the rural qualities and sense of remoteness within C2. • Battery storage schemes are likely to have a localised effect on tranquillity. • Sensitive design could avoid the need for lighting.	**LCA C1: Low** **LCA C2: Medium-High** • The lack of remoteness or tranquillity within C1 reduces susceptibility. • Battery storage does not have any intrinsic link with the countryside and would therefore have a negative effect on the rural qualities and sense of remoteness within C2. Large schemes would have a more pronounced effect on the rural qualities of the countryside. • Battery storage schemes are likely to have a localised effect on tranquillity. • Sensitive design i.e. infrared cameras, could avoid the need for lighting.

LT C: Tributary Farmland with Parkland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Visual characteristics • Views to wide open horizons and long views across denuded hedgerow boundaries and arable farmland from higher areas. • Prominent views to historic features such as isolated and round-towered churches. • Views framed and broken by woodland blocks and estate parkland with large manor buildings. • Intermittent, long views into The Broads from C2. • Views to Norwich in particular from the southern bypass which bisects C1. • Characteristic large halls though frequently screened by woodland. • Isolated round towered flint churches particularly evident. • Mixed architectural character comprising modern development and vernacular architecture.	**Medium** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • The visual characteristics are less susceptible to small scale battery storage installations than to other forms of development as they are typically composed of low elements.	**Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Large scale battery storage could include shipping containers or taller structures which would have a considerable negative influence on the visual characteristics of the landscape. The susceptibility to this form of development is therefore higher.
Skylines • In places interrupted by woodland, pylons and posts. • Views to parkland edges and woodland. • Intermittent long views to development at the City of Norwich and Norwich Southern Bypass (from C1).	**C1: Low** **C2: Low** • This form of development is low in height meaning it is less likely to affect skylines.	**C1: Low** **C2: Medium-Low** • Existing skylines in C1 are already influenced by pylons, and the susceptibility is considered to be low. • Skylines in C2 have some influence from existing pylons.

LT C: Tributary Farmland with Parkland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Intactness • Intactness varies. Some areas have experienced considerable change with the introduction of the Norwich Southern Bypass and the expansion of settlements such as Cringleford, and the introduction of pylons and other development. • Elsewhere, there is a much stronger and more intact rural character.	**LCA C1: Medium** **LCA C2: Medium-High** • The remaining open rural land within C1 is susceptible to further development and fragmentation. The area forms part of the Norwich Southern Bypass Protection Zone so is sensitive to development which would compromise the rural setting of the road. • The stronger character of C2 has increased susceptibility to all forms of development, including battery storage.	**LCA C1: Medium** **LCA C2: High** • The remaining open rural land within C1 is susceptible to further development and fragmentation. The area forms part of the Norwich Southern Bypass Protection Zone so is sensitive to development which would compromise the rural setting of the road. • The stronger character of C2 has increased susceptibility to all forms of development. Large scale battery storage would introduce new contrasting features which would have a considerable impact on the intactness of the existing rural landscape.

LT C: Tributary Farmland with Parkland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Large battery storage development (over 1ha in size)
LCA C1: **Yare Tributary Farmland with Parkland**	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the remaining rural landscape. The standardised design would have a negative effect on sense of place. • LCA C1 is considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place. • Larger battery storage schemes would have a more profound effect on the intactness of the remaining rural landscape. Larger battery storage schemes are likely to include shipping containers or taller structures, and the visual sensitivity to this form of development is higher. Development of this scale would be incompatible with the Norwich Southern Bypass Landscape Protection Zone, the effects on the landscape would be harder to mitigate, and the overall susceptibility is therefore higher.
LCA C2: **Thurlton Tributary Farmland with Parkland**	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on sense of place and would also introduce overt human influence to a rural landscape. • LCA C2 is considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on sense of place and would also introduce overt human influence to a rural landscape. • Larger battery storage schemes would have a more profound effect on the rural character of the landscape, and the visual sensitivity to this form of development is higher. The effects would be harder to mitigate and the overall susceptibility is therefore higher.

LT D: Settled Plateau Farmland

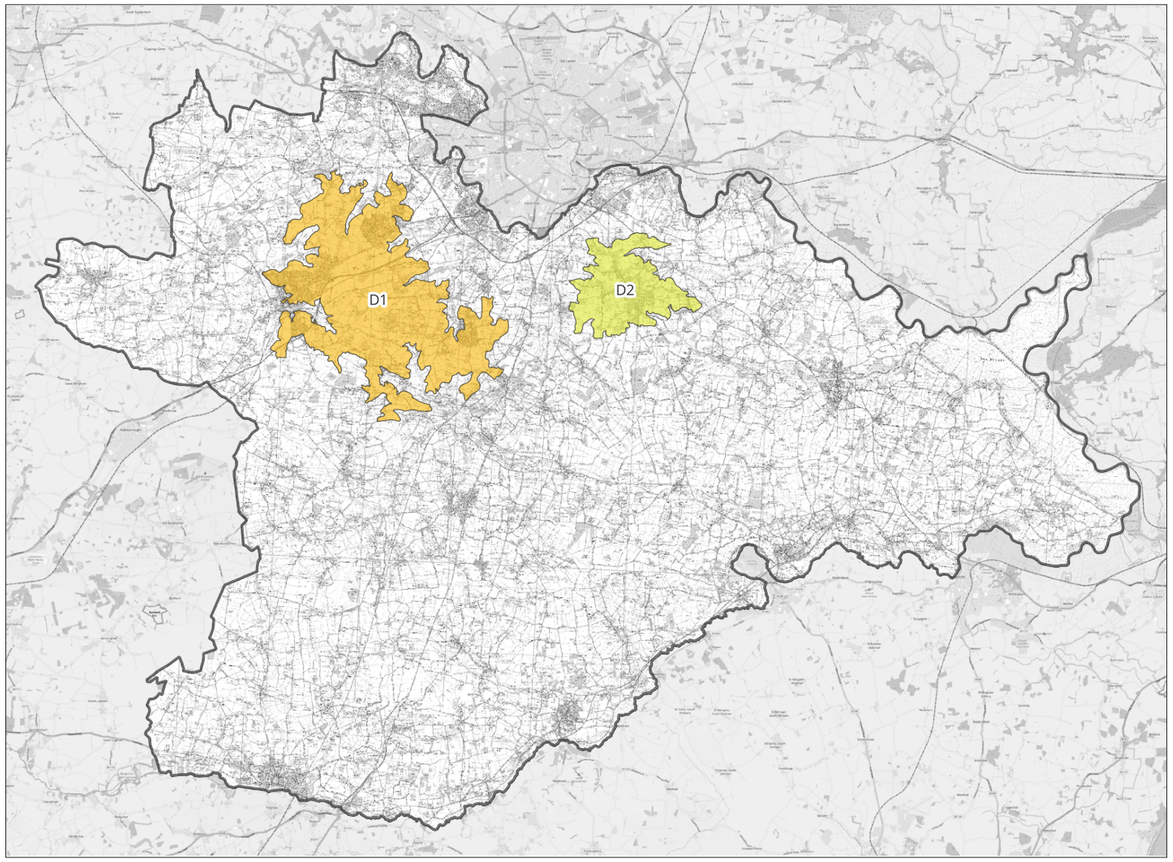
There are two areas of the Settled Plateau Farmland Landscape Type, one to the east and one to the west of the Tas Valley around the settlements of Wymondham and Poringland respectively. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The boundaries of these areas are largely represented by the 40 and 50m AOD contours. However, small and fragmented areas above the 40m contour have not been classified as Settled Plateau Farmland.

Key characteristics

- Distinct flat to gently rising elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture principally characteristic swathes of cereal, oilseed rape and sugarbeet.
- Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements.
- Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. Elements of plateau interior not visible except from other plateau areas or where tall intrusive elements are present.
- Mature remnant oak hedgerow trees are features in the agricultural landscape however hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.
- Presence of large communications masts which interrupt of the sense of openness yet provide distinct landmarks.
- Settled landscape mostly comprising large edge-of-plateau towns and large villages with other smaller nucleated settlements dispersed across the plateau.
- Some evidence of historical features within the landscape including isolated churches (some of which are round-towered), moats, historic parkland and some farm ponds.
- Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development.

The individual character areas within this type are listed below:

- D1: Wymondham Settled Plateau Farmland
- D2: Poringland Settled Plateau Farmland



LT D: Settled Plateau Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • Generally open landscape. Poor hedgerows accentuate the openness of the landscape. • Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements. • Wooded character in parts provides enclosure, particularly around settlements.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.
Landform • Distinct flat to gently rolling, elevated landform as a result of the simple underlying geology. • The area centred on Poringland has the greatest variation, rising up to a gentle 'dome' at 75m AOD which is one of the most elevated areas in the district. • The boundaries of these areas are largely represented by the 40 and 50m AOD contours – the plateau edges are highly visible from adjacent landscapes.	**Medium-Low to High** • The simple flat landform is less susceptible to development. • The plateau edges however would be susceptible to development, which would be exposed and difficult to screen.	**Medium-Low to High** • The simple flat landform is less susceptible to development. • The plateau edges however would be susceptible to development, which would be exposed and difficult to screen.
Field pattern **D1 - Wymondham** • Early irregular enclosures at Bracon Ash and Mulbarton. • Irregular field pattern in Ketteringham. • Late enclosure of greens e.g. High Green, Melton and High Green, Wreningham. • Park at Ketteringham. • Field pattern obliterated by airfield at Hethel. **D2 – Poringland** • Late enclosure of former heath (shared between settlements). • Former park at Bixley Hall.	**Medium-Low** • A mix of different field patterns. • A development of this size is likely to be contained within a single field and the effect on the field pattern would be limited.	**Medium** • A mix of different field patterns. • A larger Battery Storage scheme would potentially have a greater effect on the field pattern.
Landcover • Large arable fields characterised by swathes of cereals, oilseed rape and sugarbeet. • Some evidence of historic landscape features including moats, historic parkland and farm ponds. • Woodland blocks tend to be associated with halls/remnant parkland	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.	**Medium** • Arable farmland is a resource in its own right, and is therefore sensitive to larger scale developments.

LT D: Settled Plateau Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Settlement pattern and human influence • Historically somewhat sparsely settled but with some dispersed settlement including green-side settlement. • The modern day settlement pattern includes the town of Wymondham and a number of large villages. • Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development. • Wymondham and Mulbarton retain a historic character despite more recent peripheral development, whereas Poringland and Hethersett have a much more modern character (characterised by post-war bungalow development). • Former airfield at Hethel (now site of motor works).	**Medium-Low** • Settlement pattern has somewhat altered with the expansion of settlements. More developed character is apparent in the vicinity of Wymondham, Hethersett and the A11. • More settled parts of the area have a lower susceptibility to development.	**Medium** • Large scale battery storage would have a more pronounced effect on the settlement pattern, and the susceptibility to this form of development is therefore higher.
Perceptual aspects • A number of large settlements are present and there is therefore little sense of remoteness. • The A11 cuts across the Wymondham Settled Plateau Farmlands and introduces a source of noise, movement and modernity. • Whilst this is a settled landscape the villages are set within a rural landscape and there is a sense of countryside.	**Varying from Medium-Low to Medium** • The remaining areas of countryside are susceptible to development. • Battery storage would detract from the rural qualities where these are present. • Away from the A11 there is a higher level of tranquillity which is somewhat susceptible to this form of development.	**Varying from Medium-Low to Medium-High** • The remaining areas of countryside are susceptible to development. • Large scale Battery Storage would have a more pronounced effect on rural qualities of the landscape. • Away from the A11 there is a higher level of tranquillity which is somewhat susceptible to this form of development.

LT D: Settled Plateau Farmland - susceptibility to Battery Storage

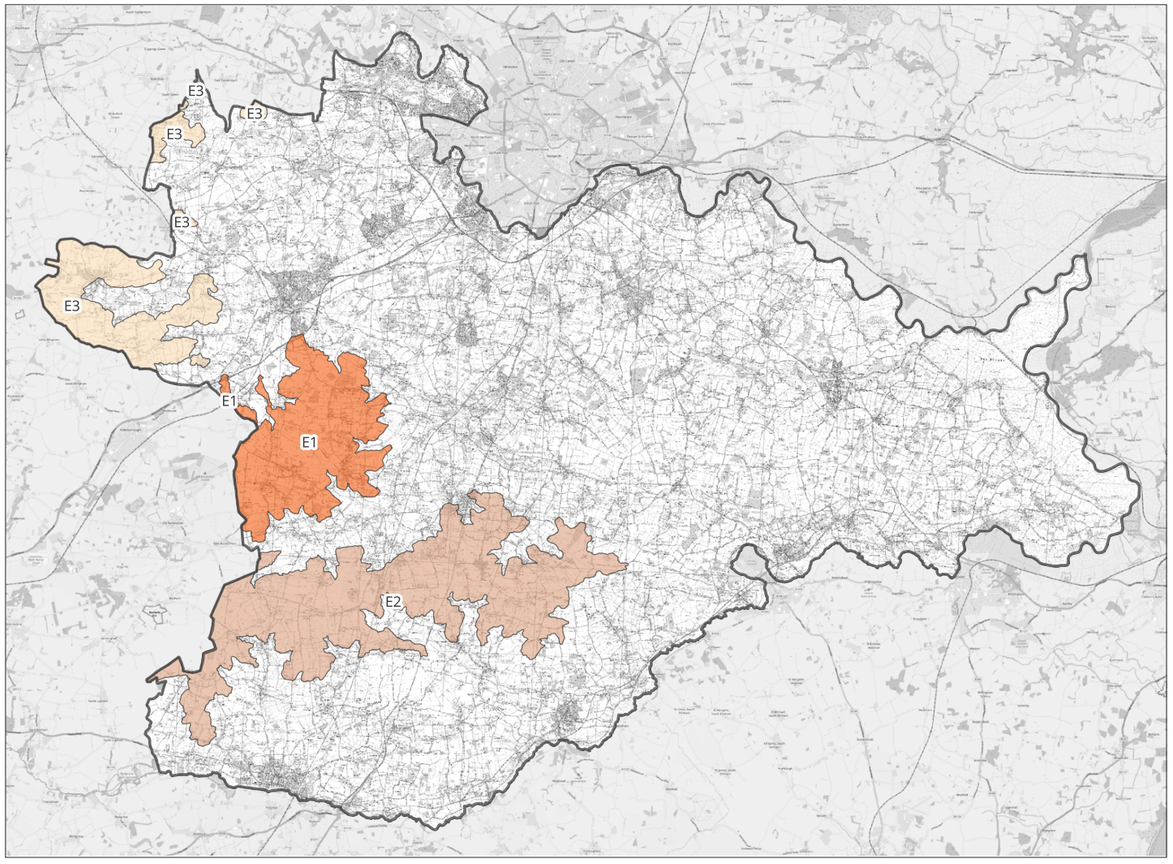
Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Visual characteristics • Strong open horizons – the archetypal 'Norfolk' Landscape. • Illusions of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape. • Views to large communication masts, settlement on the plateau edge and areas of parkland and woodland blocks. • Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. • D2 plateau is very prominent in views from the surrounding landscape. • Mast at Poringland has high visibility but also serves as a landmark. • A number of large-scale farm buildings including grain towers and silos that punctuated the horizon (particularly near Silfield).	**Varying from Low to Medium** • The interior of the plateau is not considered particularly sensitive to this form of development, but exposed plateau edges would have a higher sensitivity.	**Varying from Medium to High** • Larger battery storage installations are likely to include shipping containers or taller elements which would have a considerable effect on the visual characteristics of the Settled Plateau Farmland. The plateau edges have High sensitivity to this form of development. • Mitigation planting is likely to affect the characteristic open views.
Skylines • Strong open horizons – the archetypal 'Norfolk' landscape. • Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Medium** • The long views to open horizons are sensitive to taller forms of development including large battery storage schemes. • Mitigation planting could also affect the characteristic open horizons.
Intactness • The landscape has clearly experienced considerable change through the expansion of settlements. • Poringland extends across the central part of D2 and is a relatively modern settlement. • Within D1, the settlements of Wymondham, Hethersett and Mulbarton have extended into the countryside, and the area is bisected by the A11. Earlier patterns have also been disrupted by the introduction of a WW2 airfield. The settlements are nonetheless separated by substantial areas of countryside.	**Medium** • Development is nucleated and there is a clear distinction between urban areas and the countryside. • Battery storage would be an urbanising element which would potentially fragment the remaining areas of countryside. The area then is moderately susceptible to this form of development.	**Medium-High** • Development of this scale has more potential to fragment the remaining countyside, and the susceptibility is therefore higher.

LT D: Settled Plateau Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA D1: Wymondham Settled Plateau Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the remaining areas of countryside. The standardised design would have a negative effect on the sense of place within this area. • LCA D1 is considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the remaining areas of countryside. The standardised design would have a negative effect on the sense of place within this area. • Larger battery storage schemes would have a more profound effect on the intactness of the remaining rural landscape. Larger battery storage schemes are likely to include shipping containers or taller structures, and the visual sensitivity to this form of development is higher. The effects on the landscape would be harder to mitigate, and the overall susceptibility is therefore higher.
LCA D2: Poringland Settled Plateau Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the remaining areas of countryside. The standardised design would have a negative effect on the sense of place within this area. • LCA D2 is considered to be moderately sensitive to small scale battery storage schemes - which have some potential for mitigation.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the remaining areas of countryside. The standardised design would have a negative effect on the sense of place within this area. • Larger battery storage schemes would have a more profound effect on the intactness of the remaining rural landscape. Larger battery storage schemes are likely to include shipping containers or taller structures, and the visual sensitivity to this form of development is higher. The effects on the landscape would be harder to mitigate, and the overall susceptibility is therefore higher.

LT E: Plateau Farmland

The Plateau Farmland Landscape Type occurs in the western part of the district in three principal areas, all of which continue beyond the South Norfolk boundary into the adjoining Breckland District. The Plateau Farmlands are defined by their elevation and all are primarily delineated by the 50m contour. However, it should be noted that not all areas above the 50m contour line have been classified as Plateau Farmland due to differing land use patterns.



Key characteristics

- Distinct flat and elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture with characteristic swathes of cereal, oilseed rape and sugarbeet monoculture.
- Sense of openness and exposure due to the elevation and scarcity of enclosing elements.
- Long views of the district from the plateau edges and shorter internalised plateau views. Inner plateau largely invisible from other areas.
- Mature remnant oak hedgerow trees are features in the agricultural landscape. However, hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Straight plateau-top roads characteristically lined with attractive wide grass verges and ditches.
- Wooded horizons as a result of visual merging of hedgerow trees and woodlands in the landscape, which integrate settlements into the landscape.
- Presence of tall structures including masts and poles which disturb the rural scene interrupting the sense of openness.
- Sparsely settled landscape mostly comprising larger edge-of-plateau settlements, small nucleated and long linear settlements.
- Presence of historic features within the landscape including isolated church, moats, and farm ponds.
- Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development.
- Disused air fields

The individual character areas within this type are listed below:

- E1: Ashwellthorpe Plateau Farmland
- E2: Great Moulton Plateau Farmland
- E3: Hingham-Mattishall Plateau Farmland

LT E: Plateau Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • Sense of openness and exposure due to the elevation and scarcity of enclosing elements. • The flatness of the plateau creates a strong sense of openness with large skies and distant horizons.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development.
Landform • Distinct flat and elevated plateau landform. • Defined by the elevation and primarily delineated by the 50m contour.	**Varying from Low to High** • The simple flat landform is less susceptible to this type of development. • The plateau edges however are potentially susceptible to development, including battery storage.	**Varying from Low to High** • The simple flat landform is less susceptible to this type of development. • The plateau edges however are potentially susceptible to development, including battery storage.
Field pattern **E1 – Ashwellthorpe Plateau Farmland** • Ancient rectilinear enclosures in Bunwell • Ancient irregular enclosures at Fundenhall • Late enclosure of large commons (shared between settlements). • Fields on poor drained plateau bound by ditches. **E2 – Great Moulton** • Ancient rectilinear field patterns in Burston, Tibenham, Great Moulton and Hardwick. • Irregular field patterns, presumably early enclosures. • Large heath at western edge of area enclosed in C18. • Some remaining unenclosed land e.g. Wacton Common. • Field pattern eroded by airfields and hedgerow loss. **E3 – Hingham - Mattishall** • Later enclosure of commons and warren signified by rectilinear field pattern e.g at Deopham Green. • Irregular field patterns at Hingham an Wicklewood. • Late enclosure of Welborne Common (C18)	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape. • A development of this size is likely to be contained within a single field and the effect on the field pattern would be limited.	**Medium** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape. • A larger Battery Storage scheme would potentially have a greater effect on the field pattern.

LT E: Plateau Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Landcover • Large fields of arable monoculture with characteristic swathes of wheat, barley, oilseed rape and sugar beet. • Mature hedgerow oaks are features in the agricultural landscape. However hedgerows have been severely degraded or lost, leading to a much simplified landscape. • Generally an early enclosed landscape, but with significant areas of common/ heath, many of which were enclosed in the C19. Some remaining commons. • Mixed field patterns relating to the history of enclosure.	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.	**Medium-High** • Arable farmland is a resource in its own right and is therefore sensitive to larger scale developments. • Larger scale developments could alter perceptions of typical landcover so susceptibility is higher.
Settlement pattern and human influence • Dispersed settlement pattern. Common-edge settlement, hamlets and small nucleated villages. Many small halls, often isolated, with moats. No large parklands. • Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development. • Linear settlements occur along roads with some vernacular buildings intermixed with more modern development. • Disused airfields. • Occasional tall structures including wind turbines.	**Medium-High** • Strong sense of historical settlement pattern indicates higher susceptibility to development. • Battery storage schemes could detract from historic features including vernacular buildings.	**High** • Strong sense of historical settlement pattern indicates higher susceptibility to development. • Larger battery storage installations would introduce a much greater sense of human influence.
Perceptual aspects • A peaceful rural character created by the absence of main roads and development. • Quiet rural lanes dissect the landscape. • The A140 cuts north-south through part of E2.	**Medium** • Peaceful rural character is susceptible to development. • Sense of tranquillity is somewhat susceptible to this form of development. • Battery storage is smaller and more compact than other forms of development, so susceptibility in relation to battery storage is somewhat lower.	**Medium-High** • Battery storage does not have any intrinsic link with the countryside and would therefore have a negative effect on the rural qualities of the Plateau Farmlands. Large schemes would have a more pronounced effect on the rural qualities of the countryside.

LT E: Plateau Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Visual characteristics • Long views of the district from the plateau edges take in a wide panorama of South Norfolk and these are some of the best in the district. • Shorter internalised plateau views are to farm buildings and isolated churches. • From higher areas of plateau and from the plateau edge there are views to adjacent landscapes including to churches in adjoining areas.	**Medium** • Visual connections with adjacent landscapes, including some long views, indicates higher susceptibility. • The visual character is less susceptible to battery storage than to other forms of development as battery storage installations consists of low elements. Overall then the Plateau Farmland is considered to have medium susceptibility to this form of development.	**Medium-High** • Visual connections with adjacent landscapes, including some long views, indicates higher susceptibility. • Large scale battery storage could include shipping containers or taller structures which would have a considerable negative influence on the visual characteristics of the Plateau Farmlands. The susceptibility to this form of development is therefore higher.
Skylines • The flatness of the plateau creates a strong sense of openness with vast skies and dramatic horizons. • Expansive skies are a defining feature with distant views and farm buildings are visible in the open landscape. • 360 degree horizon in places.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Mitigation planting could however affect the characteristic open horizons.	**Medium** • The long views to open horizons are sensitive to taller forms of development including large battery storage schemes. • Mitigation planting could also affect the characteristic open horizons.
Intactness • The landscape has experienced ongoing change including enclosure in the C19 and rationalisation in the C20. Some elements of the landscape however can be traced back to the medieval era and there is some sense of historic continuity. Modern elements are relatively few. • Though there have clearly been changes in land management, including the amalgamation of fields, the landscape retains a strong rural character.	**Medium-High** • Battery storage is likely to consist of standard, utilitarian elements which would dilute the sense of place. • Battery storage would contrast with the rural character of the area.	**High** • Battery storage is likely to consist of standard, utilitarian elements which would dilute the sense of place. • Large battery storage developments would have a more profound effect on the intactness of the existing landscape pattern.

LT E: Plateau Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA E1: Ashwellthorpe Plateau Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Battery Storage would also affect the tranquil and undisturbed character which is present across much of the area. • Small battery storage developments typically consist of low features, and there is some potential for mitigation. The existing landscape character is moderately susceptible to this type and scale of development.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Battery Storage would also affect the tranquil and undisturbed character which is present across much of the area. • Large battery storage developments are likely to include shipping containers or taller elements. Development of this scale would have a more profound effect on the intactness of the rural landscape, and susceptibility is therefore higher.
LCA E2: Great Moulton Plateau Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Battery Storage would also affect the tranquil and undisturbed character which is present across much of the area. • Small battery storage developments typically consist of low features, and there is some potential for mitigation. The existing landscape character is moderately susceptible to this type and scale of development.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Battery Storage would also affect the tranquil and undisturbed character which is present across much of the area. • Large battery storage developments are likely to include shipping containers or taller elements. Development of this scale would have a more profound effect on the intactness of the rural landscape, and susceptibility is therefore higher.

LT E: Plateau Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA E3: Hingham-Mattishall Plateau Farmland	**Medium** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Battery Storage would also affect the tranquil and undisturbed character of the area. • Small battery storage developments typically consist of low features, and there is some potential for mitigation. The existing landscape character is moderately susceptible to this type and scale of development.	**Medium-High** • Battery Storage has no intrinsic link with the countryside so this type of development would affect the intactness of the rural landscape. The standardised design would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Battery Storage would also affect the tranquil and undisturbed character which is present across much of the area. • Large battery storage developments are likely to include shipping containers or taller elements. Development of this scale would have a more profound effect on the intactness of the rural landscape, and susceptibility is therefore higher.

LT F: Valley Urban Fringe

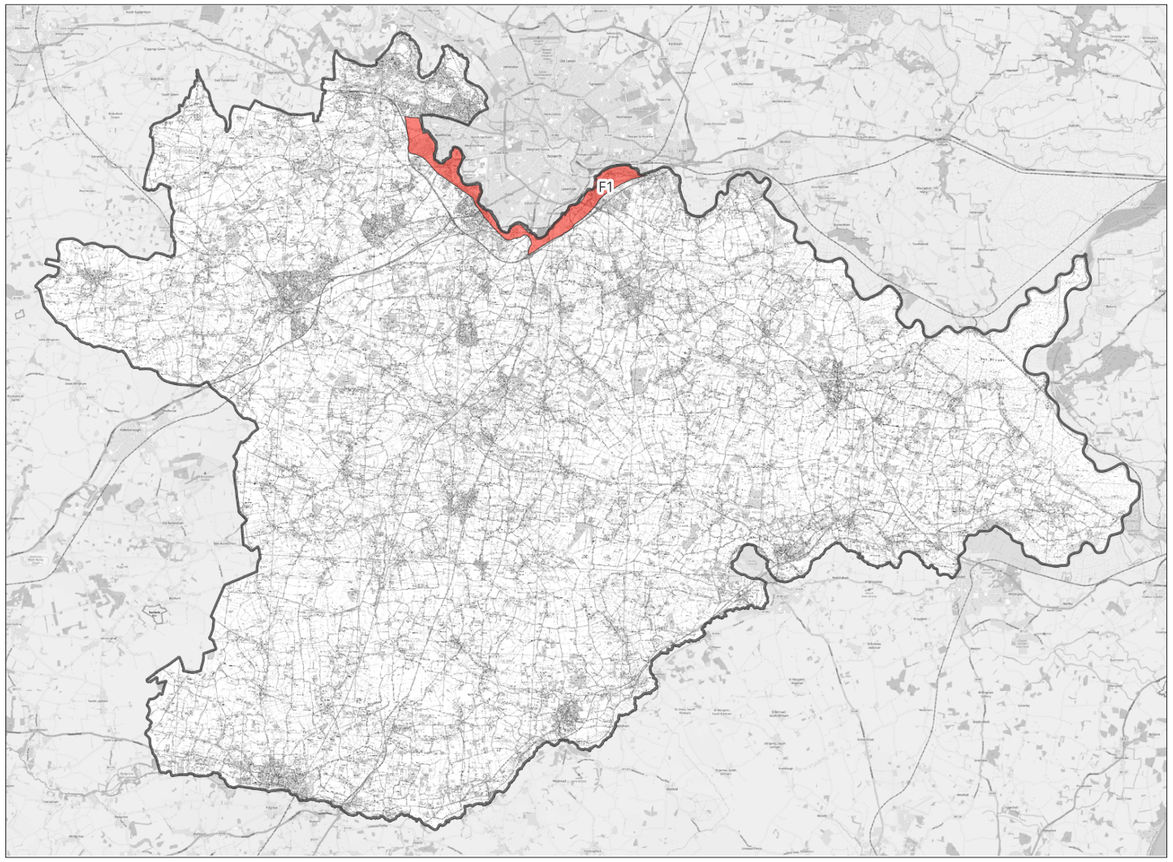
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area within the jurisdiction of Norwich City Council. The crest of the slope at about 30m AOD represents the boundary of this landscape type; as it is at this point that the character changes to a valley landform, focused on the River Yare.

Key characteristics

- Distinctive broad meandering valley form with wide flat flood plain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.
- Glacial gravel deposits, which have been exploited resulting in remnant flooded gravel workings along the valley floor.
- Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland creating a well wooded appearance.
- Inaccessible valley floor with relatively few river crossings.
- Evidence of early human activity, for example the henge at Arminghall and presence of numerous Scheduled Ancient Monuments.
- Few distinctive vernacular buildings mainly due to the relative lack of prewar settlement within the valley.
- Distinct absence of settlement within the valley, apart from discrete areas nestled around river crossings, although influenced by Norwich urban fringe along parts of the upper valley sides.
- Impenetrability resulting in a sense of remoteness and solitude- remarkable given the closeness of a major city.
- Large institutional buildings occasionally visible from the valley.

There is one Landscape Character Area within this type:

- F1: Yare Valley Urban Fringe



LT F: Valley Urban Fringe - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • A sense of containment. • Wide, fairly flat floodplain with enclosing valley sides. • Trees and woodland also contribute to enclosure in places.	**Medium** • Semi-enclosed landscape with medium susceptibility. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.	**Medium** • Semi-enclosed landscape with medium susceptibility. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.
Landform • Wide, fairly flat floodplain with enclosing valley sides. • The sides of the valley are fairly steep in places.	**High** • Valley floor is flat, but subject to flooding constraint. • Valley sides have high susceptibility to battery storage, which would typically require a level platform. Development on a valley-side would also be difficult to screen.	**High** • Valley floor is flat, but subject to flooding constraint. • Valley sides have high susceptibility to battery storage, which would typically require a level platform. Development on a valley-side would also be difficult to screen.
Field pattern • The field pattern largely consists of irregular flood meadows divided by dykes. • The valley sides feature irregular and regular enclosures, as well as parkland.	**Medium-Low** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape. • A development of this size is likely to be contained within a single field and the effect on the field pattern would be limited.	**Medium** • Whilst there are likely to be some early field systems these are somewhat poorly preserved in the modern landscape. • A larger Battery Storage scheme would potentially have a greater effect on the field pattern.
Landcover • Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland. Mixed woodlands and shelterbelts occur on the valley sides creating a well-wooded appearance. • Glacial gravel deposits, which have been and continue to be exploited resulting in remnant flooded gravel workings along the valley floor. • Natural character. Nature reserves such as Whitlingham Marsh. The river itself is a chalk river. • Presence of recreational landscapes including the country park at Whitlingham and playing fields at UEA. • Inaccessible valley floor with relatively few river crossings.	**Varying from Medium to Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Battery storage units would appear stark, while the introduction of hedges would be out of character. The fields on the valley side are however bound by hedges.	**Varying from Medium to Medium-High** • Small-scale fields are considered to have higher sensitivity. Fields are typically enclosed by dikes which means there are no hedges to provide enclosure. Battery storage units would appear stark, while the introduction of hedges would be out of character. The fields on the valley side are however bound by hedges.

LT F: Valley Urban Fringe - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Settlement pattern and human influence • Highly influenced by Norwich urban fringe along parts of the upper valley sides. • A number of large institutional buildings in or adjacent to the valley. • Green buffer and comprehensible development edge to the City of Norwich. • Floodplain has remained undeveloped.	**Medium-Low** • The valley largely functions as a green buffer, but there is some development at Colney, Cringleford and Trowse Newton. • The urban influence in the area reduces its susceptibility to change.	**Medium** • Development of this scale would be urbanising, and would erode the green buffer. • Considering the existing development which is already present the susceptibility is assessed as Medium.
Perceptual aspects • Noise of traffic on the Norwich Southern Bypass disturbs the tranquillity of the valley. Overall, despite these urban influences, the valley is mostly quiet and secluded.	**Medium-Low** • Potentially introduces additional lighting and noise, however the existing conditions indicate lower susceptibility.	**Medium-Low** • Potentially introduces additional lighting and noise, however the existing conditions indicate lower susceptibility.
Visual characteristics • Views are variable with open and enclosed views within the valley with large institutional buildings occasionally visible. • Views across the valley towards the City of Norwich. Valley performs an important visual function in creating a setting to the city. • Some enclosure from valley sides and vegetation.	**Medium** • Small battery storage developments typically consist of low cabinets and are unlikely to completely obscure views. They can however change the visual characteristics of the area.	**Medium-High** • Large battery storage developments may include shipping containers or taller structures which would have a more profound effect on the visual characteristics of the area. Mitigation planting may block views across the valley, which would be detrimental. The susceptibility to this scale of development is therefore higher.
Skylines • The valley crests form a skyline in views from the valley floor. • Mixed woodland blocks and shelter belts occur on the valley sides creating a well-wooded skyline.	**Low** • This form of development is limited in height meaning it is less likely to affect skylines. • Generally low susceptibility, but valley crests are sensitive to development.	**Low** • The well wooded skylines means that development is unlikely to be visible on the skyline. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility. • Generally low susceptibility, but valley crests are sensitive to development.

LT F: Valley Urban Fringe - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Intactness • The floodplain features former meadows and parkland, but nature conservation and recreation are increasingly important. • The land uses have evolved and there is a weak sense of historical continuity. • The intactness is to some extent disturbed by past mineral workings, which have made a lasting impression on the landscape. • The intactness of the valley is also influenced by the development of railways and later road bridges.	**Medium-Low** • Development of this scale would have a limited effect on the intactness of the landscape.	**Medium** • Development of this scale would have a considerable influence on the existing landscape pattern. • Taking account of past changes the Valley Urban Fringe is considered to be moderately susceptible to development of this type and scale, which would cause further fragmentation.

LT F: Valley Urban Fringe - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA F1: **Yare Valley Urban Fringe**	**Medium-Low** • The valley is somewhat susceptible to Battery Storage installations. The floodplain is undeveloped and would not be suitable for development, while the valleysides are also sensitive to this form of development. The valley is fairly contained which indicates lower susceptibility, and there is also existing settlement and human influence. • Small battery storage developments typically consist of low features, and there is some potential for mitigation.	**Medium** • The valley is somewhat susceptible to Battery Storage installations. The floodplain is undeveloped and would not be suitable for development, while the valleysides are also sensitive to this form of development. The valley is fairly contained which indicates lower susceptibility, and there is also existing settlement and human influence. • Large battery storage developments are likely to include shipping containers or taller elements. This form of development would have a considerable influence on the landscape pattern and would erode the green buffer. The susceptibilty of the existing character to this form of development is therefore higher.

LT G: Fringe Farmland

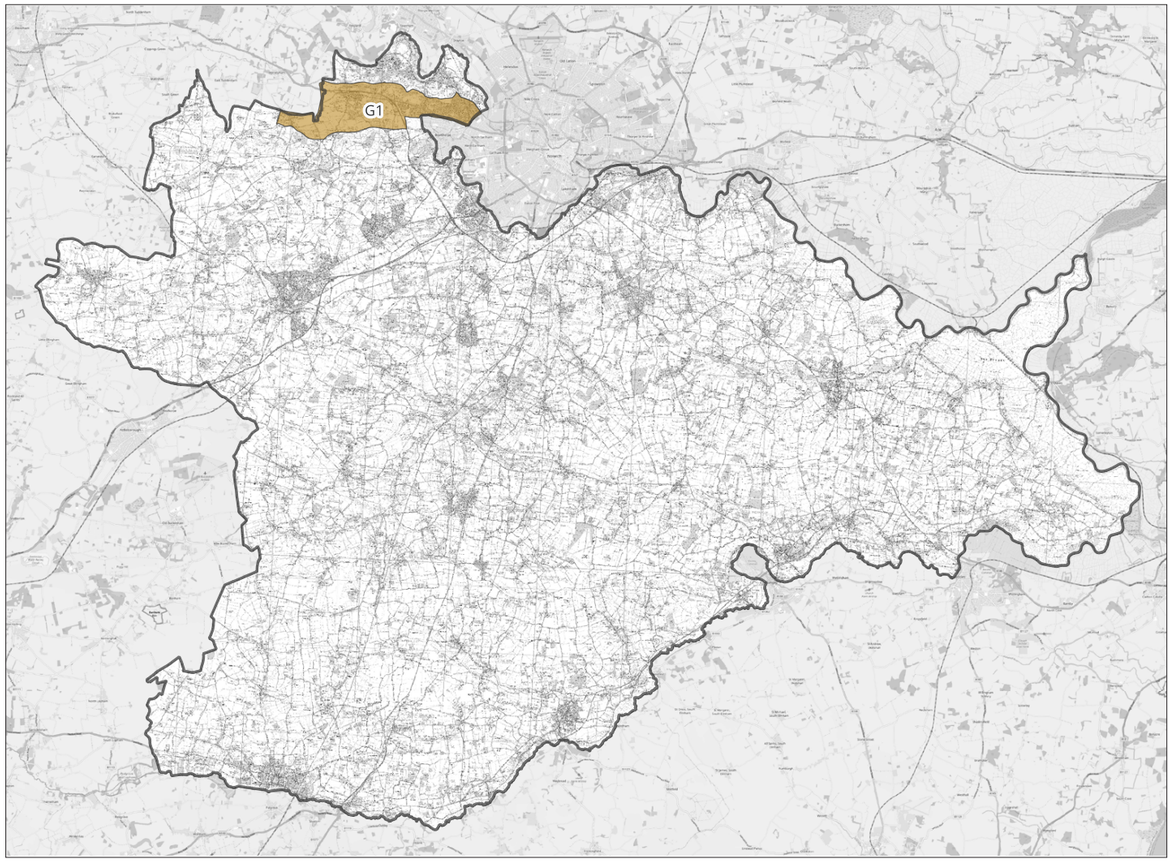
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare Rural River Valley to the south. It is defined as a distinctive landscape as a result of its relatively developed character and eroded farmland context.

Key characteristics

- Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline;
- History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas.
- Use of the area for urban fringe uses including a park and ride scheme (under construction), retail warehouses, a golf course and the Royal Norfolk Showground.
- Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton.
- Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.
- Absence of large wooded areas.
- Norwich Southern Bypass is a major feature of the area.

There is one Landscape Character Area within this type:

- G1: Easton Fringe Farmland



LT G: Fringe Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Sense of enclosure • This landscape can feel exposed in places as a consequence of the elevated ridge topography and relatively low–level of woodland.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • The more open and exposed areas have high susceptibility.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • The more open and exposed areas have high susceptibility.
Landform • Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline. • Undulating landscape with a distinct ridge top.	**Medium-High** • The ridgeline and undulating topography is sensitive. • Battery storage typically requires a level platform and the sloping topography of the ridge would therefore be susceptible to this form of development. • Battery storage on the crest of the ridge would potentially be very exposed.	**Medium-High** • The ridgeline and undulating topography is sensitive. • Battery storage typically requires a level platform and the sloping topography of the ridge would therefore be susceptible to this form of development. • Battery storage on the crest of the ridge would potentially be very exposed.
Field pattern • Field pattern is obscured by land use change across part of the area. • More rural parts of the area show a mix of regular and irregular field patterns which relates to the history of enclosure.	**Medium-Low** • Mix of irregular and regular enclosures. Medium to small-scale fields. • A development of this size is likely to be contained within a single field and the effect on the field pattern would be limited.	**Medium** • Mix of irregular and regular enclosures. Medium to small-scale fields. • A larger Battery Storage scheme would potentially have a greater effect on the field pattern.
Landcover • Defined predominantly by farmland with urban and urban fringe development. A degraded farmland context. • History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas. • Urban fringe uses including a park and ride scheme, retail warehouses, a golf course and the Royal Norfolk Showground. • Rural farmland origins and context, including both arable and pastoral farmland and retaining a peaceful rural quality.	**Varies from Low to Medium** • More developed areas including the urban fringe have a lower sensitivity. • The more rural parts of the area have moderate sensitivity.	**Varies from Low to Medium-High** • Landcover is more susceptible to development of this scale because of its greater extent. • Arable farmland is a resource in its own right, so there is some susceptibility to large scale development. • Development of this scale in the more rural parts of the area could alter perceptions of typical land cover. • More developed areas including the urban fringe have a lower sensitivity.

LT G: Fringe Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Settlement pattern and human influence • Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton. • Relatively developed character. • Retail warehouses and supermarkets on edge of town.	**Varies from Low to Medium** • The relatively developed character of much of the area indicates lower susceptibility. • The south-western part of the area however retains a rural settlement pattern.	**Varies from Low to Medium-High** • The relatively developed character of much of the area indicates lower susceptibility. • The south-western part of the area however retains a rural settlement pattern.
Perceptual aspects • Not a remote or tranquil landscape. Recent construction and land use activities have had significant effect upon the rural character. • The Norwich Southern Bypass introduces a corridor of noise and movement. Other roads of the area retain a strong rural character.	**Low** • Existing noise and disturbance indicate a low susceptibility to change.	**Low** • Existing noise and disturbance indicate a low susceptibility to change.
Visual characteristics • There are views from the ridge into the adjacent valley landscapes of the Tud and the valley of the rural Yare with its flooded gravel workings. • The ridge is a locally prominent feature of the landscape and is visible from the valleys of the Yare and Tud and the surrounding tributary valley landscape.	**Medium** • The ridge is a locally prominent feature which is sensitive to development of all types. • Battery storage would potentially appear stark in this location. • Views to and from the adjacent valley landscapes increase sensitivity.	**Medium-High** • Large battery storage developments may include shipping containers or taller structures which would have a more profound effect on the visual characteristics of the area. • Development on the ridge would be more difficult to mitigate.
Skylines • Skyline varies, sometimes formed by distant views to adjacent landscapes but often interrupted by development and shelterbelts.	**Low** • This form of development is low and is unlikely to affect the skyline.	**Medium-Low** • More developed parts of the area do not feature important or characteristic skylines and are less susceptible to change. • The ridge however forms an important part of the skyline in views from adjacent landscapes. • The presence of pylons reduces the susceptibility of the skyline.

LT G: Fringe Farmland - susceptibility to Battery Storage

Landscape attribute	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
Intactness • This Landscape Type has seen considerable land use change and there is a fragmented pattern of land uses. • Changing demands upon the land mean that the historical landscape pattern is weakly expressed. • Areas of more intact rural landscape do however occur away from urban edge.	**Medium-Low** • The land uses have evolved and there is a weak sense of historical continuity. • Battery Storage developments consist of standard components which would tend to dilute the local sense of place. • A development of this scale would have a limited effect on the intactness of the area.	**Medium** • Battery Storage developments consist of standard components which would tend to dilute the local sense of place. • Developent would further urbanise the area.

LT G: Fringe Farmland - susceptibility to Battery Storage

Overall susceptibility	Small battery storage development (up to 1ha in size)	Larger battery storage development (over 1ha in size)
LCA G1: **Easton Fringe Farmland**	**Medium** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides moderate enclosure. Views from adjacent landscapes increase sensitivity. • Small battery storage developments typically consist of low features, and there is some potential for mitigation. The existing landscape character is moderately susceptible to this type and scale of development.	**Medium-High** • The key susceptibilities relate to the ridge landform. This is however a gentle ridge landform and there is some tree and woodland cover which provides moderate enclosure. Views from adjacent landscapes increase sensitivity. • Larger battery storage schemes are likely to include shipping containers or taller structures, which could potentially appear stark on the ridge. The effects on the landscape would be harder to mitigate, and the susceptibility to this scale of development is therefore higher.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 3.4
Landscape Susceptibility Analysis
Overhead powerlines

November 2025

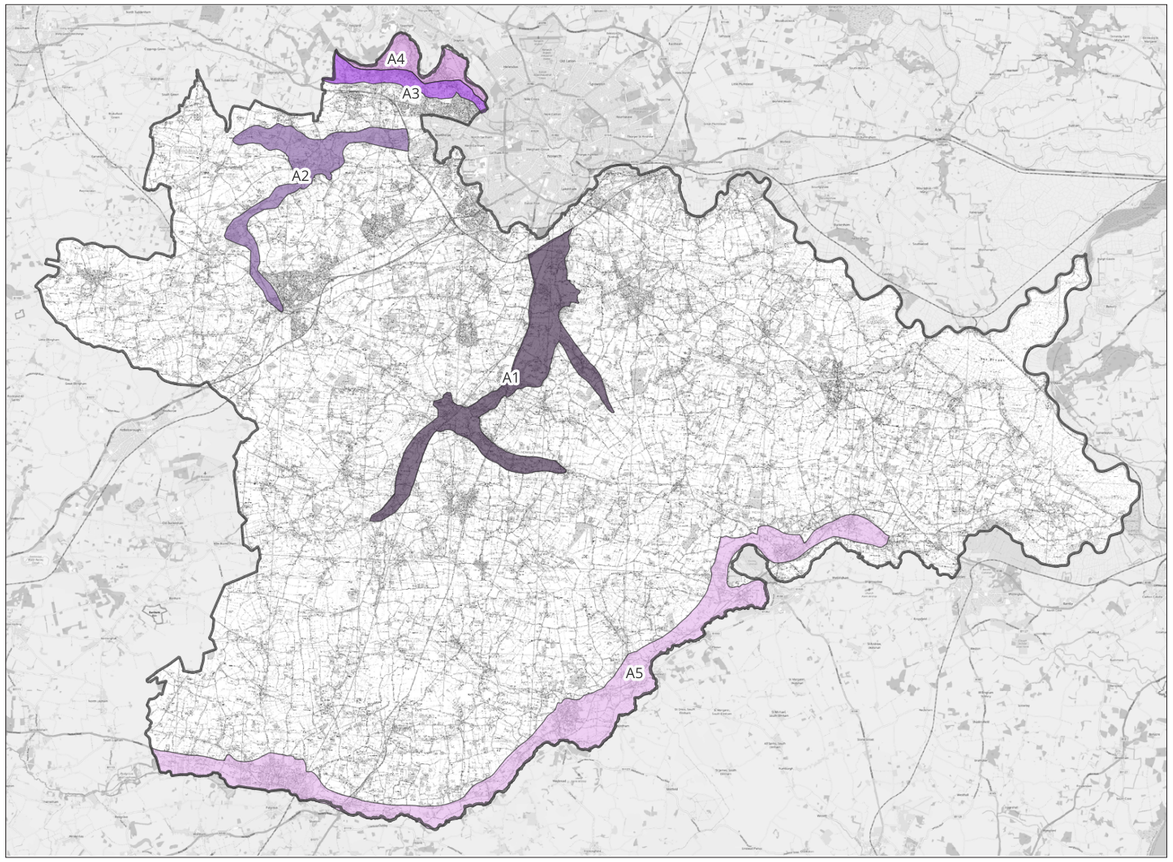
thelandscapepartnership

LT A: Rural River Valleys

The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

Five rural river valleys have been identified within South Norfolk. These are: the broad valley of the River Waveney in the south of the district, the narrower valleys of the Tud and Wensum, west of Norwich, the meandering upper reaches of the River Yare/Tiffey south west of Norwich, and the distinctive Tas Valley to the south of Norwich.

The boundary of this landscape type is defined primarily by topography and corresponds with the upper crest of the valley side, which generally occurs below the 30m AOD contour. Occasionally, the perceived boundary has been affected by cultural features which have transgressed this natural boundary to either extend or reduce the influence of the valley-form character, for example in the valley of the Waveney where the settlements have grown up as an integral part of the valley landscape, although now extend beyond the natural valley line.



Key characteristics

- Distinct valley landform created by glacial and fluvial activity, with wide flat valley floodplains, which create important divisions within the district landscape.
- Semi-enclosed landscape with long views within the valley but restricted views from the valley, creating occasional areas of more intimate character.
- Perceived presence of a river that is often not actually visible within the landscape but which at close-range is seen to be attractive, of significant size and distinct character.
- Willow pollards and lines of poplar flanking ditches and watercourses on the valley floor, plus reeds and marsh in areas.
- Attractive river crossings including fords and old bridges approached by sunken lanes.
- Areas of pastoral floodplain predominantly grazed by cattle, set within the arable landscape that occupies the valley sides.
- Historic quality to areas within the valley landscape due to the presence of visual reminders of the valleys' settled past, particularly the earthworks at Venta Icenorum, watermills, historic river crossings and round-towered churches.
- Settlements predominantly small and nucleated of strong vernacular character with scattered farmsteads on the valley floor or linear settlements at the valley side crest, with a few large towns of 'market town' quality distinct to the Waveney.
- Characteristic vernacular architecture particularly including red brick and Dutch gable ends, windmills, weather-boarded watermills and round towered churches.
- Presence of characteristic ecological assemblages, uncommon or unfound elsewhere in the district, including wetland vegetation, heathland and wet meadows/ pastures.

The individual character areas within this type are listed below:

- A1: Tas Rural River Valley
- A2: Yare/Tiffey Rural River Valley
- A3: Tud Rural River Valley
- A4: Wensum Rural River Valley
- A5: Waveney Rural River Valley

LT A: Rural River Valleys - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • The South Norfolk river valleys (except for the Waveney) are small in scale, with intricate topography. The Waveney is a broad shallow valley with simpler topography.	**LCA A1, A2, A3, A4: Medium-High** **LCA A5: Medium** • Small-scale landscapes are considered to have higher susceptibility to this form of development. 26m pylons are likely to be the tallest element within the landscape.	**LCA A1, A2, A3, A4: High** **LCA A5: Medium** • Pylons of this size would overwhelm the small-scale river valleys and become the dominant element within the landscape.
Landform • Distinct valley landform created by glacial and fluvial activity with distinct floodplain and shallow valley sides.	**Medium-High** • Complex and often sinuous landform of the river valleys contrasts with the straightness of the overhead power lines. • Shallow valleys likely to be overwhelmed by pylons.	**High** • Complex and often sinuous landform of the river valleys contrasts with the straightness of the overhead power lines. • Shallow valleys likely to be overwhelmed by pylons.
Settlement pattern and human influence • Valleys have historically been a focus for settlement and the valleys contain some historic villages. • The floodplain however tends not to be settled, except for occasional mills. • Settlements are predominantly small and nucleated with strong vernacular character. Isolated farms are present on the edges of the floodplain. • The Waveney Valley is generally rural but the area around Diss is more urbanised.	**High** • Small villages and narrow country lanes create a complex settlement pattern which has a higher susceptibility to overhead powerlines.	**High** • Small villages and narrow country lanes create a complex settlement pattern which has a higher susceptibility to overhead powerlines.
Perceptual aspects • The river valleys are typically settled, but for the most part this consists of small rural villages, often with historic character recognised through Conservation Area designations, connected by minor roads. • The generally quiet character and low density of settlement contribute to the perception of an intimate, tranquil rural landscape within the River Valleys. • Tranquillity is reduced in the Waveney Valley by the A1066 and the A143. • Tranquillity is also reduced in the middle section of the Yare Valley by the A47.	**Medium-High** • Quiet rural landscapes indicate higher susceptibility across most of this type.	**Medium-High** • Quiet rural landscapes indicate higher susceptibility across most of this type.

LT A: Rural River Valleys - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Visual characteristics • Views within the valleys vary from long range and open to some more enclosed, confined views. • Views frequently include landmark features. • Views into adjacent landscapes are for the most part restricted by the ridges marking the limits of the valleys. There are some views into the valleys from the surrounding higher land. • Key views from Waveney Valley into The Broads	**High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. • Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. • Pylons tend to be perceived negatively, so the susceptibility to this form of development is high. • Views from the Waveney Valley into The Broads increases its sensitivity.	**High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. • Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. • Pylons tend to be perceived negatively, so the susceptibility to this form of development is high. • Views from the Waveney Valley into The Broads increases its sensitivity.
Skylines • The valley crests form a skyline in views from the valley floor marking the transition to the adjacent landscape type. • In A5: Waveney Valley- a series of churches on the ridgeline form a prominent landmark. • Skyline is usually undeveloped creating a rural context. • Woodland along the valley crest is a key feature of A3: Tud River Valley.	**Medium-High** • Valley landform tends to create prominent, sometimes distinctive skylines which have higher susceptibility. • Existing pylons are present in places. Where pylons are present this lowers local susceptibility.	**Medium-High** • Valley landform tends to create prominent, sometimes distinctive skylines which have higher susceptibility. • Existing pylons are present in places. Where pylons are present this lowers local susceptibility.

LT A: Rural River Valleys - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Intactness • Ditches, fens, meadows, riparian vegetation and vernacular buildings create a sense of place. • The Tas Valley has an intact character. Small villages are present just above the floodplain. The character is somewhat influenced by nearby pylons, railway and A-road. • The Yare and Tiffey Valleys have an intact rural character with meadows, wet woodland, and historic parkland. Small villages are also present just above the floodplain. A tranquil character away from the A47, and a strong sense of place. • The Tud Valley is largely undeveloped and the historic pattern is still legible, however the A47 cuts through the pre-existing landscape pattern and weakens the sense of character. The eastern portion of the valley is found within an increasingly urban context. The land use here has changed with the introduction of a golf course at Costessey Park, and paddocks. • The Wensum Valley is partially disturbed by flooded mineral workings in the base of the valley. The valley is largely undeveloped. • The Waveney Valley is undeveloped and largely rural except around Diss. Pattern of meadows, fens and carrs remains intact throughout most of the area. Tranquillity is reduced by the A143, but there is a relatively strong sense of place.	**High** • Standard design of pylons diminishes local distinctiveness. • Strong sense of place indicates a high susceptibility to this form of development.	**High** • Standard design of pylons diminishes local distinctiveness. • Strong sense of place indicates a high susceptibility to this form of development.

LT A: Rural River Valleys - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA A1: **Tas Rural River Valley**	**Medium-High** • The existing characteristics of the Tas Valley are considered sensitive to overhead power lines. The visual characteristics of the landscape are highly sensitive to overhead powerlines on account of their height. Pylons are also incompatible with existing features in terms of their visual appearance. The complex landscape patterns and high scenic quality of the Tas Valley indicates high sensitivity, while the strong sense of place is vulnerable to generic forms of development such as overhead powerlines. • A new 132kV line in connection with the existing 400kV line would cause visual confusion.	**Medium-High** • The Tas Valley is considered to be very sensitive to 400kV lines. Pylons of this size would overwhelm the existing valley landform, and are not relatable to existing landscape features. An existing 400kV line already has some influence on the character of the Tas Valley. A new 400kV line would cause pylons to become a dominant feature within the landscape. This scale of development would alter the characteristics of the landscape.
LCA A2: **Yare/Tiffey Rural River Valley**	**High** • The existing characteristics of the Yare/ Tiffey Valley are considered highly sensitive to overhead power lines. The undisturbed quality of the valley would be compromised by electricity transmission infrastructure, and the intricate topography is unsuited to this type of development. The visual characteristics of the landscape are highly sensitive to overhead powerlines on account of their height. The complex landscape patterns and high scenic quality of the Yare/Tiffey Valley indicates high sensitivity, while the strong sense of place is vulnerable to generic forms of development such as overhead powerlines.	**High** • The Yare/Tiffey Valley is considered to be very sensitive to 400kV lines. Pylons of this size would overwhelm the existing valley landform, and are not relatable to existing landscape features. The pylons would become new and dominant elements within the landscape, causing a fundamental change in character.

LT A: Rural River Valleys - susceptibility to overhead powerlines

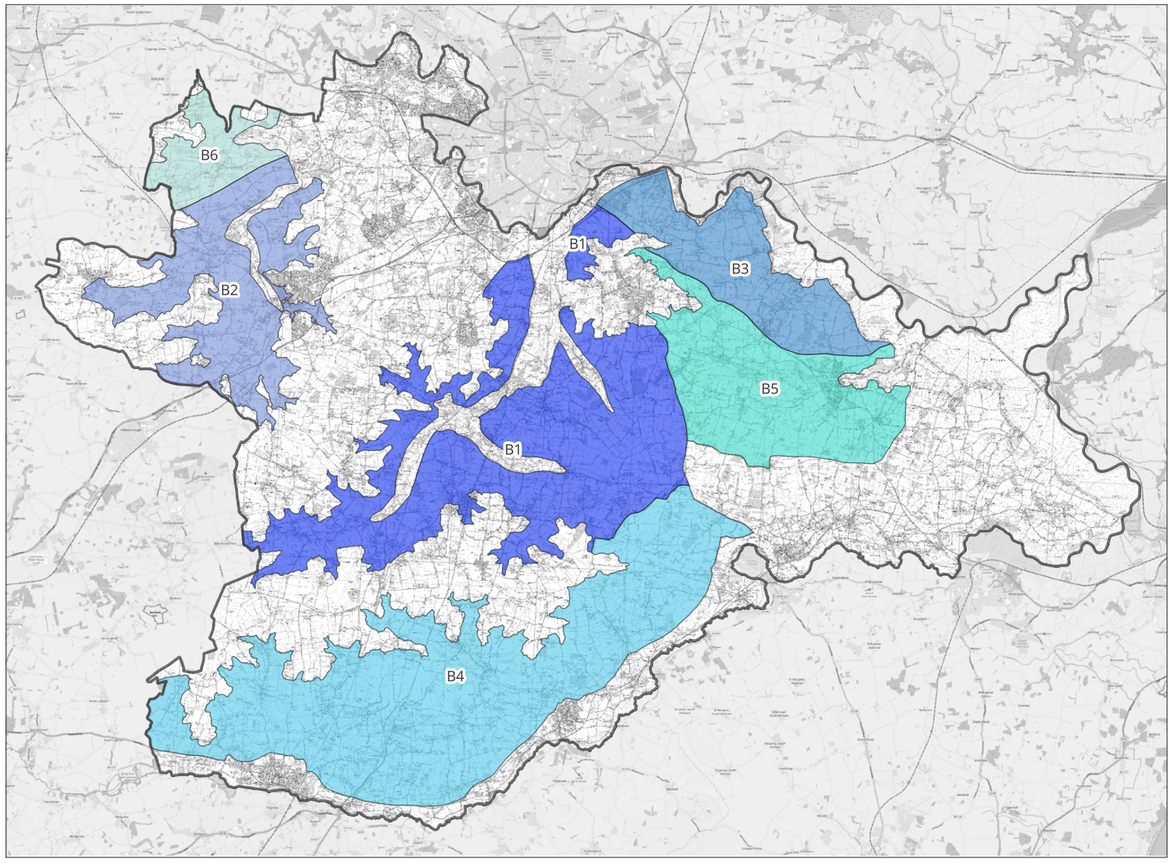
Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA A3: **Tud Rural River Valley**	**High** • The existing characteristics of the Tud Valley are considered sensitive to 132kV lines, which would overwhelm the small-scale valley landform. The visual characteristics of the landscape are highly sensitive to overhead powerlines on account of their height. Pylons are also incompatible with existing features in terms of their visual appearance. The complex landscape patterns and high scenic quality of the Tud Valley indicates high sensitivity, while the sense of place is vulnerable to generic forms of development such as overhead powerlines.	**High** • The Tud Valley is considered to be very sensitive to 400kV lines. Pylons of this size would overwhelm the existing valley landform, and are not relatable to existing landscape features. The pylons would become new and dominant elements within the landscape, causing a fundamental change in character.
LCA A4: **Wensum Rural River Valley**	**High** • The existing characteristics of the Wensum Rural River Valley are considered highly sensitive to overhead power lines. The meandering valley landform is incompatible with the straight alignments of overhead wires. The visual characteristics of the landscape are highly sensitive to overhead powerlines on account of their height. The complex landscape patterns and high scenic quality of the Wensum Valley indicates high sensitivity, while the strong sense of place is vulnerable to generic forms of development such as overhead powerlines.	**High** • The Wensum Valley is considered to be very sensitive to 400kV lines. Pylons of this size would overwhelm the existing valley landform, and are not relatable to existing landscape features. The pylons would become new and dominant elements within the landscape, causing a fundamental change in character.
LCA A5: **Waveney Rural River Valley**	**High** • The existing characteristics of the Waveney Valley are considered sensitive to 132kV lines. The visual characteristics of the landscape are highly sensitive to overhead powerlines on account of their height. Pylons are also incompatible with existing features in terms of their visual appearance. The high scenic quality of the Waveney Valley indicates high sensitivity, while the strong sense of place is vulnerable to generic forms of development such as overhead powerlines.	**High** • The Waveney Valley is considered to be very sensitive to 400kV lines. Pylons of this size would overwhelm the existing valley landform, and are not relatable to existing landscape features. The pylons would become new and dominant elements within the landscape, causing a fundamental change in character.

LT B: Tributary Farmland

The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole of the district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD.

Key characteristics

- Shelving and gently undulating landform created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.
- Tamed and peaceful farmland with scattered small farm woodlands creating a quiet rural landscape.
- Dispersed but evenly distributed settlement pattern of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.
- An intricate network of narrow, winding rural lanes often bounded by banks or ditches with a sense of impenetrability.
- Tributaries elusive- evident but usually hidden within the landscape by topography or trees.
- Medium to large-scale arable farmland of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.
- Remnant parkland, which sometimes relates to former deer parks, plus areas of common land.
- Mixed architectural character comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.
- High proportion of important ecological assemblages protected as SSSIs including woodland, and wetland habitats.



The individual character areas within this type are listed below:

- B1: Tas Tributary Farmland
- B2: Tiffey Tributary Farmland
- B3: Rockland Tributary Farmland
- B4: Waveney Tributary Farmland
- B5: Chet Tributary Farmland
- B6: Yare Tributary Farmland

LT B: Tributary Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views. • Contrasting sense of enclosure from small scale and enclosed in the wooded valleys to wider, more open areas across large arable fields on higher ground.	**Medium** • In terms of scale the Tributary Farmlands lie in the middle of the susceptibility spectrum.	**Medium-High** • Pylons of this size are less relatable to existing landscape features so the susceptibility to this form of development is considered to be higher.
Landform • Varied landform from flat to gently undulating, sloping towards tributary valleys. • Minor stream valleys cut through the glacial till to create a landscape of restrained variety.	**Medium** • The area generally consists of gently undulating land which lies in the middle of the susceptibility spectrum.	**Medium** • The area generally consists of gently undulating land which lies in the middle of the susceptibility spectrum.
Settlement pattern and human influence • Dispersed settlement pattern of small villages, hamlets, farmsteads and manors distributed across the landscape. Occasional large agricultural buildings e.g. poultry sheds • Compact villages sheltered within small valleys. • Mixed architectural character comprising modern bungalow development and vernacular architecture with stepped gable ends and other vernacular characteristics. Local building materials such as brick and flint. • Isolated churches. Locally distinctive round towered churches e.g. St Michael's Aslacton • The Chet Tributary Farmland contains the small town of Loddon.	**Medium-High** • The historic settlement pattern is still evident with only modest recent expansion. • Existing pylons introduce more human influence in places, which reduces the local susceptibility. • Powerlines could affect views to locally distinctive round towered churches and other historic features. • Powerlines would introduce an increased sense of human influence.	**High** • The historic settlement pattern is still evident with only modest recent expansion. • Existing pylons introduce more human influence in places, which reduces the local susceptibility. • Powerlines could affect views to locally distinctive round towered churches and other historic features. • Powerlines of this scale would introduce a strong sense of human influence.

LT B: Tributary Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Perceptual aspects • For the most part the landscape is peaceful, rural and tranquil. • Roads introduce a local source of movement within the landscape.	**Medium** • Not as sensitive as wild or remote landscapes; however, pylons can affect the rural qualities of the landscape.	**Medium-High** • Pylons of this size have a greater effect on the rural qualities of the landscape.
Visual characteristics • Transitional landscape occupying the mid ground between the plateaux and the main river valleys, providing opportunities for long and framed views. • Within these landscapes views are across arable fields to sloping valley sides and down to small-scale wooded tributary valleys. • Framed and open, long-ranging views across the countryside. • Large agricultural buildings can be visually prominent. • Pylons and poles interrupt the landscape wherever they are present, notably towards the northern part of the district. • Important views to landmarks such as Wymondham Abbey and Wicklewood Windmill that provide a sense of place. • Elements of vernacular interest that include round-towered churches. • Generally undeveloped skylines. • Strong visual influence of the adjoining Broads in character areas B3 and B5. • Visual influence of Norwich in character areas B1 and B3.	**Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Connections to surrounding landscapes including the Broads and Norwich indicate higher susceptibility. • The scenic quality is sensitive to tall structures such as pylons.	**Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Connections to surrounding landscapes including the Broads and Norwich indicate higher susceptibility. • The scenic quality is sensitive to tall structures such as pylons.

LT B: Tributary Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Skylines • The skyline varies across the landscape type from clear to interrupted by woodland blocks and undulations in landform. • In the enclosed tributary valleys the skyline can include prominent valley crests.	**Medium** • Undeveloped skylines, though not generally prominent or distinctive. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility. • Prominent valley crests are sensitive to development.	**Medium-High** • Undeveloped skylines, though not generally prominent or distinctive. • Pylons of this size would have a large effect on the skyline. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility. • Prominent valley crests are particularly sensitive to development.
Intactness • Some roads have been modernised and there has been some modest expansion of settlements. Changing agricultural practices have led to a simplification of the landscape pattern and the loss of some landscape features. The historic pattern is nonetheless legible, and there are relatively few modern elements. The rural character of the area is intact, and there is a moderately strong sense of place.	**Medium-High** • The intact rural character is sensitive to the urbanising influence of an overhead transmission line. • Standard design of pylons would dilute the sense of place.	**Medium-High** • The intact rural character is sensitive to the urbanising influence of an overhead transmission line. • Standard design of pylons would dilute the sense of place.

LT B: Tributary Farmland - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA B1: **Tas Tributary Farmland**	**Medium** • The Tas Tributary Farmlands are sensitive due to the strong rural and tranquil character across most of the area, and sensitive views to heritage assets such as Venta Icenorum, Dunston Hall or to Norwich. Views to church towers are sensitive to this particular form of development, as are the undeveloped skylines. • 132kV powerlines coupled with the existing 400kV line would create visual confusion. The existing 400kV line has already caused a considerable change in character in this area and there is limited capacity to adsorb further change.	**Medium-High** • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. • Where 400kV powerlines are present in the landscape this has already caused a considerable change in character. The susceptibility of the key characteristics to this type of development is therefore judged as Medium-High.
LCA B2: **Tiffey Tributary Farmland**	**Medium-High** • The strong rural, tranquil and undisturbed character across most of the area means that it is sensitive. Views to church towers or to Wicklewood Windmill are sensitive to this particular form of development, as are the undeveloped skylines. This particular form of development would have a large effect on the character of the existing views.	**High** • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. The area has an undisturbed character which is vulnerable to development of this type.

LT B: Tributary Farmland - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA B3: **Rockland Tributary Farmland**	**Medium** • The Rockland Tributary Farmlands are sensitive due to the rural and tranquil character across most of the area. Views to the Broads and to church towers are sensitive to this particular form of development, as are the undeveloped skylines. • The existing 132kV powerlines in this area have caused a considerable change in character and there is limited capacity to absorb further change.	**High** • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. 400kV powerlines coupled with the existing 132kV lines would create visual confusion. Overhead powerlines would become the dominant element of the landscape and there would also be negative effects on the setting of The Broads. Susceptibility to this form of development is therefore assessed as High.
LCA B4: **Waveney Tributary Farmland**	**Medium-High** • The Waveney Tributary Farmlands are sensitive due to the peaceful rural character across most of the area. Views to church towers are sensitive to this particular form of development, as are the undeveloped skylines. • A 132kV line would compromise the existing characteristics of the landscape, so susceptibility is assessed as Medium-High.	**High** • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. The existing 400kV line has already caused a localised change in character. The susceptibility of the key characteristics to this type of development is therefore assessed as High.

LT B: Tributary Farmland - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA B5: **Chet Tributary Farmland**	**Medium** • The Chet Tributary Farmlands are sensitive due to the peaceful rural character across most of the area. Views to round-towered and isolated church are sensitive to this particular form of development, as are the undeveloped skylines. • The existing 132kV powerlines in this area have caused a considerable change in character and there is limited capacity to absorb further change.	**High** • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. 400kV powerlines coupled with the existing 132kV lines would create visual confusion. Overhead powerlines would become the dominant element of the landscape and there would potentially be negative effects on the setting of The Broads. Susceptibility to this form of development is therefore assessed as High.
LCA B6: **Yare Tributary Farmland**	**Medium** • The Yare Tributary Farmlands are sensitive due to the intact rural character of the area. Views to church towers are sensitive to this particular form of development, as are the undeveloped skylines. • Where 400kV powerlines are present in the landscape this has already caused a considerable change in character. 132kV lines coupled with the existing 400kV line would create visual confusion.	**Medium-High** • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. • Where 400kV powerlines are present in the landscape this has already caused a considerable change in character. The susceptibility of the key characteristics to this type of development is therefore judged as Medium-High.

LT C: Tributary Farmland with Parkland

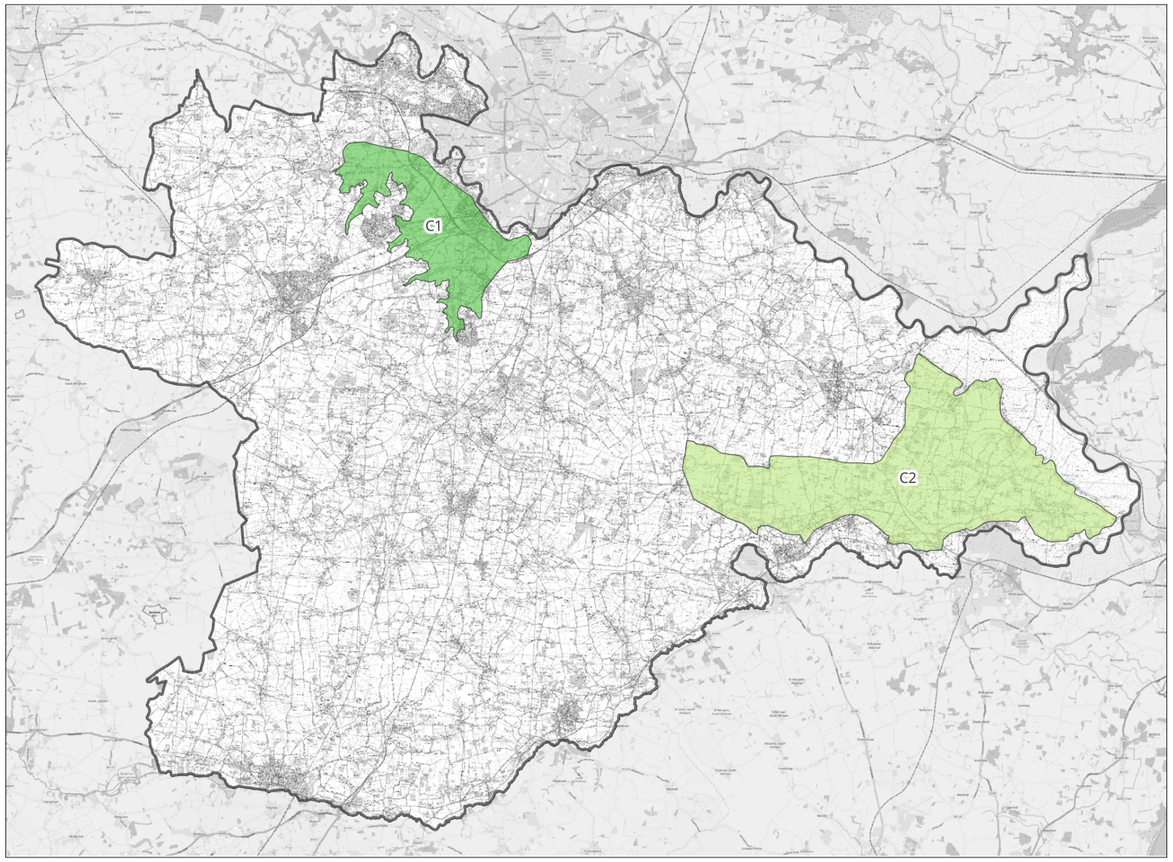
The Tributary Farmland with Parkland Landscape Type occupies two discrete areas of landscape, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very distinctive character throughout much of the area.

Key characteristics

- Gently undulating landform created by the presence of small tributary stream valleys which cut through the glacial till landscape providing a sense of restrained variety
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes, providing varied opportunities for long and framed views
- Presence of large parkland estates particularly associated directly with the tributary valleys. Estate railings, prominent gatehouses, boundary fences and tree-lined avenues with areas of pastoral farmland and horse grazing reveal the presence of the wooded parkland in the wider arable landscape.
- Context of tamed and peaceful arable farmland with scattered small farm woodlands, including ancient woodland, and medium to large-scale fields of sugarbeet and cereal surrounded by sparse hedges and hedgerow trees.
- Small fields of more unusual crops such as sunflowers and asparagus bounded by banks of coppiced willow.
- Dispersed but evenly distributed settlement pattern of small farmsteads and small, nucleated villages.
- An intricate network of small rural roads often bounded by banks or ditches with a sense of impenetrability.
- Tributaries visually elusive and often physically inaccessible- rarely evident because they are hidden within the landscape by topography or trees, particularly where they are associated with the parkland which prevents public access to them.
- Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped and Dutch gable ends and brick and flint.
- Isolated flint round towered churches particularly evident.
- Characteristic large detached halls and manor houses, usually constructed of brick and of high architectural quality, associated with the parkland estates. These are frequently screened by woodland, except at close range.

The individual character areas within this type are listed below:

- C1: Yare Tributary Farmland with Parkland
- C2: Thurlton Tributary Farmland with Parkland



LT C: Tributary Farmland with Parkland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • Transitional landscape occupying the midground between the upland plateau and the main river valley landscapes, providing varied opportunities for open and framed views. • Larger scale fields contrast with the more intimate valleys and smaller-scale pastoral areas and villages.	**Medium** • In terms of scale the Tributary Farmland with Parklands lie in the middle of the susceptibility spectrum.	**Medium-High** • Pylons of this size are less relatable to existing landscape features so the susceptibility to this form of development is considered to be higher.
Landform • Gently undulating landform created by the presence of small tributary stream valleys which cut through the landscape providing a sense of restrained variety.	**Medium** • The area consists of gently undulating land which lies in the middle of the susceptibility spectrum.	**Medium** The area consists of gently undulating land which lies in the middle of the susceptibility spectrum.
Settlement pattern and human influence • Dispersed but evenly distributed settlement with a pattern of farmsteads and small villages. • Sparse settlement pattern across C2. C1 Yare Tributary Farmland somewhat more settled with larger village of Cringleford as well as Norfolk & Norwich Hospital and A47. • Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped gables and brick and flint. • Vernacular architectural character, predominantly of rural buildings and estate dwellings. More modern dwellings are found in larger villages.	**LCA C1: Medium** **LCA C2: Medium-High** • C1 Yare Tributary Farmland forms part of the Norwich Southern Bypass Landscape Protection Zone so is sensitive to further development. Pylons would not affect the openness of the landscape as such, but they would compromise the rural character as experienced from the A47. • C2 has a sparse rural settlement pattern which is sensitive to this type of development. • Potential effects on the setting of historic features.	**LCA C1: Medium** **LCA C2: Medium-High** • C1 Yare Tributary Farmland forms part of the Norwich Southern Bypass Landscape Protection Zone so is sensitive to further development. Pylons would not affect the openness of the landscape as such, but they would compromise the rural character as experienced from the A47. • C2 has a sparse rural settlement pattern which is sensitive to this type of development. • Potential effects on the setting of historic features.
Perceptual aspects • Tamed arable farmland. • C2 is a peaceful rural landscape. C1 is adversely influenced by the Norwich Southern Bypass and the A11. • Pylons and the A47 negate any sense of remoteness within C1. There is however a sense of remoteness within C2, particularly adjacent to The Broads. .	**LCA C1: Low** **LCA C2: Medium-High** • Less sensitive than natural or wild landscapes. • The lack of remoteness or tranquillity within C1 reduces susceptibility. • Pylons would have a negative effect on the rural qualities and sense of remoteness within C2.	**LCA C1: Low** **LCA C2: Medium-High** • Less sensitive than natural or wild landscapes. • The lack of remoteness or tranquillity within C1 reduces susceptibility. • Pylons would have a negative effect on the rural qualities and sense of remoteness within C2.

LT C: Tributary Farmland with Parkland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Visual characteristics • Views to wide open horizons and long views across denuded hedgerow boundaries and arable farmland from higher areas. • Prominent views to historic features such as isolated and round-towered churches. • Views framed and broken by woodland blocks and estate parkland with large manor buildings. • Intermittent, long views into The Broads from C2. • Views to Norwich in particular from the southern bypass which bisects C1. • Characteristic large halls though frequently screened by woodland. • Isolated round towered flint churches particularly evident. • Mixed architectural character comprising modern development and vernacular architecture.	**LCA C1: Medium** **LCA C2: Medium-High** • Large parts of C1 lie within the Norwich View Cones which are identified in the Development Management Policies. Pylons would not obstruct views, but would detract from the composition of the views. • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Existing pylons within C1 reduce sensitivity. • Long views, including views to adjacent landscapes, increase susceptibility. • The visual character is particularly sensitive to overhead power lines due to their height.	**LCA C1: Medium** **LCA C2: Medium-High** • The sensitivity of C1 is reduced due to the presence of existing pylons.
Skylines • In places interrupted by woodland, pylons and posts. • Views to parkland edges and woodland. • Intermittent long views to development at the City of Norwich and Norwich Southern Bypass (from C1).	**C1: Low** **C2: Low** • Existing pylons have considerable influence on character in C1. • 132kV lines already feature within C2.	**C1: Low** **C2: Medium-High** • Existing pylons have considerable influence on character in C1. • New 400kV line would create visual confusion with existing 132kV lines in C2.

LT C: Tributary Farmland with Parkland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Intactness • Intactness varies. Some areas have experienced considerable change with the introduction of the Norwich Southern Bypass and the expansion of settlements such as Cringleford, and the introduction of pylons and other development. • Elsewhere, there is a much stronger and more intact rural character.	**LCA C1: Medium-Low** **LCA C2: High** • Whilst pylons would not affect the openness of the landscape as such they would affect the rural character within C1. Pylons as tall features would be intrusive within views towards Norwich and would compromise the undeveloped approaches to the city. • Existing development including pylons within C1 reduces the sensitivity of this area. • The stronger character of C2 has increased susceptibility to all forms of development, including overhead powerlines.	**LCA C1: Medium-Low** **LCA C2: High** • Whilst pylons would not affect the openness of the landscape as such they would affect the rural character within C1. Pylons as tall features would be intrusive within views towards Norwich and would compromise the undeveloped approaches to the city. • Existing development including pylons within C1 reduces the sensitivity of this area. • The stronger character of C2 has increased susceptibility to all forms of development, including overhead powerlines.

LT C: Tributary Farmland with Parkland - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA C1: **Yare Tributary Farmland with Parkland**	**Medium-Low** • Pylons in this area have effectively become a dominant element of the landscape. Considering the effect that the existing pylons have already had on the landscape the susceptibility to further overhead powerlines is reduced. The Registered Park and Garden at Intwood Hall is however sensitive. New overhead powerlines would not affect the openness of the NSBLPZ as such, but would interfere with key views to Norwich. Susceptibility is therefore assessed as Medium-Low.	**Medium-Low** • Pylons in this area have effectively become a dominant element of the landscape. Considering the effect that the existing pylons have already had on the landscape the susceptibility to further overhead powerlines is reduced. The Registered Park and Garden at Intwood Hall is however sensitive. New overhead powerlines would not affect the openness of the NSBLPZ as such, but would interfere with key views to Norwich. Susceptibility is therefore assessed as Medium-Low. • New overhead powerlines would have a further cumulative effect on character.
LCA C2: **Thurlton Tributary Farmland with Parkland**	**Medium** • The Thurlton Tributary Farmland with Parklands are sensitive due to the remoteness and peacefulness which exists through much of the area. The presence of historic estates increases the sensitivity of the area. Views to the Broads and to church towers are sensitive to this particular form of development, as are the undeveloped skylines. • The existing 132kV lines have had an effect on the character of the area and there is limited capacity to absorb further change.	**High** • The Thurlton Tributary Farmland with Parklands are sensitive due to the remoteness and peacefulness which exists through much of the area. The presence of historic estates increases the sensitivity of the area. Views to the Broads and to church towers are sensitive to this particular form of development, as are the undeveloped skylines. • The existing 132kV lines have had an effect on the character of the area which indicates sensitivity to this form of development. • A new 400kV line would create a confused wirescape. Pylons would become a dominant element of the landscape which would indicate a fundamental change in character.

LT D: Settled Plateau Farmland

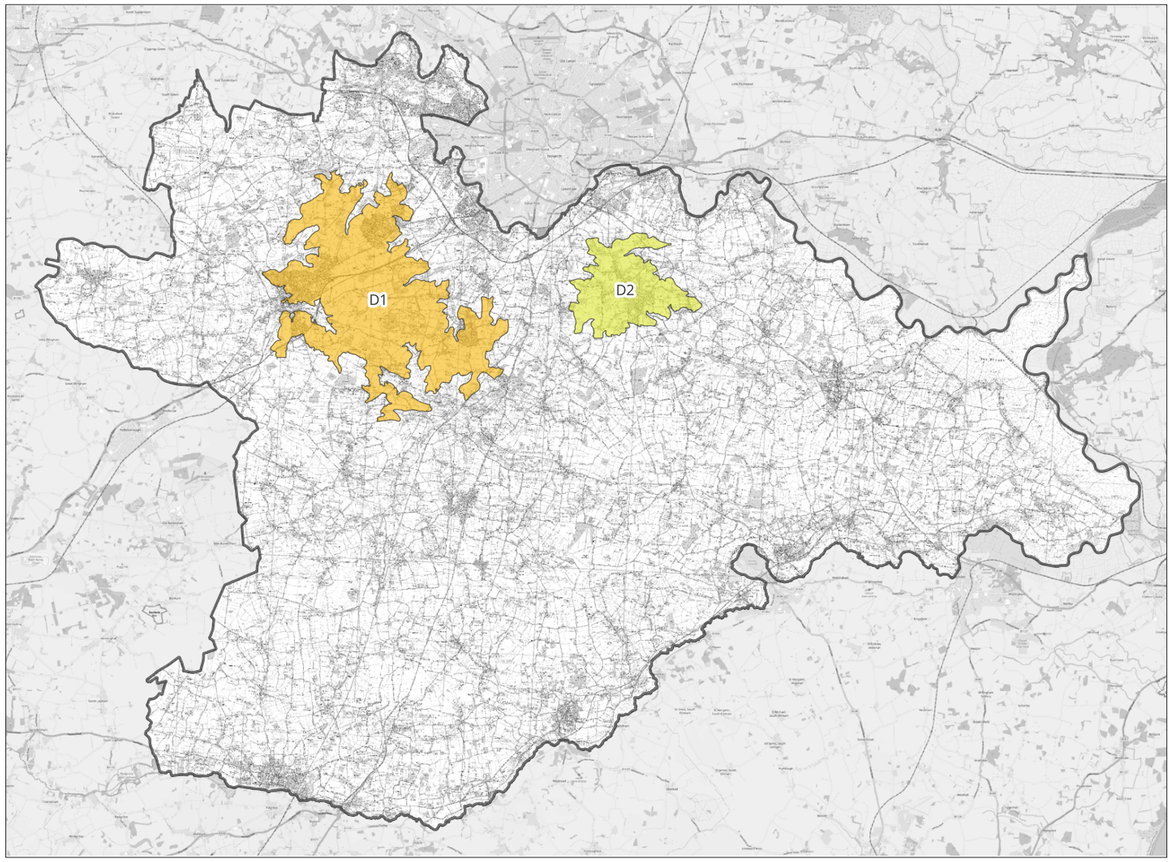
There are two areas of the Settled Plateau Farmland Landscape Type, one to the east and one to the west of the Tas Valley around the settlements of Wymondham and Poringland respectively. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The boundaries of these areas are largely represented by the 40 and 50m AOD contours. However, small and fragmented areas above the 40m contour have not been classified as Settled Plateau Farmland.

Key characteristics

- Distinct flat to gently rising elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture principally characteristic swathes of cereal, oilseed rape and sugarbeet.
- Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements.
- Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. Elements of plateau interior not visible except from other plateau areas or where tall intrusive elements are present.
- Mature remnant oak hedgerow trees are features in the agricultural landscape however hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.
- Presence of large communications masts which interrupt of the sense of openness yet provide distinct landmarks.
- Settled landscape mostly comprising large edge-of-plateau towns and large villages with other smaller nucleated settlements dispersed across the plateau.
- Some evidence of historical features within the landscape including isolated churches (some of which are round-towered), moats, historic parkland and some farm ponds.
- Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development.

The individual character areas within this type are listed below:

- D1: Wymondham Settled Plateau Farmland
- D2: Poringland Settled Plateau Farmland



LT D: Settled Plateau Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • Large expanse of flat landform. Medium to large-scale fields. • Views on the plateau can be contained by hedges, while other areas are more open. Visual qualities influence the sense of scale. • Loss of hedges has created a larger scale landscape.	**Medium-Low** • Larger-scale landscapes are considered less sensitive to this form of development.	**Medium-Low** • Larger-scale landscapes are considered less sensitive to this form of development.
Landform • Distinct flat to gently rolling, elevated landform as a result of the simple underlying geology. • The area centred on Poringland has the greatest variation, rising up to a gentle 'dome' at 75m AOD which is one of the most elevated areas in the district. • The boundaries of these areas are largely represented by the 40 and 50m AOD contours – the plateau edges are highly visible from adjacent landscapes.	**LCA D1: Medium-Low** **LCA D2: Medium-High** • The simple flat landform of D1 is less sensitive to this type of development. • The elevated, prominent, domed landform of D2 is more sensitive to development. Pylons would appear intrusive on the high ground.	**LCA D1: Medium-Low** **LCA D2: High** • The simple flat landform of D1 is less sensitive to this type of development. • The elevated, prominent, domed landform of D2 is more sensitive to development. Pylons would appear intrusive on the high ground.
Settlement pattern and human influence • Historically somewhat sparsely settled but with some dispersed settlement including green-side settlement. • The modern day settlement pattern includes the town of Wymondham and a number of large villages. • Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development. • Wymondham and Mulbarton retain a historic character despite more recent peripheral development, whereas Poringland and Hethersett have a much more modern character (characterised by post-war bungalow development). • Former airfield at Hethel (now site of motor works).	**Medium** • Settlement pattern has somewhat altered with the expansion of settlements. More developed character is apparent in the vicinity of Wymondham, Hethersett and the A11. • Balance of settlement and countryside indicates medium susceptibility. • Powerlines could detract from historic features including vernacular buildings. • Powerlines would introduce an increased sense of human influence.	**Medium-High** • Settlement pattern has somewhat altered with the expansion of settlements. More developed character is apparent in the vicinity of Wymondham, Hethersett and the A11. • Powerlines could detract from historic features including vernacular buildings. • Powerlines of this scale would introduce a strong sense of human influence.

LT D: Settled Plateau Farmland - susceptibility to Overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Perceptual aspects • A number of large settlements are present and there is therefore little sense of remoteness. • The A11 cuts across the Wymondham Settled Plateau Farmlands and introduces a source of noise, movement and modernity. • Whilst this is a settled landscape the villages are set within a rural landscape and there is a sense of countryside.	**Medium** • Pylons would tend to compromise perceptions of rurality.	**Medium-High** • Pylons of this size are less relatable to existing elements and would have a more profound effect on perceptions of rurality.
Visual characteristics • Strong open horizons – the archetypal 'Norfolk' Landscape. • Illusions of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape. • Views to large communication masts, settlement on the plateau edge and areas of parkland and woodland blocks. • Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. • D2 plateau is very prominent in views from the surrounding landscape. • Mast at Poringland has high visibility but also serves as a landmark. • A number of large-scale farm buildings including grain towers and silos that punctuated the horizon (particularly near Silfield).	**LCA D1: Medium** **LCA D2: Medium-High** • Reasonably good scenic character including some characteristic views indicates moderate susceptibility. • The prominent nature of the Poringland plateau makes it sensitive to views from adjoining landscape character areas, so the susceptibility of this area is increased to Medium-High.	**LCA D1: Medium** **LCA D2: Medium-High** • The visual character is considered more sensitive to development of this scale.
Skylines • Strong open horizons – the archetypal 'Norfolk' landscape. • Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.	**Medium-High** • D2 features prominent skylines, but the presence of a mast reduces susceptibility to some extent. • Existing pylons are present on the edges of D1 and D2. • Strong open horizons are an important part of the character of the region, which increases sensitivity.	**Medium-High** • D2 features prominent skylines, but the presence of a mast reduces susceptibility some extent. • Existing pylons are present on the edges of D1 and D2. • Strong open horizons are an important part of the character of the region, which increases sensitivity.

LT D: Settled Plateau Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Intactness • The landscape has clearly experienced considerable change through the expansion of settlements. • Poringland extends across the central part of D2 and is a relatively modern settlement. • Within D1, the settlements of Wymondham, Hethersett and Mulbarton have extended into the countryside, and the area is bisected by the A11. Earlier patterns have also been disrupted by the introduction of a WW2 airfield. The settlements are nonetheless separated by substantial areas of countryside.	**Medium** • Overhead powerlines would introduce modern features which would affect the intactness of the countryside. The area already includes some development, so susceptibility is assessed as medium.	**Medium** • Overhead powerlines would introduce modern features which would affect the intactness of the countryside. The area already includes some development, so susceptibility is assessed as medium.

LT D: Settled Plateau Farmland - susceptibility to overhead powerlines

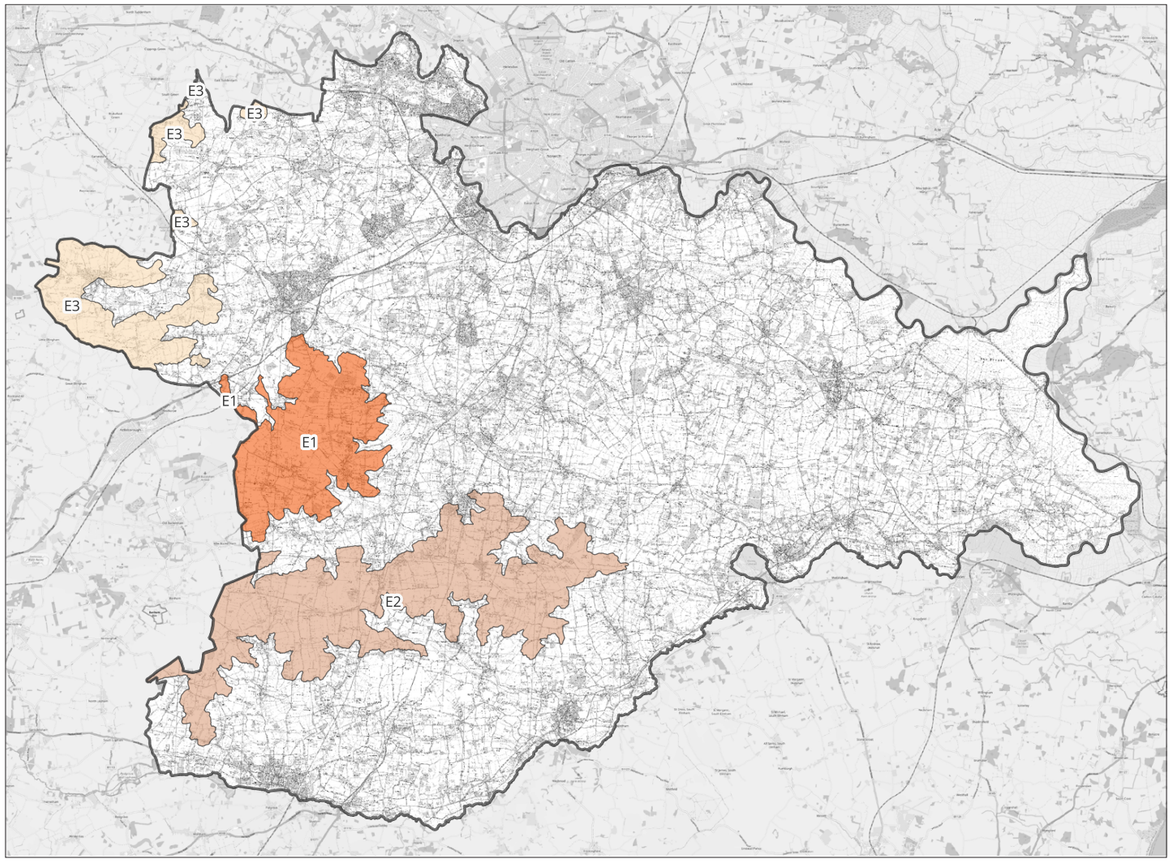
Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA D1: **Wymondham Settled Plateau Farmland**	**Medium** • Pylons would detract from the representative 'Norfolk' views which are present within this area. • Considering the scale of the landscape and the presence of a certain amount of settlement already the susceptibility is generally Medium. Sensitivity would be higher where there are views to Norwich or to Wymondham Church.	**Medium-High** • Pylons of this size would appear particularly intrusive within the representative 'Norfolk' views. Views to landmark features such as Wymondham Church are particularly sensitive to this form of development, as are the undeveloped skylines. • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. Where 400kV powerlines are present in the landscape this has already caused a considerable change in character. The susceptibility of the key characteristics to this type of development is therefore judged as Medium-High.
LCA D2: **Poringland Settled Plateau Farmland**	**Medium** • Pylons would detract from the strong open horizons which are present within this area. • Considering the scale of the landscape and the presence of a certain amount of settlement already the susceptibility is generally Medium. Sensitivity would be higher where there are views to Norwich or to Wymondham Church.	**High** • Pylons of this size would severly detract from the strong open horizons which are present within this area. Long views from the plateau edge are particularly sensitive to this form of development, as are the undeveloped skylines. • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. The visibility of the existing mast indicates high sensitivity to this form of development.

LT E: Plateau Farmland

The Plateau Farmland Landscape Type occurs in the western part of the district in three principal areas, all of which continue beyond the South Norfolk boundary into the adjoining Breckland District. The Plateau Farmlands are defined by their elevation and all are primarily delineated by the 50m contour. However, it should be noted that not all areas above the 50m contour line have been classified as Plateau Farmland due to differing land use patterns.

Key characteristics

- Distinct flat and elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture with characteristic swathes of cereal, oilseed rape and sugarbeet monoculture.
- Sense of openness and exposure due to the elevation and scarcity of enclosing elements.
- Long views of the district from the plateau edges and shorter internalised plateau views. Inner plateau largely invisible from other areas.
- Mature remnant oak hedgerow trees are features in the agricultural landscape. However, hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Straight plateau-top roads characteristically lined with attractive wide grass verges and ditches.
- Wooded horizons as a result of visual merging of hedgerow trees and woodlands in the landscape, which integrate settlements into the landscape.
- Presence of tall structures including masts and poles which disturb the rural scene interrupting the sense of openness.
- Sparsely settled landscape mostly comprising larger edge-of-plateau settlements, small nucleated and long linear settlements.
- Presence of historic features within the landscape including isolated church, moats, and farm ponds.
- Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development.
- Disused air fields



The individual character areas within this type are listed below:

- E1: Ashwellthorpe Plateau Farmland
- E2: Great Moulton Plateau Farmland
- E3: Hingham-Mattishall Plateau Farmland

LT E: Plateau Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • A generally open character creates a medium to large scale landscape.	**Medium-Low** • Larger-scale landscapes are considered less sensitive to this form of development.	**Medium-Low** • Larger-scale landscapes are considered less sensitive to this form of development.
Landform • Distinct flat and elevated plateau landform. • Defined by the elevation and primarily delineated by the 50m contour.	**Low** • The simple flat landform is less sensitive to this type of development.	**Low** • The simple flat landform is less sensitive to this type of development.
Settlement pattern and human influence • Dispersed settlement pattern. Common-edge settlement, hamlets and small nucleated villages. Many small halls, often isolated, with moats. No large parklands. • Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development. • Linear settlements occur along roads with some vernacular buildings intermixed with more modern development. • Disused airfields. • Occasional tall structures including wind turbines.	**Medium-High** • A rural settlement pattern with relatively few modern elements is sensitive to development. • Powerlines could detract from historic features including vernacular buildings. • Powerlines would introduce an increased sense of human influence.	**High** • A rural settlement pattern with relatively few modern elements is sensitive to development. • Powerlines could detract from historic features including vernacular buildings. • Powerlines of this scale would introduce a strong sense of human influence.
Perceptual aspects • A peaceful rural character created by the absence of main roads and development. • Quiet rural lanes dissect the landscape. • The A140 cuts north-south through part of E2.	**Medium-High** • The rural qualities of the plateau farmlands would be compromised by overhead transmission lines.	**Medium-High** • The rural qualities of the plateau farmlands would be compromised by overhead transmission lines.
Visual characteristics • Long views of the district from the plateau edges take in a wide panorama of South Norfolk and these are some of the best in the district. • Shorter internalised plateau views are to farm buildings and isolated churches. • From higher areas of plateau and from the plateau edge there are views to adjacent landscapes including to churches in adjoining areas	**Medium-High** • Characteristic views indicate higher susceptibility, particularly in relation to pylons. • Visual connections with adjacent landscapes, including some long views, indicates higher susceptibility.	**Medium-High** • Characteristic views indicate higher susceptibility, particularly in relation to pylons. • Visual connections with adjacent landscapes, including some long views, indicates higher susceptibility.

LT E: Plateau Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Skylines • The flatness of the plateau creates a strong sense of openness with vast skies and dramatic horizons. • Expansive skies are a defining feature with distant views and farm buildings are visible in the open landscape. • 360 degree horizon in places.	**Medium-High** • Views across arable farmland to distant horizons are an important part of the character of the region, which increases sensitivity. • Pylons would be seen against the sky, which also increases sensitivity. • Existing pylons lower local susceptibility in parts of E3 and E2.	**High** • Views across arable farmland to distant horizons are an important part of the character of the region, which increases sensitivity. • Pylons would be seen against the sky, which also increases sensitivity. • Existing pylons lower local susceptibility in parts of E3 and E2.
Intactness • The landscape has experienced ongoing change including enclosure in the C19 and rationalisation in the C20. Some elements of the landscape however can be traced back to the medieval era and there is some sense of historic continuity. Modern elements are relatively few. • Though there have clearly been changes in land management, including the amalgamation of fields, the landscape retains a strong rural character.	**Medium-High** • The landscape is sensitive due to the strong rural and tranquil character across most of the area, the long views to adjacent landscapes, and the representative 'Norfolk' views across arable farmland. Views to landmark features are sensitive to this particular form of development, as are the undeveloped skylines. • Electricity pylons are lower than wind turbines or masts, but extend across great distances. Where 132kV powerlines are present in the landscape this has already caused a localised change in character. The susceptibility to this type of development is therefore judged as Medium-High.	**High** • The landscape is sensitive due to the strong rural and tranquil character across most of the area, the long views to adjacent landscapes, and the representative 'Norfolk' views across arable farmland. Views to landmark features are particularly sensitive to this form of development, as are the undeveloped skylines. • Overhead powerlines exert an overt human influence, and pylons of this size are not relatable to existing landscape features. Where 400kV powerlines are present in the landscape this has already caused a considerable change in character. The susceptibility to this type of development is therefore judged as High.

LT E: Plateau Farmland - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA E1: **Ashwellthorpe Plateau Farmland**	**Medium-High** • The Ashwellthorpe Plateau Farmlands are sensitive due to the peaceful rural character within this area. Panoramic views and undeveloped skylines are sensitive to this form of development. Whilst there are views to Tacolneston Mast this is not comparable with overhead powerlines which introduce multiple new structures to the landscape. • The area has an undisturbed rural character which is sensitive to this form of development.	**High** • The Ashwellthorpe Plateau Farmlands are sensitive due to the peaceful rural character within this area. Panoramic views and undeveloped skylines are sensitive to this form of development. Whilst there are views to Tacolneston Mast this is not comparable with overhead powerlines which introduce multiple new structures to the landscape. • The area has an undisturbed rural character which is sensitive to this form of development.
LCA E2: **Great Moulton Plateau Farmland**	**Medium-High** • The Great Moulton Plateau Farmlands are sensitive due to the rural character within this area. Expansive skies are a defining feature of the area and pylons would be seen as intrusive elements on the skyline. The standardised design of pylons would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Timber-framed houses, moats and commons create a sense of time-depth which is vulnerable to this form of development.	**High** • The Great Moulton Plateau Farmlands are sensitive due to the rural character within this area. Expansive skies are a defining feature of the area and pylons would be seen as intrusive elements on the skyline. The standardised design of pylons would have a negative effect on the sense of place and would also introduce overt human influence to a rural landscape. Timber-framed houses, moats and commons create a sense of time-depth which is vulnerable to this form of development.
LCA E3: **Hingham-Mattishall Plateau Farmland**	**Medium-High** • The Hingham-Mattishall Plateau Farmland is sensitive due to the rural character of this area. Extensive views to and from the plateau increase sensitivity to this form of development. Views to churches are sensitive to this particular form of development. • The existing overhead powerlines have already had a considerable influence on character in the Mattishall part of the area. The susceptibility to 132kV overhead powerlines is therefore assessed as Medium-High.	**High** • The Hingham-Mattishall Plateau Farmland is sensitive due to the rural character of this area. Extensive views to and from the plateau increase sensitivity to this form of development. Views to churches are sensitive to this particular form of development. • The existing overhead powerlines have already had a considerable influence on character in the Mattishall part of the area. The susceptibility to 400kV overhead powerlines is therefore assessed as High.

LT F: Valley Urban Fringe

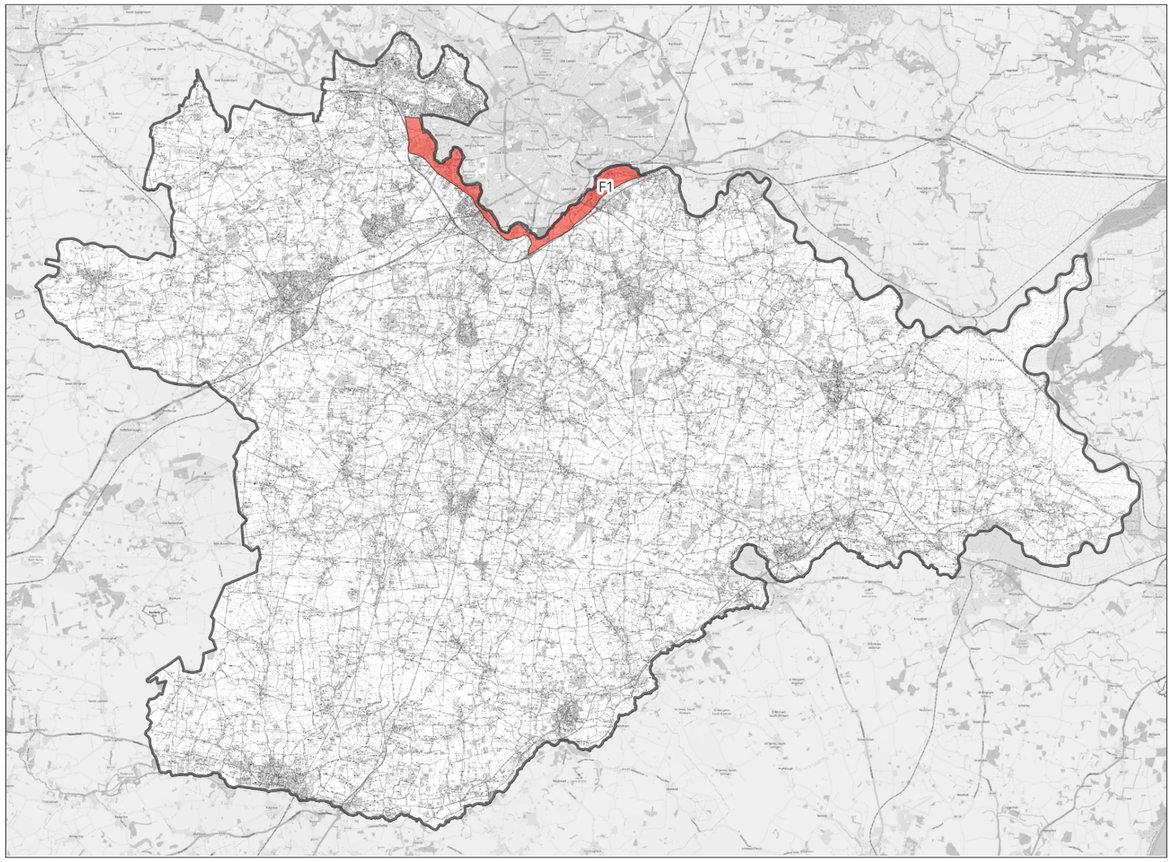
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area within the jurisdiction of Norwich City Council. The crest of the slope at about 30m AOD represents the boundary of this landscape type; as it is at this point that the character changes to a valley landform, focused on the River Yare.

Key characteristics

- Distinctive broad meandering valley form with wide flat flood plain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.
- Glacial gravel deposits, which have been exploited resulting in remnant flooded gravel workings along the valley floor.
- Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland creating a well wooded appearance.
- Inaccessible valley floor with relatively few river crossings.
- Evidence of early human activity, for example the henge at Arminghall and presence of numerous Scheduled Ancient Monuments.
- Few distinctive vernacular buildings mainly due to the relative lack of prewar settlement within the valley.
- Distinct absence of settlement within the valley, apart from discrete areas nestled around river crossings, although influenced by Norwich urban fringe along parts of the upper valley sides.
- Impenetrability resulting in a sense of remoteness and solitude- remarkable given the closeness of a major city.
- Large institutional buildings occasionally visible from the valley.

There is one Landscape Character Area within this type:

- F1: Yare Valley Urban Fringe



LT F: Valley Urban Fringe - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • Distinctive broad meandering valley form with wide flat floodplain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.	**Medium-High** • The relatively small scale of the landscape means that it has a higher sensitivity to this form of development. 26m pylons are likely to be the tallest element within the landscape.	**High** • Pylons of this size would appear out of scale and would overwhelm the valley. The pylons would become the dominant element within the landscape.
Landform • Wide, fairly flat floodplain with enclosing valley sides. • The sides of the valley are fairly steep in places.	**Medium-High** • Complex and often sinuous landform of the river valleys contrasts with the straightness of the overhead power lines. • Shallow valleys likely to be overwhelmed by pylons.	**High** • Complex and often sinuous landform of the river valleys contrasts with the straightness of the overhead power lines. • Shallow valleys likely to be overwhelmed by pylons.
Settlement pattern and human influence • Highly influenced by Norwich urban fringe along parts of the upper valley sides. • A number of large institutional buildings in or adjacent to the valley. • Green buffer and comprehensible development edge to the City of Norwich. • Floodplain has remained undeveloped.	**Medium-Low** • The valley largely functions as a green buffer, but there is some development at Colney, Cringleford and Trowse Newton. • The urban influence in the area reduces its susceptibility to change.	**Medium** • The valley largely functions as a green buffer, but there is some development at Colney, Cringleford and Trowse Newton. • The urban influence in the area reduces its susceptibility to change. • Powerlines of this scale would create a strong sense of human influence.
Perceptual aspects • Noise of traffic on the Norwich Southern Bypass disturbs the tranquillity of the valley. Overall, despite these urban influences, the valley is mostly quiet and secluded.	**Medium-Low** • Existing urban influence indicates lower susceptibility.	**Medium-Low** • Existing urban influence indicates lower susceptibility.
Visual characteristics • Views are variable with open and enclosed views within the valley with large institutional buildings occasionally visible. • Views across the valley towards the City of Norwich. Valley performs an important visual function in creating a setting to the city. • Some enclosure from valley sides and vegetation.	**Medium** • Large parts of F1 lie within the Norwich View Cones which are identified in the Development Management Policies. Pylons would not obstruct views, but would detract from the composition of the views. • Overhead transmission lines would be visually prominent. • Susceptibility is reduced by the presence of existing development.	**Medium** • Large parts of F1 lie within the Norwich View Cones which are identified in the Development Management Policies. Pylons would not obstruct views, but would detract from the composition of the views. • Overhead transmission lines would be visually prominent. • Susceptibility is reduced by the presence of existing development.

LT F: Valley Urban Fringe - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Skylines • The valley crests form a skyline in views from the valley floor. • Mixed woodlands and shelterbelts occur on the valley sides creating a well-wooded skyline. • Pylons are present in part of the valley.	**Medium** • Skylines vary within the area. Many parts of the valley are contained and do not feature prominent skylines. Other parts of the valley feature more open views towards wooded skylines and county hall. • Valley crests are sensitive, especially to this form of development. • The presence of existing pylons (and other forms of development) reduces the susceptibility.	**Medium** • Skylines vary within the area. Many parts of the valley are contained and do not feature prominent skylines. Other parts of the valley feature more open views towards wooded skylines and county hall. • Valley crests are sensitive, especially to this form of development. • The presence of existing pylons (and other forms of development) reduces the susceptibility.
Intactness • The floodplain features former meadows and parkland, but nature conservation and recreation are increasingly important. • The land uses have evolved and there is a weak sense of historical continuity. • The intactness is to some extent disturbed by past mineral workings, which have made a lasting impression on the landscape. • The intactness of the valley is also influenced by the development of railways and later road bridges.	**Medium** • Skylines vary within the area. Many parts of the valley are contained and do not feature prominent skylines. Other parts of the valley feature more open views towards wooded skylines and county hall. • Overhead powerlines would have a large effect on skylines. • Skylines are not a defining feature of the area, so susceptibility is assessed as Medium.	**Medium** • Skylines vary within the area. Many parts of the valley are contained and do not feature prominent skylines. Other parts of the valley feature more open views towards wooded skylines and county hall. • Overhead powerlines would have a large effect on skylines. • Skylines are not a defining feature of the area, so susceptibility is assessed as Medium.

LT F: Valley Urban Fringe - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA F1: **Yare Valley Urban Fringe**	**Medium-Low** • The key susceptibilities relate to the shallow valley landform which would be dominated by structures of this size. • The straight geometry of overhead powerlines is also incompatible with the sinuous valley landform. • The character of the valley is already influenced by overhead powerlines, so the susceptibility is assessed as Medium-Low.	**Medium-Low** • The key susceptibilities relate to the shallow valley landform which would be overwhelmed by structures of this size. • The straight geometry of overhead powerlines is also incompatible with the sinuous valley landform. • The character of the valley is already influenced by overhead powerlines, so the susceptibility is assessed as Medium-Low.

LT G: Fringe Farmland

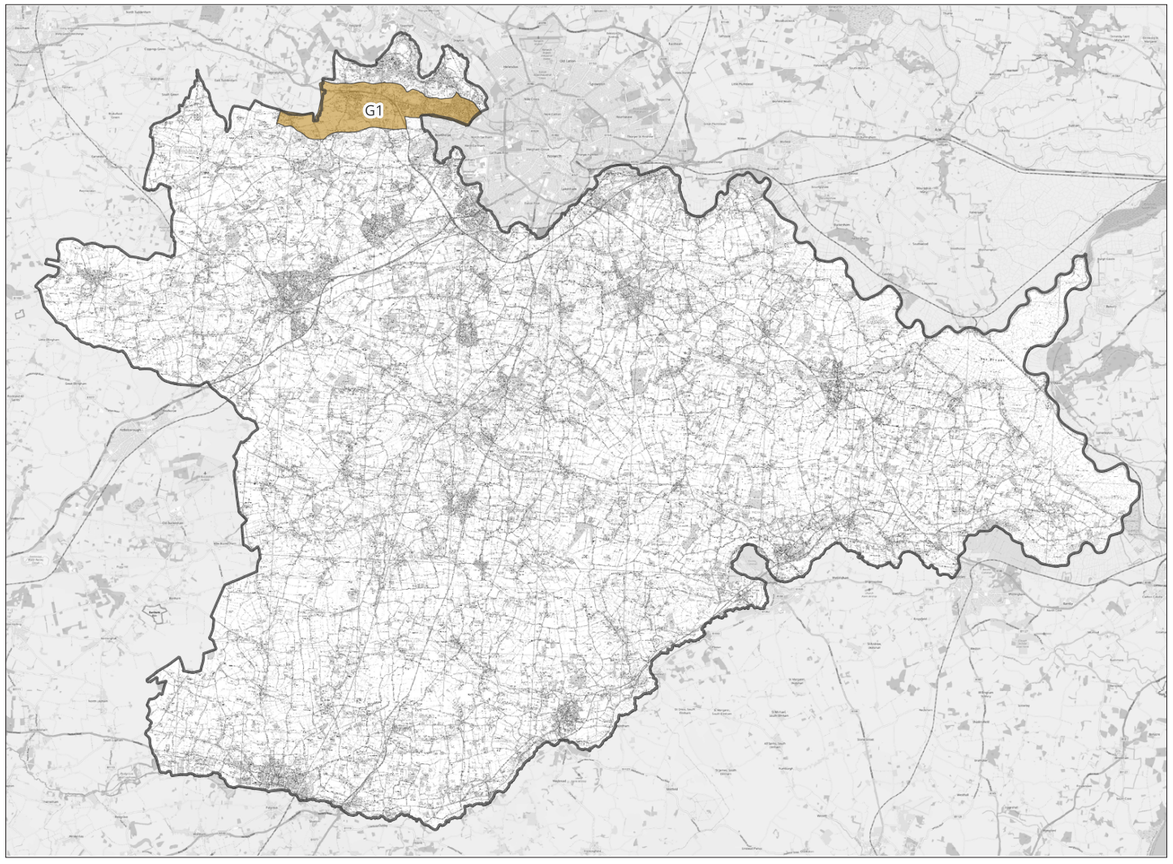
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare Rural River Valley to the south. It is defined as a distinctive landscape as a result of its relatively developed character and eroded farmland context.

Key characteristics

- Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline;
- History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas.
- Use of the area for urban fringe uses including a park and ride scheme (under construction), retail warehouses, a golf course and the Royal Norfolk Showground.
- Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton.
- Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.
- Absence of large wooded areas.
- Norwich Southern Bypass is a major feature of the area.

There is one Landscape Character Area within this type:

- G1: Easton Fringe Farmland



LT G: Fringe Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Scale • The scale of this landscape varies according to the land cover pattern and level of built development.	**Varies** • The more developed and wooded parts of the area create a small-scale landscape. • The more open parts of the area have an intermediate scale with medium susceptibility.	**Varies** • The more developed and wooded parts of the area create a small-scale landscape. • The more open parts of the area have an intermediate scale with medium susceptibility.
Landform • Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline. • Undulating landscape with a distinct ridge top.	**High** • The ridgeline and undulating topography is sensitive. • Pylons would sit awkwardly in relation to the topography, and structures of this size would appear dominant.	**High** • The ridgeline and undulating topography is sensitive. • Pylons would sit awkwardly in relation to the topography and structures of this size would overwhelm the existing topography.
Settlement pattern and human influence • Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton. • Relatively developed character. • Retail warehouses and supermarkets on edge of town.	**Medium-Low** • Significant levels of settlement and existing pylons indicate lower susceptibility. • Pylons would nonetheless introduce additional human influence to the area.	**Medium** • Significant levels of settlement and existing pylons indicate lower susceptibility. • Pylons would nonetheless introduce additional human influence to the area. • Powerlines of this scale would create a strong sense of human influence.
Perceptual aspects • Not a remote or tranquil landscape. Recent construction and land use activities have had significant effect upon the rural character. • The Norwich Southern Bypass introduces a corridor of noise and movement. Other roads of the area retain a strong rural character.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.
Visual characteristics • There are views from the ridge into the adjacent valley landscapes of the Tud and the valley of the rural Yare with its flooded gravel workings. • The ridge is a locally prominent feature of the landscape and is visible from the valleys of the Yare and Tud and the surrounding tributary valley landscape.	**High** • The ridge is a locally prominent feature which is sensitive to change. • Pylons would sit awkwardly in relation to the topography, and structures of this size would appear dominant. • Views to and from the adjacent valley landscapes increase sensitivity.	**High** • The ridge is a locally prominent feature which is sensitive to change. • Pylons would sit awkwardly in relation to the topography, and structures of this size would overwhelm the existing landform. • Views to and from the adjacent valley landscapes increase sensitivity.

LT G: Fringe Farmland - susceptibility to overhead powerlines

Landscape attribute	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
Skylines • Skyline varies, sometimes formed by distant views to adjacent landscapes but often interrupted by development and shelterbelts.	**Low** • More developed parts of the area do not feature important or characteristic skylines and are less susceptible to change. • The ridge however forms an important part of the skyline in views from adjacent landscapes. • G1 already features a 132kV line and the susceptibility is therefore considered to be low.	**Medium** • More developed parts of the area do not feature important or characteristic skylines and are less susceptible to change. • The ridge however forms an important part of the skyline in views from adjacent landscapes. • Pylons of this size would be out of scale with existing landscape features and would be seen against the sky, which increases sensitivity. A 400kV line would also cause visual confusion.
Intactness • This Landscape Type has seen considerable land use change and there is a fragmented pattern of land uses. • Changing demands upon the land mean that the historical landscape pattern is weakly expressed. • Areas of more intact rural landscape do however occur away from urban edge.	**Medium** • The area has a weak sense of historical continuity and is influenced by its proximity to Norwich. • Overhead powerlines would nonetheless introduce a strong sense of human influence. • Vegetation clearance beneath lines would also tend to affect the intactness of individual elements such as hedges and woodlands, and of the landscape as a whole.	**Medium** • The area has a weak sense of historical continuity and is influenced by its proximity to Norwich. • Overhead powerlines would nonetheless introduce a strong sense of human influence. • Vegetation clearance beneath lines would also tend to affect the intactness of individual elements such as hedges and woodlands, and of the landscape as a whole.

LT G: Fringe Farmland - susceptibility to overhead powerlines

Overall susceptibility	132kV lines, utilising pylons within a nominal height of 26m	400kV, utilising pylons with a nominal height of 50m
LCA G1: **Easton Fringe Farmland**	**Medium-Low** • The key susceptibilities relate to the ridge landform which would be dominated by structures of this size. • The ridge forms an important part of the skyline in views from adjacent landscapes and is therefore sensitive. • The character of the Easton Fringe Farmland is influenced by an existing 132kV line, so the susceptibility is assessed as Medium-Low.	**Medium-High** • The key susceptibilities relate to the ridge landform which would be overwhelmed by structures of this size. • The ridge forms an important part of the skyline in views from adjacent landscapes and is therefore sensitive. • Pylons of this size would be out of scale with existing landscape features and would be seen against the sky, which increases sensitivity. A 400kV line would also cause visual confusion with the existing 132kV line.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 3.5
Landscape Susceptibility Analysis
Underground cable routes

November 2025

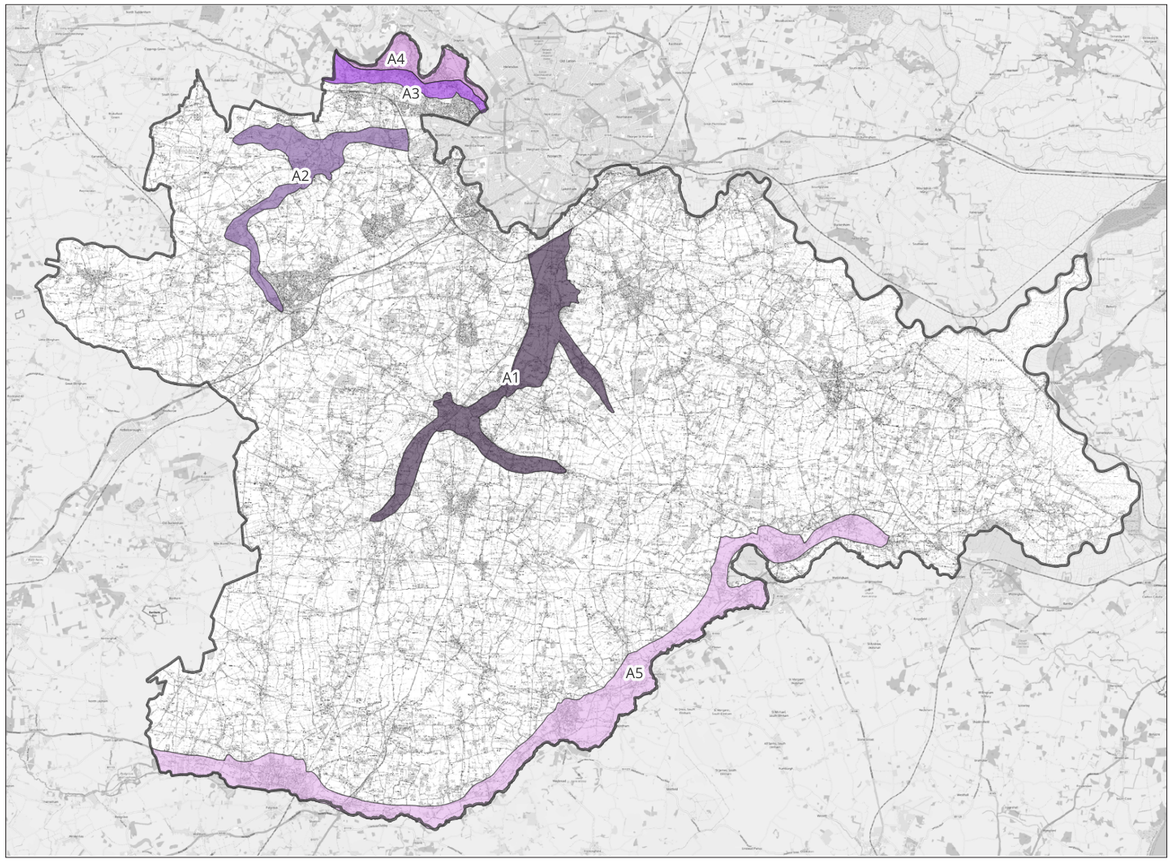
thelandscapepartnership

LT A: Rural River Valleys

The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

Five rural river valleys have been identified within South Norfolk. These are: the broad valley of the River Waveney in the south of the district, the narrower valleys of the Tud and Wensum, west of Norwich, the meandering upper reaches of the River Yare/Tiffey south west of Norwich, and the distinctive Tas Valley to the south of Norwich.

The boundary of this landscape type is defined primarily by topography and corresponds with the upper crest of the valley side, which generally occurs below the 30m AOD contour. Occasionally, the perceived boundary has been affected by cultural features which have transgressed this natural boundary to either extend or reduce the influence of the valley-form character, for example in the valley of the Waveney where the settlements have grown up as an integral part of the valley landscape, although now extend beyond the natural valley line.



Key characteristics

- Distinct valley landform created by glacial and fluvial activity, with wide flat valley floodplains, which create important divisions within the district landscape.
- Semi-enclosed landscape with long views within the valley but restricted views from the valley, creating occasional areas of more intimate character.
- Perceived presence of a river that is often not actually visible within the landscape but which at close-range is seen to be attractive, of significant size and distinct character.
- Willow pollards and lines of poplar flanking ditches and watercourses on the valley floor, plus reeds and marsh in areas.
- Attractive river crossings including fords and old bridges approached by sunken lanes.
- Areas of pastoral floodplain predominantly grazed by cattle, set within the arable landscape that occupies the valley sides.
- Historic quality to areas within the valley landscape due to the presence of visual reminders of the valleys' settled past, particularly the earthworks at Venta Icenorum, watermills, historic river crossings and round-towered churches.
- Settlements predominantly small and nucleated of strong vernacular character with scattered farmsteads on the valley floor or linear settlements at the valley side crest, with a few large towns of 'market town' quality distinct to the Waveney.
- Characteristic vernacular architecture particularly including red brick and Dutch gable ends, windmills, weather-boarded watermills and round towered churches.
- Presence of characteristic ecological assemblages, uncommon or unfound elsewhere in the district, including wetland vegetation, heathland and wet meadows/ pastures.

The individual character areas within this type are listed below:

- A1: Tas Rural River Valley
- A2: Yare/Tiffey Rural River Valley
- A3: Tud Rural River Valley
- A4: Wensum Rural River Valley
- A5: Waveney Rural River Valley

LT A: Rural River Valleys - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • A semi-enclosed landscape with some long views within the valleys but restricted views out. Areas of more intimate character on the valley floor. • Some river valleys less enclosed than others, the Waveney for example is a wide valley which has a more open character.	**Medium-Low** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges.
Landform • Distinct valley landform created by glacial and fluvial activity with distinct floodplain and shallow valley sides.	**Medium** • The valleys of South Norfolk are typically shallow-sided. • Valley sides are considered to be sensitive to the disruption which would be caused by the installation of an underground cable route on account of their complexity and potential visibility. Effects on landform would be temporary, so the susceptibility is assessed as Medium.
Landcover • Distinctive land cover: small-scale field pattern and prevalence of grazed pastures on the valley floor, with mix of arable and pasture on the valley sides, creating a complex landcover pattern. • Characteristic ecological assemblages – reeds and marsh, wet meadows/ pastures, woodland plus areas of heathland. High ecological value recognised in designations (SAC/SSSIs). • Willow pollards and lines of poplar flank ditches and watercourses. • Some areas of active mineral working and open water associated with mineral extraction sites, for example in A3: Tud and A4: Wensum valleys. • The Tas Valley features two historic parks, an iron age hillfort at Tasburgh, and a Roman colony at Venta Icenorum.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development, including underground cable routes. • Landcover is particularly sensitive to underground cable routes due the physical disturbance of the trenches. A cable route could be more disruptive ecologically than overhead lines where there are sensitive habitats.

LT A: Rural River Valleys - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Field pattern **A1- Tas** • Meadows and fens, some surviving unenclosed land e.g. at Shotesham and Flordon. • 19th century enclosure at Tasburgh along with earlier enclosures. **A2 – Yare Tiffey** • Narrow floodplain meadows. Some C19 enclosure of meadows. • Meadows defined by dykes. • Small scale field pattern within floodplain. **A3 – Tud** • Narrow floodplain meadows. • Rationalised early enclosures on valley-side. • Large park at Costessey Park. **A4 – Wensum** • Large area of unenclosed land shown on first edition OS Map. • Small organic and regular enclosures bound by dykes in the vicinity of Costessey. • Large, regular enclosures on valley-side. **A5 – Waveney** • 19th century enclosure awards, with some earlier enclosure. • Fields defined by dykes rather than hedges. • Mixture of organic field patterns and regular field patterns reflecting history of enclosure.	**Medium-High** • Small-scale fields are considered to have higher sensitivity. Enclosure by dikes potentially complicates the installation of an underground cable route. • Important hedgerows (where they are present) would require special construction techniques such as Horizontal Directional Drilling.
Visual characteristics • Views within the valleys vary from long range and open to some more enclosed, confined views. • Views frequently include landmark features. • Views into adjacent landscapes are for the most part restricted by the ridges marking the limits of the valleys. There are some views into the valleys from the surrounding higher land. • Key views from Waveney Valley into The Broads	**Medium** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. • Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. • Although landscape can be reinstated there is still some susceptibility to the disturbance which would be caused during the installation of an underground cable route.

LT A: Rural River Valleys - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA A1: **Tas Rural River Valley**	**Medium-High** • The key characteristics of the Tas Valley are less sensitive to underground cable routes than to other forms of development. There are however some particular sensitivities which relate to ecological habitats and the flow of water, and the interaction of an underground cable route with existing dikes. Considering the sensitive habitats which are present within the valley the overall susceptibility is assessed as Medium-High.
LCA A2: **Yare/Tiffey Rural River Valley**	**Medium-High** • The key characteristics of the Yare/Tiffey Valley are less sensitive to underground cable routes than to other forms of development. There are however some particular sensitivities which relate to ecological habitats and the flow of water, and the interaction of an underground cable route with existing dikes. Considering the sensitive habitats which are present within the valley the overall susceptibility is assessed as Medium-High.
LCA A3: **Tud Rural River Valley**	**Medium-High** • The key characteristics of the Tud Valley are less sensitive to underground cable routes than to other forms of development. There are however some particular sensitivities which relate to ecological habitats such as grazing marsh and fen. Considering the sensitive habitats which are present within the valley the overall susceptibility is assessed as Medium-High.
LCA A4: **Wensum Rural River Valley**	**Medium-High** • The Wensum Valley features a network of sensitive habitats in the valley-floor and the river itself is an important chalk river which is designated as a SSSI. Considering the sensitive habitats which are present susceptibility is assessed as Medium-High.

LT A: Rural River Valleys - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA A5: **Waveney Rural River Valley**	**Medium-High** • A network of sensitive habitats extends along most of the valley, except for the area around Diss. Considering the sensitive habitats which are present susceptibility is assessed as Medium-High.

LT B: Tributary Farmland

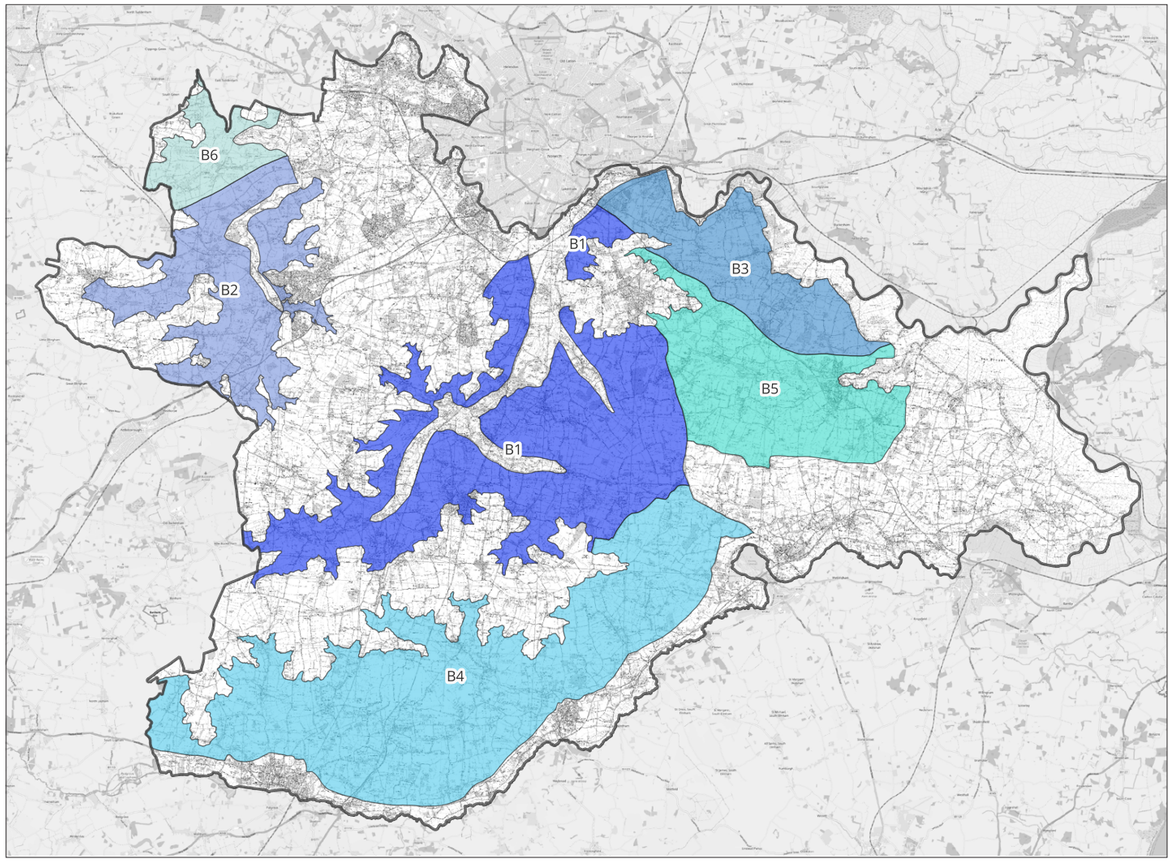
The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole of the district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD.

Key characteristics

- Shelving and gently undulating landform created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.
- Tamed and peaceful farmland with scattered small farm woodlands creating a quiet rural landscape.
- Dispersed but evenly distributed settlement pattern of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.
- An intricate network of narrow, winding rural lanes often bounded by banks or ditches with a sense of impenetrability.
- Tributaries elusive- evident but usually hidden within the landscape by topography or trees.
- Medium to large-scale arable farmland of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.
- Remnant parkland, which sometimes relates to former deer parks, plus areas of common land.
- Mixed architectural character comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.
- High proportion of important ecological assemblages protected as SSSIs including woodland, and wetland habitats.

The individual character areas within this type are listed below:

- B1: Tas Tributary Farmland
- B2: Tiffey Tributary Farmland
- B3: Rockland Tributary Farmland
- B4: Waveney Tributary Farmland
- B5: Chet Tributary Farmland
- B6: Yare Tributary Farmland



LT B: Tributary Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • Woodland blocks impart a semi-wooded, semi-enclosed character to much of the area. • Valley landforms offers opportunity for longer views.	**Medium** • Semi-enclosed character is moderately sensitive to development.
Landform • Varied landform from flat to gently undulating, sloping towards tributary valleys. • Minor stream valleys cut through the glacial till to create a landscape of restrained variety.	**Medium** • The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum.
Landcover • Varied pattern from small scale, intricate networks of fields/hedgerows in tributary valleys and around settlements to large, open fields on higher ground. • An intricate network of narrow, winding lanes often bounded by ditches. • Elusive tributaries, evident but usually hidden within the landscape by topography or trees. • Medium to large-scale arable fields enclosed by sparse hedges with hedgerow trees. Permanent pasture and woodland found within valleys. • Remnant parkland which sometimes relates to former deer parks, plus areas of common land. • High proportion of important assemblages protected as SSSIs including woodland and wetland habitat.	**Medium** • Arable landcover can be reinstated, but there is some susceptibility in terms of disturbance to soils. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.

LT B: Tributary Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Field pattern **B1 - Tas Tributary Farmland** • Early rectilinear field patterns across much of the area. • Planned enclosures of former greens and heaths prior to the C18 creating semi-regular field pattern. • Common arable fields in Forncett St Mary visible on tithe map. • Late enclosure of fens, for example at Hingham • Some unenclosed meadows/fen. • Widespread hedgerow loss means that most fields are now classified as 20th century enclosures. **B2 – Tiffey** • Mix of field patterns. Some irregular, presumably early enclosures. • Late enclosures at Spooner Row and Barnham Broom. • Medieval deer parks at Kimberley and Oxehaghe. • Small area of unenclosed meadow at Coston. • Widespread hedgerow loss means that most fields are now classified as 20th century enclosures. **B3 – Rockland** • Mix of organic field patterns, suggesting early enclosure, and rectilinear field patterns, suggesting late enclosure. • Late enclosures of marshland and heathland in Kirby Bedon and Surlingham. • Sinuous field boundaries in Ashby St Mary suggest enclosure from common field. **B4 – Waveney Tributary Farmland** • Early rectilinear field patterns e.g. at Alburgh and Denton. • Ancient, irregular enclosures across much of the area. • Sinuous enclosures from open fields in Denton. • Considerable hedgerow loss. **B5 – Chet** • Early rectilinear field systems e.g. at Seething. Medieval open fields possibly based on earlier field system.	**Low** • The majority of the fields are now classified as 20th century enclosures and are not considered particularly sensitive. • Field patterns can be reinstated. • Important hedgerows (where they are present) would require special construction techniques such as Horizontal Directional Drilling.

LT B: Tributary Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Visual characteristics • Transitional landscape occupying the mid ground between the plateaux and the main river valleys, providing opportunities for long and framed views. • Within these landscapes views are across arable fields to sloping valley sides and down to small-scale wooded tributary valleys. • Framed and open, long-ranging views across the countryside. • Large agricultural buildings can be visually prominent. • Pylons and poles interrupt the landscape wherever they are present, notably towards the northern part of the district. • Important views to landmarks such as Wymondham Abbey and Wicklewood Windmill that provide a sense of place. • Elements of vernacular interest that include round-towered churches. • Generally undeveloped skylines. • Strong visual influence of the adjoining Broads in character areas B3 and B5. • Visual influence of Norwich in character areas B1 and B3.	**Medium-Low** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • The landscape is less sensitive in visual terms to underground cable routes than to other forms of development as the visual characteristics of the landscape can be largely restored.

LT B: Tributary Farmland - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA B1: **Tas Tributary Farmland**	**Low** • The key characteristics of the Tas Tributary Farmlands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to ecological habitats and temporary disturbance during the installation phase. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA B2: **Tiffey Tributary Farmland**	**Low** • The key characteristics of the Tiffey Tributary Farmlands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to ecological habitats and temporary disturbance during the installation phase. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA B3: **Rockland Tributary Farmland**	**Low** • The key characteristics of the Rockland Tributary Farmlands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to ecological habitats and temporary disturbance during the installation phase. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.

LT B: Tributary Farmland - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA B4: **Waveney Tributary Farmland**	**Low** • The key characteristics of the Waveney Tributary Farmlands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to ecological habitats and temporary disturbance during the installation phase. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA B5: **Chet Tributary Farmland**	**Low** • The key characteristics of the Chet Tributary Farmlands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to ecological habitats and temporary disturbance during the installation phase. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA B6: **Yare Tributary Farmland**	**Medium-Low** • The key characteristics of the Yare Tributary Farmlands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to ecological habitats such as lowland fen, and to temporary disturbance during the installation phase. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Medium-Low.

LT C: Tributary Farmland with Parkland

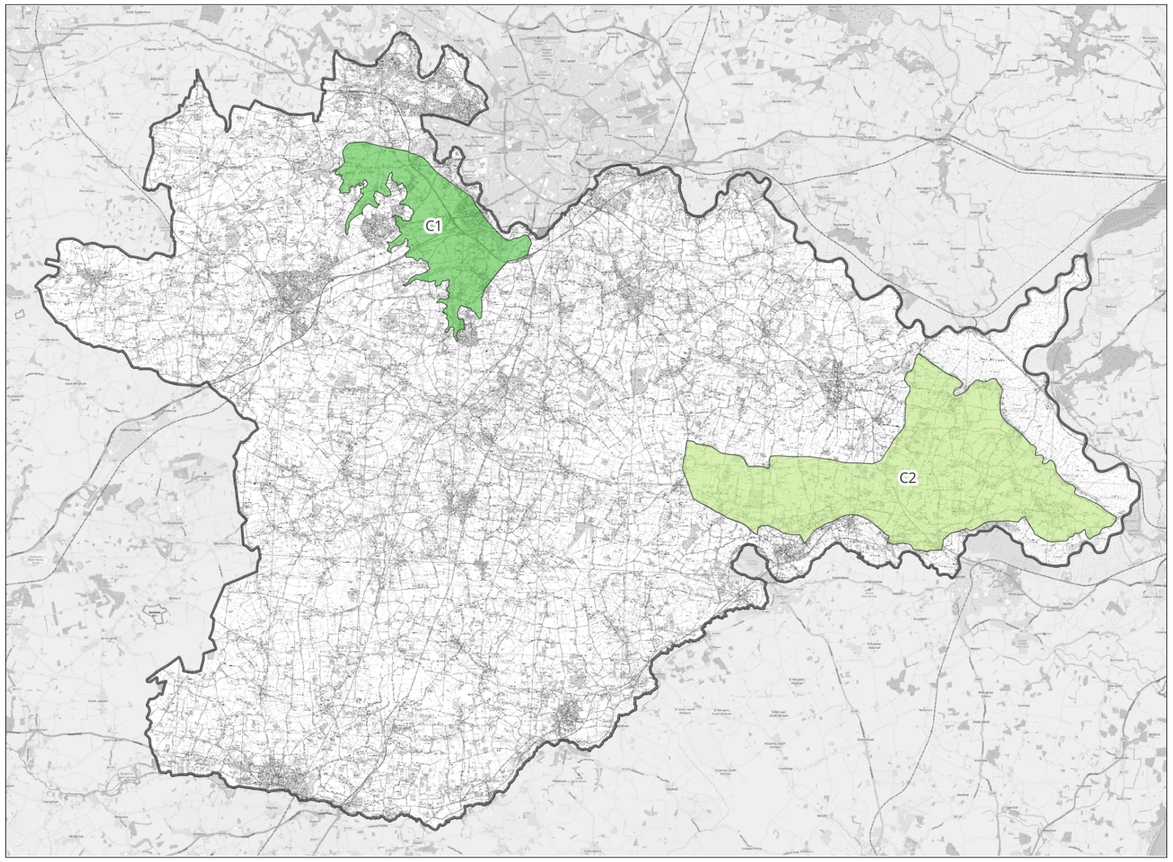
The Tributary Farmland with Parkland Landscape Type occupies two discrete areas of landscape, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very distinctive character throughout much of the area.

Key characteristics

- Gently undulating landform created by the presence of small tributary stream valleys which cut through the glacial till landscape providing a sense of restrained variety
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes, providing varied opportunities for long and framed views
- Presence of large parkland estates particularly associated directly with the tributary valleys. Estate railings, prominent gatehouses, boundary fences and tree-lined avenues with areas of pastoral farmland and horse grazing reveal the presence of the wooded parkland in the wider arable landscape.
- Context of tamed and peaceful arable farmland with scattered small farm woodlands, including ancient woodland, and medium to large-scale fields of sugarbeet and cereal surrounded by sparse hedges and hedgerow trees.
- Small fields of more unusual crops such as sunflowers and asparagus bounded by banks of coppiced willow.
- Dispersed but evenly distributed settlement pattern of small farmsteads and small, nucleated villages.
- An intricate network of small rural roads often bounded by banks or ditches with a sense of impenetrability.
- Tributaries visually elusive and often physically inaccessible- rarely evident because they are hidden within the landscape by topography or trees, particularly where they are associated with the parkland which prevents public access to them.
- Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped and Dutch gable ends and brick and flint.
- Isolated flint round towered churches particularly evident.
- Characteristic large detached halls and manor houses, usually constructed of brick and of high architectural quality, associated with the parkland estates. These are frequently screened by woodland, except at close range.

The individual character areas within this type are listed below:

- C1: Yare Tributary Farmland with Parkland
- C2: Thurlton Tributary Farmland with Parkland



LT C: Tributary Farmland with Parkland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • Open arable landscape is interrupted by areas of woodland. • Areas of woodland associated with estates provide greater enclosure.	**Medium** • Semi-enclosed character is moderately sensitive to development. Although cables would be buried there would be visible effects during the installation phase.
Landform • Gently undulating landform created by the presence of small tributary stream valleys which cut through the landscape providing a sense of restrained variety.	**Medium** • The area consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. Although cables would be buried there would be visible effects during the installation phase.
Landcover • Presence of large parkland estates particularly associated with the tributary valleys. Estate railings, prominent gatehouses, parkland belts, tree-lined avenues and areas of pasture reveal the presence of parkland within the wider arable landscape. • Peaceful arable farmland with small ancient woodlands and scattered coverts with medium to large-scale fields of wheat, barley, oilseed rape and sugarbeet surrounded by sparse hedges and hedgerow trees. • An intricate network of small rural roads. • Becks.	**Varying from Medium to High** • Arable landcover can be reinstated, but there is some susceptibility in terms of disturbance to soils. • Parkland landscapes have a high susceptibility to underground cable routes, especially where there is unimproved grassland.
Field pattern **C1 – Yare** • Irregular enclosures. • Late enclosure e.g. at Little Melton. • Parks. • Unenclosed land at Swardeston Common. **C2 - Thurlton** • Ancient irregular enclosures. • Considerable field amalgamation.	**Low** • The majority of the fields are now classified as 20th century enclosures and are not considered particularly sensitive. • Field patterns can be reinstated. • Important hedgerows (where they are present) would require special construction techniques such as Horizontal Directional Drilling.

LT C: Tributary Farmland with Parkland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Visual characteristics • Views to wide open horizons and long views across denuded hedgerow boundaries and arable farmland from higher areas. • Prominent views to historic features such as isolated and round-towered churches. • Views framed and broken by woodland blocks and estate parkland with large manor buildings. • Intermittent, long views into The Broads from C2. • Views to Norwich in particular from the southern bypass which bisects C1. • Characteristic large halls though frequently screened by woodland. • Isolated round towered flint churches particularly evident. • Mixed architectural character comprising modern development and vernacular architecture.	**Medium-Low** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • The landscape is less sensitive in visual terms to underground cable routes than to other forms of development as the visual characteristics of the landscape can be largely restored.

LT C: Tributary Farmland with Parkland - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA C1: **Yare Tributary Farmland with Parkland**	**Medium-Low** • The key characteristics of the Yare Tributary Farmland with Parklands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to temporary visual disturbance, lowland fens, a Registered Park and Garden at Intwood Hall and common land at Swardeston Common.
LCA C2: **Thurlton Tributary Farmland with Parkland**	**Medium** • The key characteristics of the Thurlton Tributary Farmland with Parklands are less sensitive to underground cable routes than to other forms of development. There are however some sensitivities which relate to historic parklands, ancient woodlands, and temporary visual disturbance. The presence of historic parklands and ancient woodlands increases the sensitivity of this landscape character area, and would necessitate careful design.

LT D: Settled Plateau Farmland

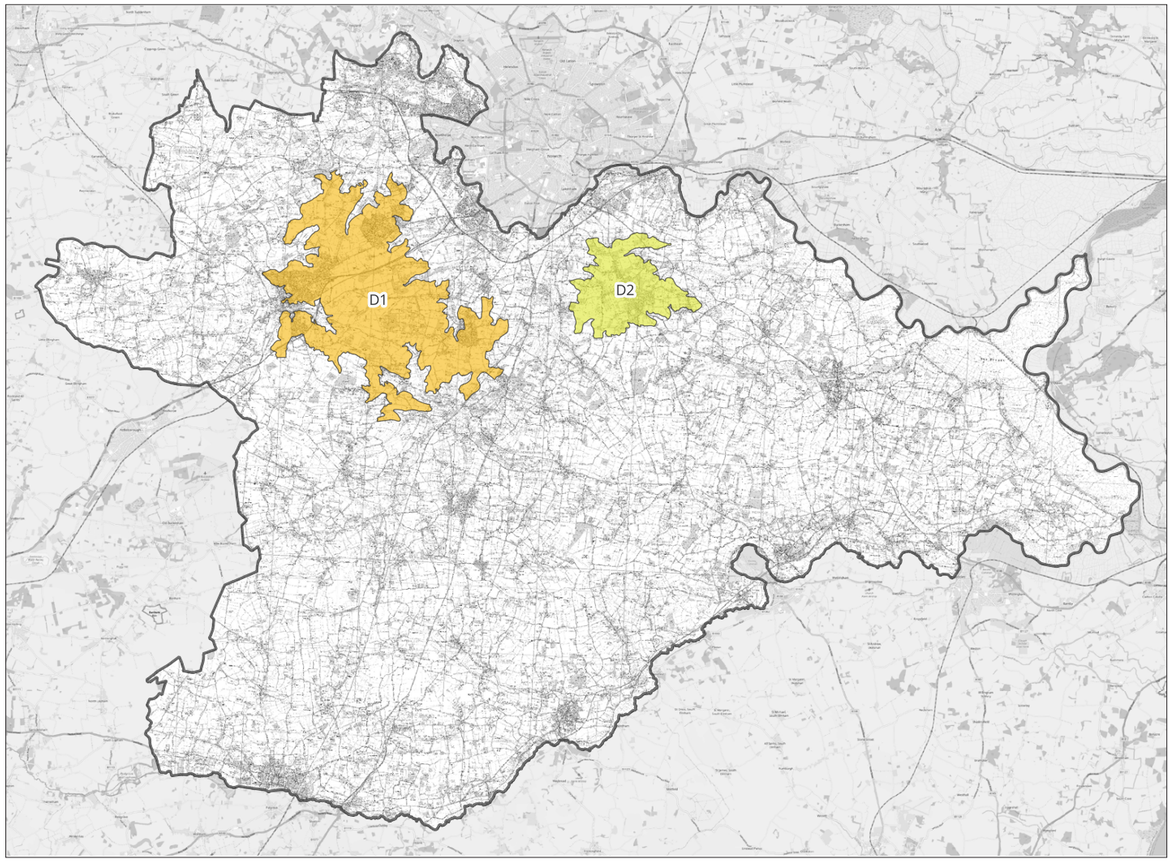
There are two areas of the Settled Plateau Farmland Landscape Type, one to the east and one to the west of the Tas Valley around the settlements of Wymondham and Poringland respectively. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The boundaries of these areas are largely represented by the 40 and 50m AOD contours. However, small and fragmented areas above the 40m contour have not been classified as Settled Plateau Farmland.

Key characteristics

- Distinct flat to gently rising elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture principally characteristic swathes of cereal, oilseed rape and sugarbeet.
- Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements.
- Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. Elements of plateau interior not visible except from other plateau areas or where tall intrusive elements are present.
- Mature remnant oak hedgerow trees are features in the agricultural landscape however hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.
- Presence of large communications masts which interrupt of the sense of openness yet provide distinct landmarks.
- Settled landscape mostly comprising large edge-of-plateau towns and large villages with other smaller nucleated settlements dispersed across the plateau.
- Some evidence of historical features within the landscape including isolated churches (some of which are round-towered), moats, historic parkland and some farm ponds.
- Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development.

The individual character areas within this type are listed below:

- D1: Wymondham Settled Plateau Farmland
- D2: Poringland Settled Plateau Farmland



LT D: Settled Plateau Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • Generally open landscape. Poor hedgerows accentuate the openness of the landscape. • Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements. • Wooded character in parts provides enclosure, particularly around settlements.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development, including underground cable routes.
Landform • Distinct flat to gently rolling, elevated landform as a result of the simple underlying geology. • The area centred on Poringland has the greatest variation, rising up to a gentle 'dome' at 75m AOD which is one of the most elevated areas in the district. • The boundaries of these areas are largely represented by the 40 and 50m AOD contours – the plateau edges are highly visible from adjacent landscapes.	**Medium-Low** • The simple flat landform is less sensitive to development. • The plateau edges however are more sensitive to development, including underground cable routes.
Landcover • Large arable fields characterised by swathes of cereals, oilseed rape and sugarbeet. • Some evidence of historic landscape features including moats, historic parkland and farm ponds. • Woodland blocks tend to be associated with halls/remnant parkland	**Medium** • Arable landcover can be reinstated, but there is some susceptibility in terms of disturbance to soils. • Other elements showing greater time-depth increase susceptibility. • It is assumed that effects on sensitive landcovers such as priority habitats could be avoided through careful design.
Field pattern **D1 - Wymondham** • Early irregular enclosures at Bracon Ash and Mulbarton. • Irregular field pattern in Ketteringham. • Late enclosure of greens e.g. High Green, Melton and High Green, Wreningham. • Park at Ketteringham. • Field pattern obliterated by airfield at Hethel. **D2 - Poringland** • Late enclosure of former heath (shared between settlements) • Former park at Bixley Hall	**Low** • Widespread hedgerow loss has reduced the susceptibility of the field pattern. • Field patterns can be reinstated. • Important hedgerows (where they are present) would require special construction techniques such as Horizontal Directional Drilling.

LT D: Settled Plateau Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Visual characteristics • Strong open horizons – the archetypal 'Norfolk' Landscape. • Illusions of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape. • Views to large communication masts, settlement on the plateau edge and areas of parkland and woodland blocks. • Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. • D2 plateau is very prominent in views from the surrounding landscape. • Mast at Poringland has high visibility but also serves as a landmark. • A number of large-scale farm buildings including grain towers and silos that punctuated the horizon (particularly near Silfield).	**Medium-Low** • The landscape is less sensitive in visual terms to underground cable routes than to other forms of development as the visual properties of the landscape can be largely restored. • Plateau edges are more sensitive, though effects would be temporary.

LT D: Settled Plateau Farmland - susceptibility to underground cable routes

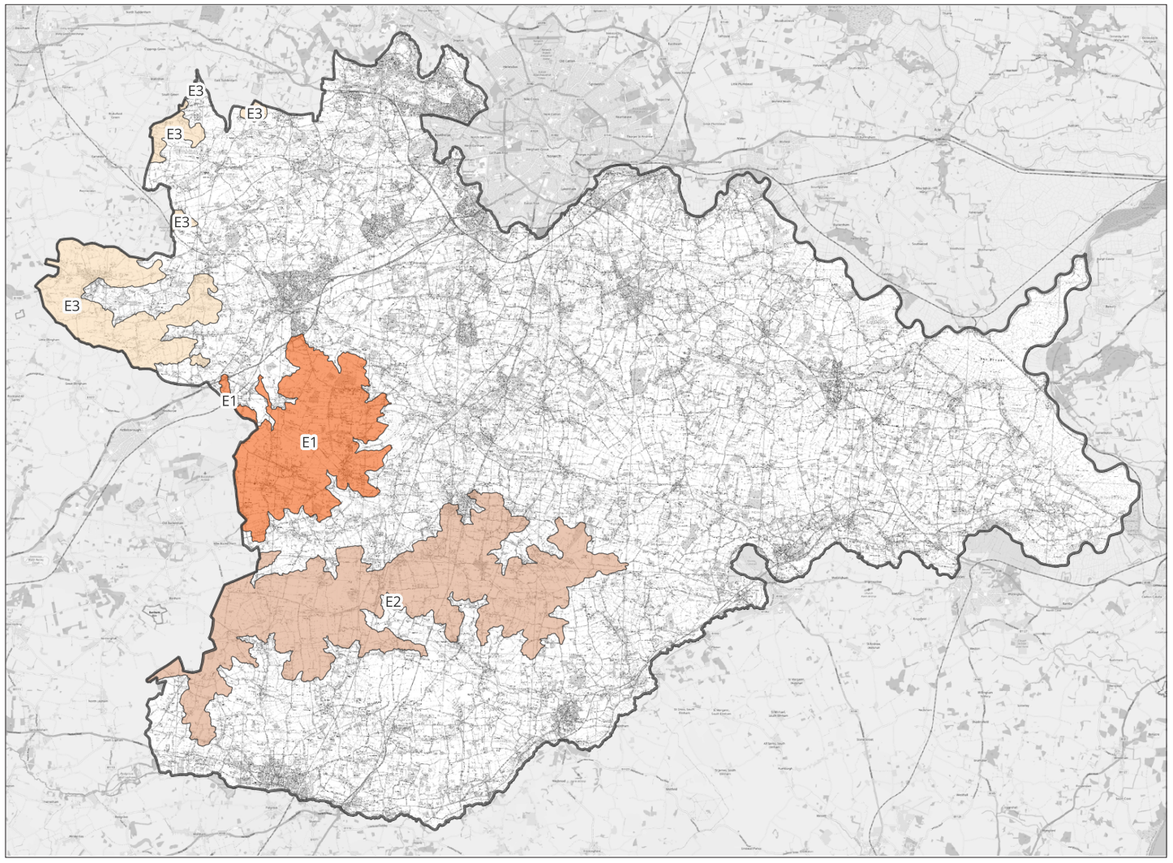
Overall susceptibility	Underground cable routes
LCA D1: **Wymondham Settled Plateau Farmland**	**Low** • The key characteristics of the Wymondham Settled Plateau Farmlands are less sensitive to underground cable routes than to other forms of development. The openness of the landscape would increase visibility during the installation phase, however this would be a temporary effect. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA D2: **Poringland Settled Plateau Farmland**	**Low** • The key characteristics of the Poringland Settled Plateau Farmlands are less sensitive to underground cable routes than to other forms of development. The openness of the landscape would increase visibility during the installation phase, however this would be a temporary effect. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.

LT E: Plateau Farmland

The Plateau Farmland Landscape Type occurs in the western part of the district in three principal areas, all of which continue beyond the South Norfolk boundary into the adjoining Breckland District. The Plateau Farmlands are defined by their elevation and all are primarily delineated by the 50m contour. However, it should be noted that not all areas above the 50m contour line have been classified as Plateau Farmland due to differing land use patterns.

Key characteristics

- Distinct flat and elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture with characteristic swathes of cereal, oilseed rape and sugarbeet monoculture.
- Sense of openness and exposure due to the elevation and scarcity of enclosing elements.
- Long views of the district from the plateau edges and shorter internalised plateau views. Inner plateau largely invisible from other areas.
- Mature remnant oak hedgerow trees are features in the agricultural landscape. However, hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Straight plateau-top roads characteristically lined with attractive wide grass verges and ditches.
- Wooded horizons as a result of visual merging of hedgerow trees and woodlands in the landscape, which integrate settlements into the landscape.
- Presence of tall structures including masts and poles which disturb the rural scene interrupting the sense of openness.
- Sparsely settled landscape mostly comprising larger edge-of-plateau settlements, small nucleated and long linear settlements.
- Presence of historic features within the landscape including isolated church, moats, and farm ponds.
- Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development.
- Disused air fields



The individual character areas within this type are listed below:

- E1: Ashwellthorpe Plateau Farmland
- E2: Great Moulton Plateau Farmland
- E3: Hingham-Mattishall Plateau Farmland

LT E: Plateau Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • Sense of openness and exposure due to the elevation and scarcity of enclosing elements. • The flatness of the plateau creates a strong sense of openness with large skies and distant horizons.	**Medium-Low** • Poor hedges provide weak enclosure which increases the susceptibility to development. • The visual effects of cable routes are temporary, so susceptibility is lower than for other forms of development.
Landform • Distinct flat and elevated plateau landform. • Defined by the elevation and primarily delineated by the 50m contour.	**Medium-Low** • The simple flat landform is less sensitive to development. • The plateau edges however are more sensitive to development, including underground cable routes.
Landcover • Large fields of arable monoculture with characteristic swathes of wheat, barley, oilseed rape and sugar beet. • Mature hedgerow oaks are features in the agricultural landscape. However hedgerows have been severely degraded or lost, leading to a much simplified landscape. • Generally an early enclosed landscape, but with significant areas of common/ heath, many of which were enclosed in the C19. Some remaining commons. • Mixed field patterns relating to the history of enclosure.	**Medium-Low** • Arable landcover can be reinstated, but there is some susceptibility in terms of disturbance to soils. • Other elements showing greater time-depth increase susceptibility. • It is assumed that effects on sensitive landcovers e.g. remaining commons could be avoided through careful design.

LT E: Plateau Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Field pattern **E1 – Ashwellthorpe Plateau Farmland** • Ancient rectilinear enclosures in Bunwell • Ancient irregular enclosures at Fundenhall • Late enclosure of large commons (shared between settlements). • Fields on poor drained plateau bound by ditches. **E2 – Great Moulton** • Ancient rectilinear field patterns in Burston, Tibenham, Great Moulton and Hardwick. • Irregular field patterns, presumably early enclosures. • Large heath at western edge of area enclosed in C18. • Some remaining unenclosed land e.g. Wacton Common. • Field pattern eroded by airfields and hedgerow loss. **E3 – Hingham - Mattishall** • Later enclosure of commons and warren signified by rectilinear field pattern e.g at Deopham Green. • Irregular field patterns at Hingham an Wicklewood. • Late enclosure of Welborne Common (C18)	**Low** • Widespread hedgerow loss has reduced the susceptibility of the field pattern. • Field patterns can be reinstated. • Important hedgerows (where they are present) would require special construction techniques such as Horizontal Directional Drilling.
Visual characteristics • Long views of the district from the plateau edges take in a wide panorama of South Norfolk and these are some of the best in the district. • Shorter internalised plateau views are to farm buildings and isolated churches. • From higher areas of plateau and from the plateau edge there are views to adjacent landscapes including to churches in adjoining areas	**Medium-Low** • The landscape is less sensitive in visual terms to underground cable routes than to other forms of development as the visual characteristics of the landscape can be largely restored. • Plateau edges are more sensitive, though it is acknowledged that effects would be temporary.

LT E: Plateau Farmland - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA E1: **Ashwellthorpe Plateau Farmland**	**Low** • The key characteristics of the Ashwellthorpe Plateau Farmlands are less sensitive to underground cable routes than to other forms of development. The openness of the landscape would increase visibility during the installation phase, however this would be a temporary effect. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA E2: **Great Moulton Plateau Farmland**	**Low** • The key characteristics of the Great Moulton Plateau Farmlands are less sensitive to underground cable routes than to other forms of development. The openness of the landscape would increase visibility during the installation phase, however this would be a temporary effect. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.
LCA E3: **Hingham-Mattishall Plateau Farmland**	**Low** • The key characteristics of the Hingham-Mattishall Plateau Farmlands are less sensitive to underground cable routes than to other forms of development. The openness of the landscape would increase visibility during the installation phase, however this would be a temporary effect. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.

LT F: Valley Urban Fringe

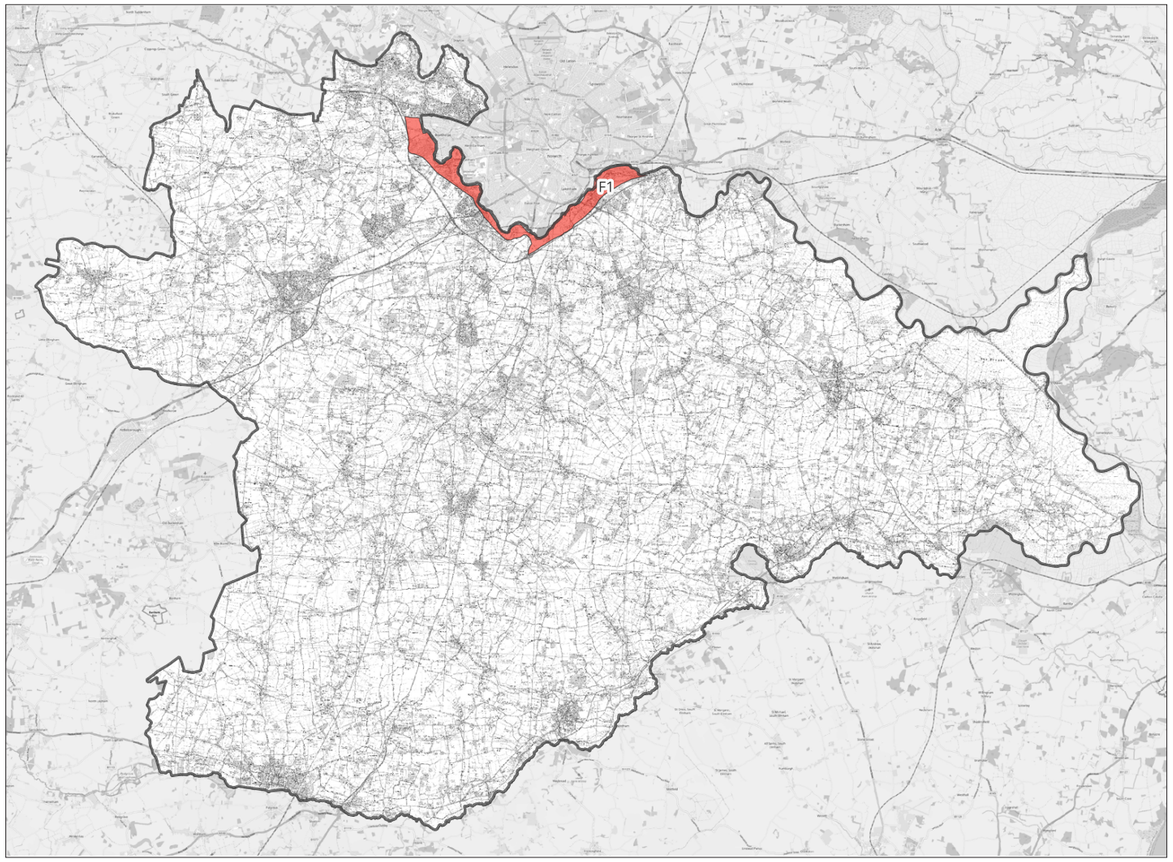
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area within the jurisdiction of Norwich City Council. The crest of the slope at about 30m AOD represents the boundary of this landscape type; as it is at this point that the character changes to a valley landform, focused on the River Yare.

Key characteristics

- Distinctive broad meandering valley form with wide flat flood plain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.
- Glacial gravel deposits, which have been exploited resulting in remnant flooded gravel workings along the valley floor.
- Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland creating a well wooded appearance.
- Inaccessible valley floor with relatively few river crossings.
- Evidence of early human activity, for example the henge at Arminghall and presence of numerous Scheduled Ancient Monuments.
- Few distinctive vernacular buildings mainly due to the relative lack of prewar settlement within the valley.
- Distinct absence of settlement within the valley, apart from discrete areas nestled around river crossings, although influenced by Norwich urban fringe along parts of the upper valley sides.
- Impenetrability resulting in a sense of remoteness and solitude- remarkable given the closeness of a major city.
- Large institutional buildings occasionally visible from the valley.

There is one Landscape Character Area within this type:

- F1: Yare Valley Urban Fringe



LT F: Valley Urban Fringe - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • A sense of containment. • Wide, fairly flat floodplain with enclosing valley sides. • Trees and woodland also contribute to enclosure in places.	**Medium** • Semi-enclosed landscape with medium susceptibility.
Landform • Wide, fairly flat floodplain with enclosing valley sides. • The sides of the valley are fairly steep in places.	**Medium** • Valley sides are considered to be sensitive to the disruption which would be caused by the installation of an underground cable route on account of their complexity and potential visibility. Effects on landform would be temporary, so the susceptibility is assessed as Medium.
Landcover • Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland. Mixed woodlands and shelterbelts occur on the valley sides creating a well-wooded appearance. • Glacial gravel deposits, which have been and continue to be exploited resulting in remnant flooded gravel workings along the valley floor. • Natural character. Nature reserves such as Whitlingham Marsh. The river itself is a chalk river. • Presence of recreational landscapes including the country park at Whitlingham and playing fields at UEA. • Inaccessible valley floor with relatively few river crossings.	**Medium-High** • The valley features an assemblage of meadows, open water, marsh and riparian woodland. A diversity of natural landcover elements increases susceptibility to development, including underground cable routes. • Landcover is particularly sensitive to underground cable routes due to the physical disturbance of the trenches. A cable route could be more disruptive ecologically than overhead lines where there are sensitive habitats.

LT F: Valley Urban Fringe - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
	Medium-High • Small-scale fields are considered to have higher sensitivity. Enclosure by dikes potentially complicates the installation of an underground cable route. • Important hedgerows (where they are present) would require special construction techniques such as Horizontal Directional Drilling.
Visual characteristics • Views are variable with open and enclosed views within the valley with large institutional buildings occasionally visible. • Views across the valley towards the City of Norwich. Valley performs an important visual function in creating a setting to the city. • Some enclosure from valley sides and vegetation.	**Medium-Low** • Although landscape can be reinstated there is still some susceptibility to the disturbance which would be caused during the installation of an underground cable route.

LT F: Valley Urban Fringe - susceptibility to underground cable routes

Overall susceptibility	Underground cable routes
LCA F1: **Yare Valley Urban Fringe**	**Medium-High** • The existing human influence tends to suggest lower susceptibility, however there are likely to be important riparian habitats which are sensitive to this form of development. • Trees within the cable route are likely to be lost and this potentially leaves a long-term effect on the landscape. • A linked series of priority habitats extends along the valley and the susceptibility to this form of development is therefore assessed as Medium-High.

LT G: Fringe Farmland

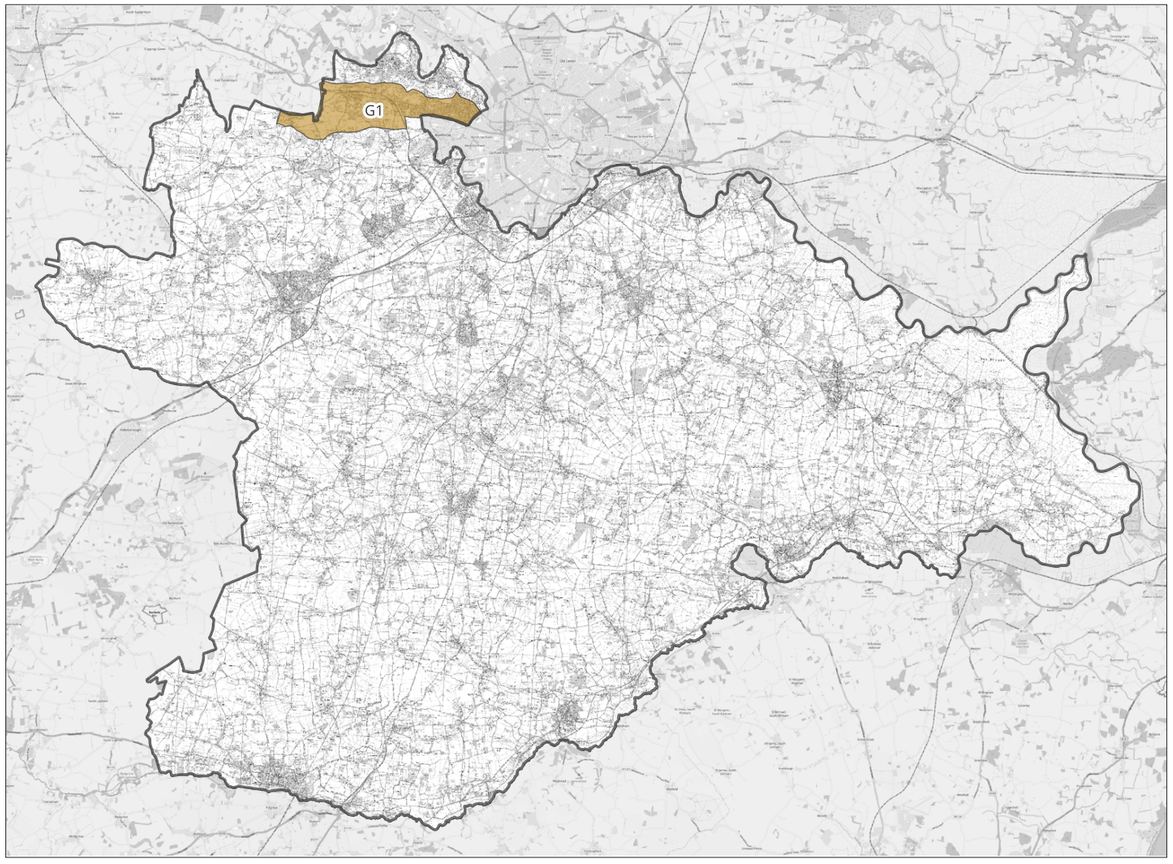
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare Rural River Valley to the south. It is defined as a distinctive landscape as a result of its relatively developed character and eroded farmland context.

Key characteristics

- Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline;
- History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas.
- Use of the area for urban fringe uses including a park and ride scheme (under construction), retail warehouses, a golf course and the Royal Norfolk Showground.
- Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton.
- Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.
- Absence of large wooded areas.
- Norwich Southern Bypass is a major feature of the area.

There is one Landscape Character Area within this type:

- G1: Easton Fringe Farmland



LT G: Fringe Farmland - susceptibility to underground cable routes

Landscape attribute	Underground cable routes
Sense of enclosure • This landscape can feel exposed in places as a consequence of the elevated ridge topography and relatively low–level of woodland.	**Medium** • The degree of openness and enclosure varies. • A cable route could cause considerable temporary disturbance on the exposed ridge.
Landform • Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline. • Undulating landscape with a distinct ridge top.	**Medium** • The ridge is considered to be sensitive to the disruption which would be caused by the installation of an underground cable route. • Effects on landform would be temporary, so the susceptibility is assessed as Medium.
Landcover • Defined predominantly by farmland with urban and urban fringe development. A degraded farmland context. • History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas. • Urban fringe uses including a park and ride scheme, retail warehouses, a golf course and the Royal Norfolk Showground. • Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.	**Varies** • More developed areas including the urban fringe have a lower sensitivity. • The more rural parts of the area have moderate sensitivity.

LT G: Fringe Farmland - susceptibility to Underground cable routes

Landscape attribute	Underground cable routes
Field pattern • Field pattern is obscured by land use change across part of the area. • More rural parts of the area show a mix of regular and irregular field patterns which relates to the history of enclosure.	**Medium** • Mix of irregular and regular enclosures. Medium to small-scale fields.
Visual characteristics • There are views from the ridge into the adjacent valley landscapes of the Tud and the valley of the rural Yare with its flooded gravel workings. • The ridge is a locally prominent feature of the landscape and is visible from the valleys of the Yare and Tud and the surrounding tributary valley landscape.	**Medium-Low** • Although the landscape can be reinstated there is some sensitivity to the disturbance which would be caused during installation.

LT G: Fringe Farmland - susceptibility to Underground cable routes

Overall susceptibility	Underground cable routes
LCA G1: **Easton Fringe Farmland**	**Low** • The key characteristics of the Easton Fringe Farmland are less sensitive to underground cable routes than to other forms of development. The ridge topography would increase visibility during the installation phase, however this would be a temporary effect. It is assumed that effects on important hedgerows or habitats could be avoided through careful design. Susceptibility is therefore assessed as Low.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 3.6
Landscape Susceptibility Analysis
Substations

November 2025

thelandscapepartnership

LT A: Rural River Valleys

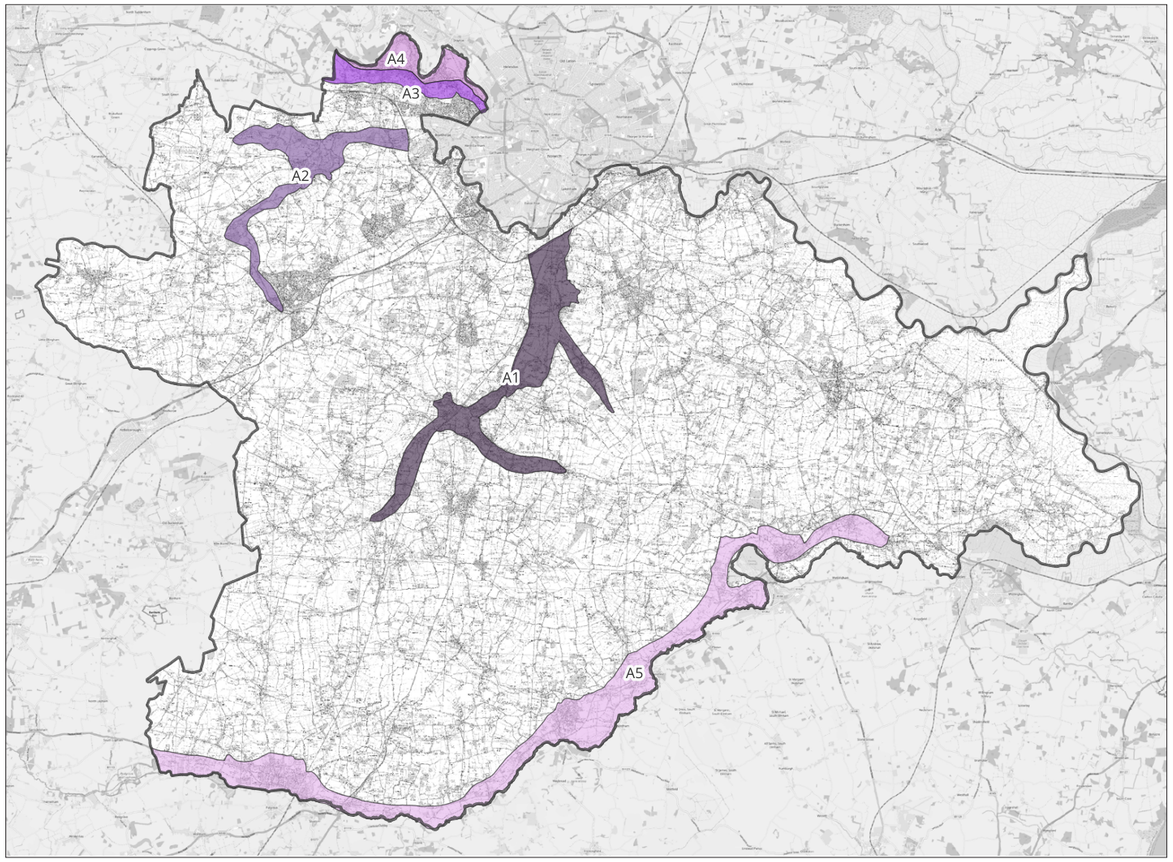
The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

Five rural river valleys have been identified within South Norfolk. These are: the broad valley of the River Waveney in the south of the district, the narrower valleys of the Tud and Wensum, west of Norwich, the meandering upper reaches of the River Yare/Tiffey south west of Norwich, and the distinctive Tas Valley to the south of Norwich.

The boundary of this landscape type is defined primarily by topography and corresponds with the upper crest of the valley side, which generally occurs below the 30m AOD contour. Occasionally, the perceived boundary has been affected by cultural features which have transgressed this natural boundary to either extend or reduce the influence of the valley-form character, for example in the valley of the Waveney where the settlements have grown up as an integral part of the valley landscape, although now extend beyond the natural valley line.

Key characteristics

- Distinct valley landform created by glacial and fluvial activity, with wide flat valley floodplains, which create important divisions within the district landscape.
- Semi-enclosed landscape with long views within the valley but restricted views from the valley, creating occasional areas of more intimate character.
- Perceived presence of a river that is often not actually visible within the landscape but which at close-range is seen to be attractive, of significant size and distinct character.
- Willow pollards and lines of poplar flanking ditches and watercourses on the valley floor, plus reeds and marsh in areas.
- Attractive river crossings including fords and old bridges approached by sunken lanes.
- Areas of pastoral floodplain predominantly grazed by cattle, set within the arable landscape that occupies the valley sides.
- Historic quality to areas within the valley landscape due to the presence of visual reminders of the valleys' settled past, particularly the earthworks at Venta Icenorum, watermills, historic river crossings and round-towered churches.
- Settlements predominantly small and nucleated of strong vernacular character with scattered farmsteads on the valley floor or linear settlements at the valley side crest, with a few large towns of 'market town' quality distinct to the Waveney.
- Characteristic vernacular architecture particularly including red brick and Dutch gable ends, windmills, weather-boarded watermills and round towered churches.
- Presence of characteristic ecological assemblages, uncommon or unfound elsewhere in the district, including wetland vegetation, heathland and wet meadows/ pastures.



The individual character areas within this type are listed below:

- A1: Tas Rural River Valley
- A2: Yare/Tiffey Rural River Valley
- A3: Tud Rural River Valley
- A4: Wensum Rural River Valley
- A5: Waveney Rural River Valley

LT A: Rural River Valleys - susceptibility to Substations

Landscape attribute	Substation
Sense of enclosure • A semi-enclosed landscape with some long views within the valleys but restricted views out. Areas of more intimate character on the valley floor. • Some river valleys less enclosed than others, the Waveney for example is a wide valley which has a more open character.	**Medium-Low** • Trees are commonly found on the edge of the floodplain, and there are further trees within the floodplains themselves. Meadows however can be more open as they are enclosed traditionally by ditches rather than hedges. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.
Landform • Distinct valley landform created by glacial and fluvial activity with distinct floodplain and shallow valley sides.	**High** • The valleys of South Norfolk are typically shallow-sided. • Valley sides have high susceptibility to a substation, which would typically require a flat surface. Development on a valley-side would also be difficult to screen. • The valley floor is typically undeveloped and would therefore be sensitive to development, which would be out of character.
Landcover • Distinctive land cover: small-scale field pattern and prevalence of grazed pastures on the valley floor, with mix of arable and pasture on the valley sides, creating a complex landcover pattern. • Characteristic ecological assemblages – reeds and marsh, wet meadows/ pastures, woodland plus areas of heathland. High ecological value recognised in designations (SAC/SSSIs). • Willow pollards and lines of poplar flank ditches and watercourses. • Some areas of active mineral working and open water associated with mineral extraction sites, for example in A3: Tud and A4: Wensum valleys. • The Tas Valley features two historic parks, an iron age hillfort at Tasburgh, and a Roman colony at Venta Icenorum.	**Medium-High** • River valleys have greater habitat diversity than the broader arable landscapes that typically surround them, including larger amounts of pasture. Woodlands can be found within the floodplain and on the valleysides. A diversity of natural landcover elements increases susceptibility to development. • The river valleys contain rare and valuable land cover elements such as fens and meadows which would be unsuitable for development. The majority of the land within the rural river valleys however is not priority habitat, so developments could potentially avoid this ecological constraint.

LT A: Rural River Valleys - susceptibility to Substations

Landscape attribute	Substation
Settlement pattern and human influence • Valleys have historically been a focus for settlement and the valleys contain some historic villages. • The floodplain however tends not to be settled, except for occasional mills. • Settlements predominantly small and nucleated of strong vernacular character. Isolated farms are present on the edges of the floodplain. • The Waveney Valley is generally rural but the area around Diss is more urbanised.	**High** • Frequent small villages and narrow country lanes create a complex settlement pattern which has a higher susceptibility to development. • A substation would be incompatible with the general settlement pattern and would dilute the strong vernacular character.
Perceptual aspects • The river valleys are typically settled, but for the most part this consists of small rural villages, often with historic character recognised through Conservation Area designations, connected by minor roads. • The generally quiet character and low density of settlement contribute to the perception of an intimate, tranquil rural landscape within the River Valleys. • Tranquillity is reduced in the Waveney Valley by the A1066 and the A143. • Tranquillity is also reduced in the middle section of the Yare Valley by the A47.	**Medium-High** • A substation would have a negative effect on the rural qualities of the river valleys. • A substation would have a negative effect on tranquillity.
Visual characteristics • Views within the valleys vary from long range and open to some more enclosed, confined views. • Views frequently include landmark features. • Views into adjacent landscapes are for the most part restricted by the ridges marking the limits of the valleys. There are some views into the valleys from the surrounding higher land. • Key views from Waveney Valley into The Broads	**Medium-High** • The contrast between open, large-scale arable farmland and the smaller-scale, more varied and more wooded river valleys has a scenic quality. • Vernacular buildings, woodlands, hedgerows, meadows and parkland trees and lakes also contribute to scenic quality, and the landform creates scenic views. This scenic quality increases susceptibility to development.

LT A: Rural River Valleys - susceptibility to Substations

Landscape attribute	Substation
Skylines • The valley crests form a skyline in views from the valley floor marking the transition to the adjacent landscape type. • In A5: Waveney Valley- a series of churches on the ridgeline form a prominent landmark. • Skyline is usually undeveloped creating a rural context. • Woodland along the valley crest is a key feature of A3: Tud River Valley.	**Medium** • The skylines are susceptible to substations, which are likely to include taller elements. • Valley crests and skylines with churches on the ridgeline have high susceptibility to change.
Intactness • Ditches, fens, meadows, riparian vegetation and vernacular buildings create a sense of place. • The Tas Valley has an intact character. Small villages are present just above the floodplain. The character is somewhat influenced by nearby pylons, railway and A-road. • The Yare and Tiffey Valleys have an intact rural character with meadows, wet woodland, and historic parkland. Small villages are also present just above the floodplain. A tranquil character away from the A47, and a strong sense of place. • The Tud Valley is largely undeveloped and the historic pattern is still legible, however the A47 cuts through the pre-existing landscape pattern and weakens the sense of character. The eastern portion of the valley is found within an increasingly urban context. The land use here has changed with the introduction of a golf course at Costessey Park, and paddocks. • The Wensum Valley is partially disturbed by flooded mineral workings in the base of the valley. The valley is largely undeveloped. • The Waveney Valley is undeveloped and largely rural except around Diss. Pattern of meadows, fens and carrs remains intact throughout most of the area. Tranquillity is reduced by the A143, but there is a relatively strong sense of place.	**High** • A substation would introduce a new and discordant use. • A substation consists of standard, utilitarian elements which are unlikely to contribute to the distinctiveness of the river valleys.

LT A: Rural River Valleys - susceptibility to Substations

Overall susceptibility	Substation
LCA A1: **Tas Rural River Valley**	**High** • The strong sense of place is vulnerable to generic forms of development, including substations, and the sense of tranquillity would also be negatively affected by this type of development. The high scenic quality and undisturbed nature of the Tas Valley both indicate high sensitivity. A substation would represent a large-scale industrial development which would be incompatible with the existing characteristics of the landscape. The susceptibility to this form of development is therefore assessed as High.
LCA A2: **Yare/Tiffey Rural River Valley**	**High** • The strong sense of place is vulnerable to generic forms of development, including substations, and the sense of tranquillity would also be negatively affected by this type of development. The high scenic quality and undisturbed nature of the Yare/Tiffey Valley both indicate high sensitivity. A substation would represent a large-scale industrial development which would be incompatible with the existing characteristics of the landscape. The susceptibility to this form of development is therefore assessed as High.
LCA A3: **Tud Rural River Valley**	**High** • The existing characteristics of the Tud Valley are considered to be highly sensitive to a substation, which would represent a new, contrasting and urbanising element within the landscape. The narrow valley is very unlikely to be able to accommodate a substation, which requires a level platform. The sense of place is vulnerable to generic forms of development, including substations, and the sense of tranquillity would also be negatively affected by this type of development.

LT A: Rural River Valleys - susceptibility to Substations

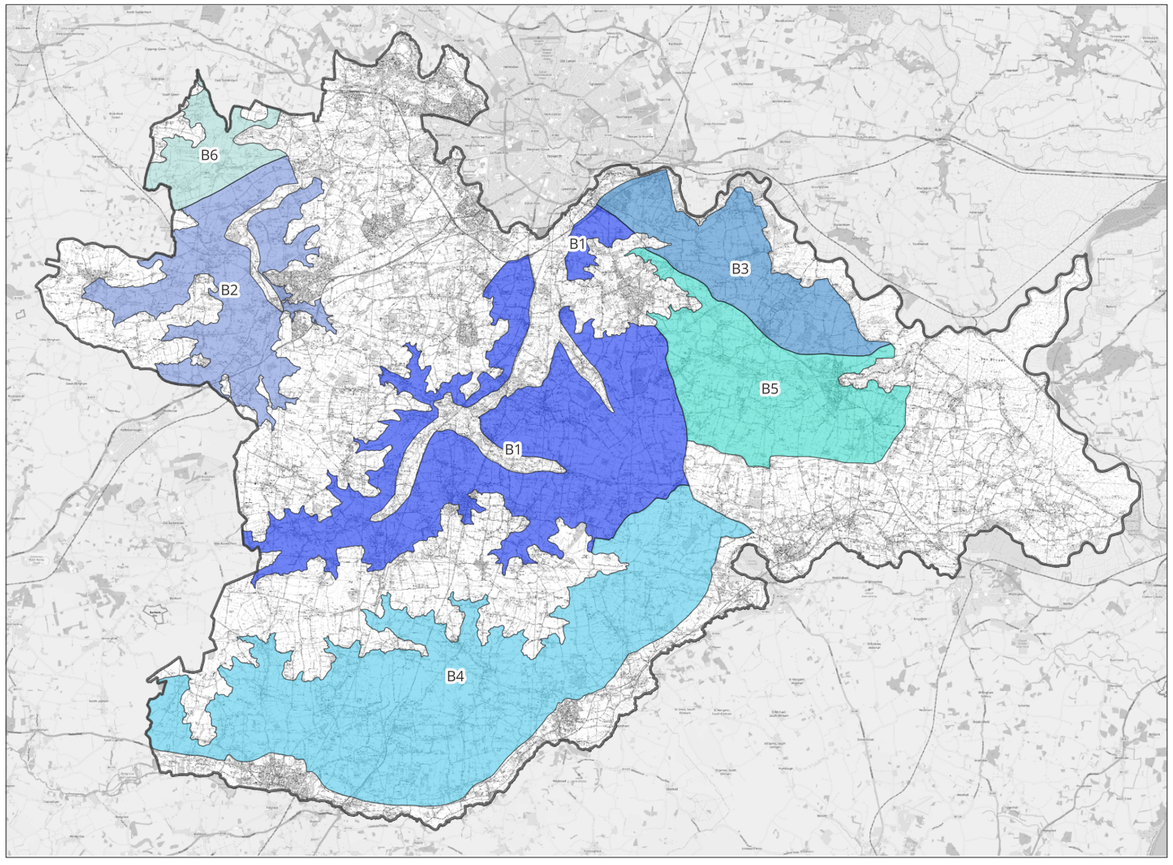
Overall susceptibility	Substation
LCA A4: **Wensum Rural River Valley**	**High** • The strong sense of place is vulnerable to generic forms of development, including substations, and the sense of tranquillity would also be negatively affected by this type of development. The high scenic quality of the Wensum Valley indicates high sensitivity. A substation would represent a large-scale industrial development which would be incompatible with the existing characteristics of the landscape. The susceptibility to this form of development is therefore assessed as High.
LCA A5: **Waveney Rural River Valley**	**High** • The existing characteristics of the Waveney Valley are considered to be highly sensitive to a substation, which would represent a new, contrasting and urbanising element within the landscape. The strong sense of place is vulnerable to generic forms of development, including substations. The high scenic quality of the Waveney Valley indicates high sensitivity.

LT B: Tributary Farmland

The tributary farmland occupies a large extent of the South Norfolk landscape occurring across the whole of the district. It is a broad transitional landscape type defined by the plateau uplands and river valleys, lying between 20m and 50m AOD.

Key characteristics

- Shelving and gently undulating landform created by small tributary valleys, with tributary rivers cutting through the glacial till to create a landscape of restrained variety.
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes providing opportunities for long and framed views.
- Tamed and peaceful farmland with scattered small farm woodlands creating a quiet rural landscape.
- Dispersed but evenly distributed settlement pattern of small, nucleated villages and small farmsteads, occasionally with large agricultural sheds.
- An intricate network of narrow, winding rural lanes often bounded by banks or ditches with a sense of impenetrability.
- Tributaries elusive- evident but usually hidden within the landscape by topography or trees.
- Medium to large-scale arable farmland of cereals and sugarbeet and occasional fields of sunflowers or other crops with sparse and/or overgrown hedgerows and hedgerow trees.
- Remnant parkland, which sometimes relates to former deer parks, plus areas of common land.
- Mixed architectural character comprising modern bungalow development and traditional vernacular architecture with gable ends (predominantly stepped) and other vernacular influences such as brick and flint and isolated churches.
- High proportion of important ecological assemblages protected as SSSIs including woodland, and wetland habitats.



The individual character areas within this type are listed below:

- B1: Tas Tributary Farmland
- B2: Tiffey Tributary Farmland
- B3: Rockland Tributary Farmland
- B4: Waveney Tributary Farmland
- B5: Chet Tributary Farmland
- B6: Yare Tributary Farmland

LT B: Tributary Farmland - susceptibility to Substations

Landscape attribute	Substation
Sense of enclosure • Woodland blocks impart a semi-wooded, semi-enclosed character to much of the area. • Valley landforms offers opportunity for longer views.	**Medium** • Semi-enclosed character is moderately sensitive to development.
Landform • Varied landform from flat to gently undulating, sloping towards tributary valleys. • Minor stream valleys cut through the glacial till to create a landscape of restrained variety.	**Medium** • The area generally consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • Steeper slopes would however be more sensitive to substations as they typically require a level platform.
Landcover • Varied pattern from small scale, intricate networks of fields/hedgerows in tributary valleys and around settlements to large, open fields on higher ground. • An intricate network of narrow, winding lanes often bounded by ditches. • Elusive tributaries, evident but usually hidden within the landscape by topography or trees. • Medium to large-scale arable fields enclosed by sparse hedges with hedgerow trees. Permanent pasture and woodland found within valleys. • Remnant parkland which sometimes relates to former deer parks, plus areas of common land. • High proportion of important assemblages protected as SSSIs including woodland and wetland habitat.	**Medium** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.

LT B: Tributary Farmland - susceptibility to Substations

Landscape attribute	Substation
Settlement pattern and human influence • Dispersed settlement pattern of small villages, hamlets, farmsteads and manors distributed across the landscape. Occasional large agricultural buildings e.g. poultry sheds • Compact villages sheltered within small valleys. • Mixed architectural character comprising modern bungalow development and vernacular architecture with stepped gable ends and other vernacular characteristics. Local building materials such as brick and flint. • Isolated churches. Locally distinctive round towered churches e.g. St Michael's Aslacton • The Chet Tributary Farmland contains the small town of Loddon.	**Medium** • The landscape does include some modern elements and has a mixed architectural character, so the settlement pattern is considered to be moderately sensitive. • Presence of historic features increases susceptibility to this form of development.
Perceptual aspects • For the most part the landscape is peaceful, rural and tranquil. • Roads introduce a local source of movement within the landscape.	**Medium** • Large substations do not have any intrinsic link with the countryside and would therefore have a negative effect on the rural qualities of the area. • Substations are likely to have a negative effect on tranquillity. • Sensitive design e.g. use of infrared cameras, could avoid the need for lighting.

LT B: Tributary Farmland - susceptibility to Substations

Landscape attribute	Substation
Visual characteristics • Transitional landscape occupying the mid ground between the plateaux and the main river valleys, providing opportunities for long and framed views. • Within these landscapes views are across arable fields to sloping valley sides and down to small-scale wooded tributary valleys. • Framed and open, long-ranging views across the countryside. • Large agricultural buildings can be visually prominent. • Pylons and poles interrupt the landscape wherever they are present, notably towards the northern part of the district. • Important views to landmarks such as Wymondham Abbey and Wicklewood Windmill that provide a sense of place. • Elements of vernacular interest that include round-towered churches. • Generally undeveloped skylines. • Strong visual influence of the adjoining Broads in character areas B3 and B5. • Visual influence of Norwich in character areas B1 and B3.	**Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Substations include some taller elements which would take many years to screen.
Skylines • The skyline varies across the landscape type from clear to interrupted by woodland blocks and undulations in landform. • In the enclosed tributary valleys the skyline can include prominent valley crests.	**Medium** • Undeveloped skylines, though not generally prominent or distinctive. • Prominent valley crests are sensitive to development. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility.
Intactness • Some roads have been modernised and there has been some modest expansion of settlements. Changing agricultural practices have led to a simplification of the landscape pattern and the loss of some landscape features. The historic pattern is nonetheless legible, and there are relatively few modern elements. The rural character of the area is intact, and there is a moderately strong sense of place.	**Medium-High** • The intact rural character is sensitive to the urbanising influence of a substation which would be incompatible with the existing landscape pattern.

LT B: Tributary Farmland - susceptibility to Substations

Overall susceptibility	Substation
LCA B1: **Tas Tributary Farmland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place, and the tranquil qualities of the landscape would also be negatively affected by this type of development. Open and framed views across arable farmland are sensitive to this type of development. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape. Susceptibility is therefore judged as Medium-High. • The existing Norwich Main substation is contained within LCA B1, and there is lower susceptibility adjacent to the existing substation.
LCA B2: **Tiffey Tributary Farmland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place, and the tranquil qualities of the landscape would also be negatively affected by this type of development. Framed and long-range views across arable farmland are sensitive to this type of development. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape. Susceptibility is therefore judged as Medium-High.
LCA B3: **Rockland Tributary Farmland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place, and the tranquil qualities of the landscape would also be negatively affected by this type of development. Views are sensitive to this type of development, especially where there are views to the Yare Valley or to round-towered or isolated churches. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape. Susceptibility is therefore judged as Medium-High.

LT B: Tributary Farmland - susceptibility to Substations

Overall susceptibility	Substation
LCA B4: **Waveney Tributary Farmland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place, while the peaceful rural qualities of the landscape would also be negatively affected by this type of development. Views are sensitive to this type of development, especially where there are views to landmark features such as isolated churches. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape. Susceptibility is therefore judged as Medium-High.
LCA B5: **Chet Tributary Farmland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place, and the peaceful rural qualities of the landscape would also be negatively affected by this type of development. Views are sensitive to this type of development, especially where there are views to The Broads to landmark features. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape. Susceptibility is therefore judged as Medium-High.
LCA B6: **Yare Tributary Farmland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place, and the peaceful rural qualities of the landscape would also be negatively affected by this type of development. Views are sensitive to this type of development, especially where there are views to landmark features such as round-towered or isolated churches. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape. Susceptibility is therefore judged as Medium-High.

LT C: Tributary Farmland with Parkland

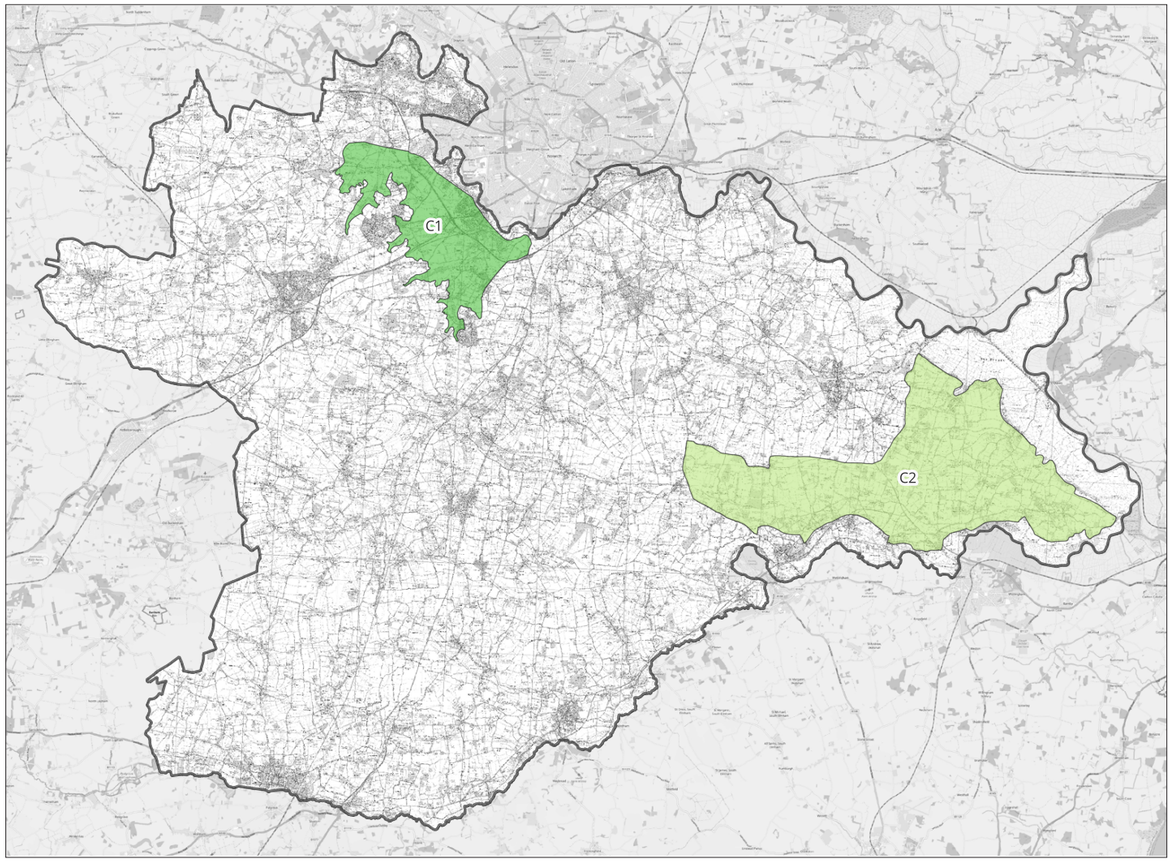
The Tributary Farmland with Parkland Landscape Type occupies two discrete areas of landscape, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very distinctive character throughout much of the area.

Key characteristics

- Gently undulating landform created by the presence of small tributary stream valleys which cut through the glacial till landscape providing a sense of restrained variety
- Transitional landscape occupying the mid ground between the upland plateaux and the main river valley landscapes, providing varied opportunities for long and framed views
- Presence of large parkland estates particularly associated directly with the tributary valleys. Estate railings, prominent gatehouses, boundary fences and tree-lined avenues with areas of pastoral farmland and horse grazing reveal the presence of the wooded parkland in the wider arable landscape.
- Context of tamed and peaceful arable farmland with scattered small farm woodlands, including ancient woodland, and medium to large-scale fields of sugarbeet and cereal surrounded by sparse hedges and hedgerow trees.
- Small fields of more unusual crops such as sunflowers and asparagus bounded by banks of coppiced willow.
- Dispersed but evenly distributed settlement pattern of small farmsteads and small, nucleated villages.
- An intricate network of small rural roads often bounded by banks or ditches with a sense of impenetrability.
- Tributaries visually elusive and often physically inaccessible- rarely evident because they are hidden within the landscape by topography or trees, particularly where they are associated with the parkland which prevents public access to them.
- Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped and Dutch gable ends and brick and flint.
- Isolated flint round towered churches particularly evident.
- Characteristic large detached halls and manor houses, usually constructed of brick and of high architectural quality, associated with the parkland estates. These are frequently screened by woodland, except at close range.

The individual character areas within this type are listed below:

- C1: Yare Tributary Farmland with Parkland
- C2: Thurlton Tributary Farmland with Parkland



LT C: Tributary Farmland with Parkland - susceptibility to Substations

Landscape attribute	Substations
Sense of enclosure • Open arable landscape is interrupted by areas of woodland. • Areas of woodland associated with estates provide greater enclosure.	**Medium** • Semi-enclosed character is moderately susceptible to development.
Landform • Gently undulating landform created by the presence of small tributary stream valleys which cut through the landscape providing a sense of restrained variety.	**Medium** • The area consists of gently undulating landscape which lies in the middle of the susceptibility spectrum. • Steeper slopes would however be more sensitive to substations as this form of development typically requires a level platform.
Landcover • Presence of large parkland estates particularly associated with the tributary valleys. Estate railings, prominent gatehouses, parkland belts, tree-lined avenues and areas of pasture reveal the presence of parkland within the wider arable landscape. • Peaceful arable farmland with small ancient woodlands and scattered coverts with medium to large-scale fields of wheat, barley, oilseed rape and sugarbeet surrounded by sparse hedges and hedgerow trees. • An intricate network of small rural roads. • Becks.	**Varying from Medium to High** • The dominant arable/pasture landcover lies in the middle of the susceptibility spectrum. • Pre-C18 enclosures, commons, ancient woodland, parklands and vernacular buildings display a stronger time depth and historical continuity and increase local susceptibility. • Areas of naturalistic landcover such as ancient woodland, species-rich grassland or fens are incompatible with development. Most of the land however does not consist of priority habitats so the ecological constraint could be avoided.

LT C: Tributary Farmland with Parkland - susceptibility to Substations

Landscape attribute	Substations
Settlement pattern and human influence • Dispersed but evenly distributed settlement with a pattern of farmsteads and small villages. • Sparse settlement pattern across C2. C1 Yare Tributary Farmland somewhat more settled with larger village of Cringleford as well as Norfolk & Norwich Hospital and A47. • Mixed architectural character comprising modern development and traditional vernacular architecture, including stepped gables and brick and flint. • Vernacular architectural character, predominantly of rural buildings and estate dwellings. More modern dwellings are found in larger villages.	**LCA C1: Medium** **LCA C2: Medium-High** • C1 Yare Tributary Farmland forms part of the Norwich Southern Bypass Landscape Protection Zone so is sensitive to development which urbanises the setting of the road and views to Norwich. • C2 has a sparse rural settlement pattern which is sensitive to this type of development. • Presence of historic features increases susceptibility to this form of development.
Perceptual aspects • Tamed arable farmland. • C2 is a peaceful rural landscape. C1 is adversely influenced by the Norwich Southern Bypass and the A11. • Pylons and the A47 negate any sense of remoteness within C1. There is however a sense of remoteness within C2, particularly adjacent to The Broads. .	**C1: Low** **C2: Medium-High** • The lack of remoteness or tranquillity within C1 reduces susceptibility. • A substation would have a negative effect on the rural qualities and sense of remoteness within C2. • Substations are likely to have a negative effect on tranquillity. • Sensitive design e.g. the use of infrared cameras, could avoid the need for lighting.

LT C: Tributary Farmland with Parkland - susceptibility to Substations

Landscape attribute	Substations
Visual characteristics • Views to wide open horizons and long views across denuded hedgerow boundaries and arable farmland from higher areas. • Prominent views to historic features such as isolated and round-towered churches. • Views framed and broken by woodland blocks and estate parkland with large manor buildings. • Intermittent, long views into The Broads from C2. • Views to Norwich in particular from the southern bypass which bisects C1. • Characteristic large halls though frequently screened by woodland. • Isolated round towered flint churches particularly evident. • Mixed architectural character comprising modern development and vernacular architecture.	**LCA C1: Medium** **LCA C2: Medium-High** • The combination of historic vernacular buildings, wooded horizons, hedgerows and hedgerow oaks counterbalanced by extensive gently undulating, arable farmland creates a moderate to high scenic quality. • Scenic qualities are reduced in C1 by the presence of pylons. • Substations include some taller elements which would take many years to screen.
Skylines • In places interrupted by woodland, pylons and posts. • Views to parkland edges and woodland. • Intermittent long views to development at the City of Norwich and Norwich Southern Bypass (from C1).	**C1: Low** **C2: Medium-Low** • Existing skylines in C1 are already influenced by pylons, and the susceptibility is considered to be low. • Skylines in C2 have some influence from existing pylons.

LT C: Tributary Farmland with Parkland - susceptibility to Substations

Landscape attribute	Substations
Intactness • Intactness varies. Some areas have experienced considerable change with the introduction of the Norwich Southern Bypass and the expansion of settlements such as Cringleford, and the introduction of pylons and other development. • Elsewhere, there is a much stronger and more intact rural character.	**LCA C1: Medium** **LCA C2: High** • The remaining open rural land within C1 is sensitive to further development and fragmentation. • The stronger character of C2 has increased susceptibility to all forms of development. • Substations consist of standardised, utilitarian elements which are unlikely to contribute to local distinctiveness.

LT C: Tributary Farmland with Parkland - susceptibility to Substations

Overall susceptibility	Substations
LCA C1: **Yare Tributary Farmland with Parkland**	**Medium-High** • Existing development has introduced noise and disturbance which reduces the sensitivity of this area to further development. The remaining areas of countryside are nonetheless susceptible to development. A susbtation would represent a large-scale industrial development which would have a stong urbanising effect on the landscape. Whilst it might be possible to reduce the effect with substantial blocks of planting the LPA cannot secure this through the NSIP process. Substations are difficult to accommodate on the gently sloping valley-sides and are incompatible with the aims of the NSBLPZ. Susceptibility is therefore assessed as Medium-High.
LCA C2: **Thurlton Tributary Farmland with Parkland**	**Medium-High** • Generic forms of development such as substations would dilute the sense of place within the Thurlton Tributary Farmland with Parklands, and the remoteness and peacefulness would also be negatively affected by this type of development. Open and framed views across farmland are sensitive to this type of development. A substation would represent a large-scale industrial development which would compromise the existing characteristics of the landscape and susceptibility is therefore assessed as Medium-High.

LT D: Settled Plateau Farmland

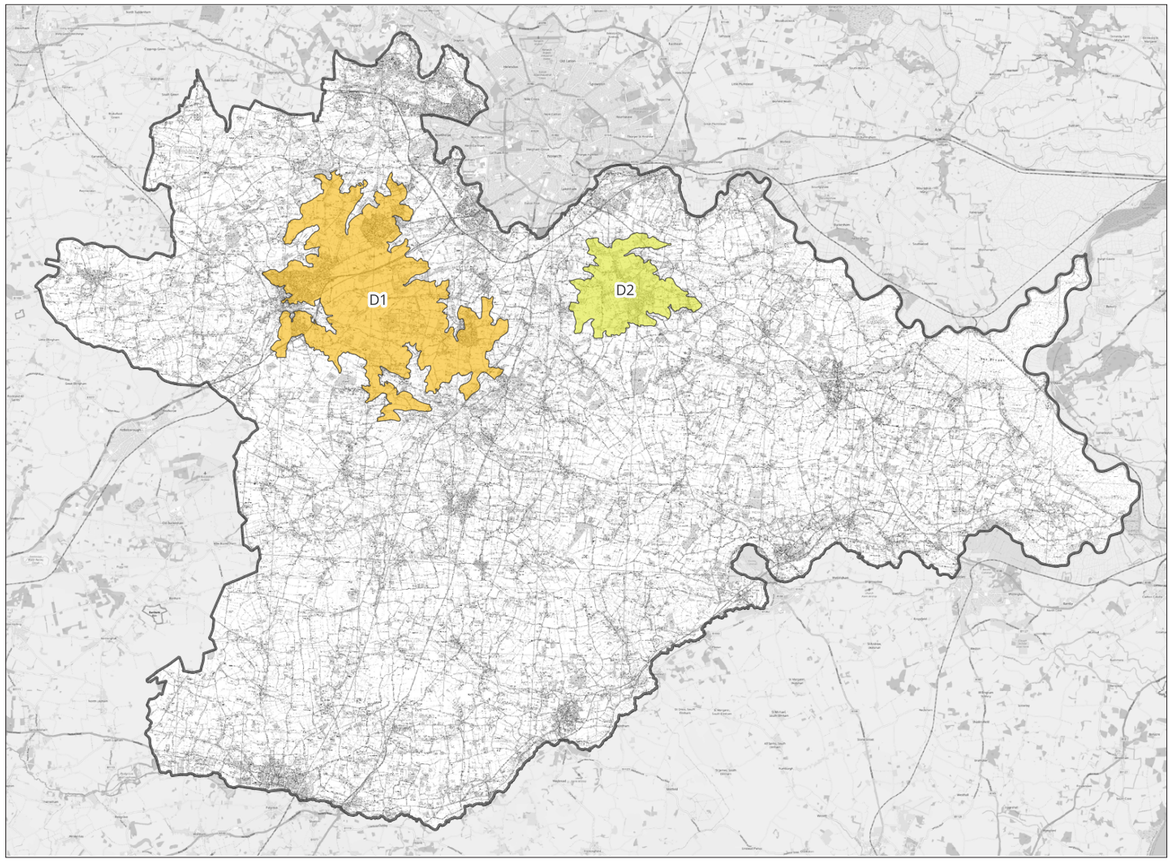
There are two areas of the Settled Plateau Farmland Landscape Type, one to the east and one to the west of the Tas Valley around the settlements of Wymondham and Poringland respectively. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The boundaries of these areas are largely represented by the 40 and 50m AOD contours. However, small and fragmented areas above the 40m contour have not been classified as Settled Plateau Farmland.

Key characteristics

- Distinct flat to gently rising elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture principally characteristic swathes of cereal, oilseed rape and sugarbeet.
- Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements.
- Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. Elements of plateau interior not visible except from other plateau areas or where tall intrusive elements are present.
- Mature remnant oak hedgerow trees are features in the agricultural landscape however hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.
- Presence of large communications masts which interrupt of the sense of openness yet provide distinct landmarks.
- Settled landscape mostly comprising large edge-of-plateau towns and large villages with other smaller nucleated settlements dispersed across the plateau.
- Some evidence of historical features within the landscape including isolated churches (some of which are round-towered), moats, historic parkland and some farm ponds.
- Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development.

The individual character areas within this type are listed below:

- D1: Wymondham Settled Plateau Farmland
- D2: Poringland Settled Plateau Farmland



LT D: Settled Plateau Farmland - susceptibility to Substations

Landscape attribute	Substations
Sense of enclosure • Generally open landscape. Poor hedgerows accentuate the openness of the landscape. • Variety of spatial experiences due to the elevation and contrast between the openness of the arable fields and intimacy of the settlements. • Wooded character in parts provides enclosure, particularly around settlements.	**High** • Poor hedges provide weak enclosure which increases the susceptibility to development, including substations.
Landform • Distinct flat to gently rolling, elevated landform as a result of the simple underlying geology. • The area centred on Poringland has the greatest variation, rising up to a gentle 'dome' at 75m AOD which is one of the most elevated areas in the district. • The boundaries of these areas are largely represented by the 40 and 50m AOD contours – the plateau edges are highly visible from adjacent landscapes.	**Varies from Low to High** • The simple flat landform is less sensitive to development. • The plateau edges however would be sensitive to development, which would be exposed and difficult to screen.
Landcover • Large arable fields characterised by swathes of cereals, oilseed rape and sugarbeet. • Some evidence of historic landscape features including moats, historic parkland and farm ponds. • Woodland blocks tend to be associated with halls/remnant parkland	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.

LT D: Settled Plateau Farmland - susceptibility to Substations

Landscape attribute	Substations
Settlement pattern and human influence • Historically somewhat sparsely settled but with some dispersed settlement including green-side settlement. • The modern day settlement pattern includes the town of Wymondham and a number of large villages. • Some vernacular buildings particularly in historic market towns, particularly including use of bricks, timber framing and stepped gable ends, but contrasted with settlements of modern bungalow development. • Wymondham and Mulbarton retain a historic character despite more recent peripheral development, whereas Poringland and Hethersett have a much more modern character (characterised by post-war bungalow development). • Former airfield at Hethel (now site of motor works).	**Medium-Low** • Settlement pattern has somewhat altered with the expansion of settlements. More developed character is apparent in the vicinity of Wymondham, Hethersett and the A11. • More settled parts of the area have a lower susceptibility to development.
Perceptual aspects • A number of large settlements are present and there is therefore little sense of remoteness. • The A11 cuts across the Wymondham Settled Plateau Farmlands and introduces a source of noise, movement and modernity. • Whilst this is a settled landscape the villages are set within a rural landscape and there is a sense of countryside.	**Medium** • The remaining areas of countryside are sensitive to urbanisation. • A substation would detract from the rural qualities where these are present. • Away from the A11 there is a higher level of tranquillity which is somewhat sensitive to this form of development.

LT D: Settled Plateau Farmland - susceptibility to Substations

Landscape attribute	Substations
Visual characteristics • Strong open horizons – the archetypal 'Norfolk' Landscape. • Illusions of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape. • Views to large communication masts, settlement on the plateau edge and areas of parkland and woodland blocks. • Long views of the district from the plateau edges, including views to Norwich, and internalised plateau views. • D2 plateau is very prominent in views from the surrounding landscape. • Mast at Poringland has high visibility but also serves as a landmark. • A number of large-scale farm buildings including grain towers and silos that punctuated the horizon (particularly near Silfield).	**Varies from Medium to High** • The prominent nature of D2 makes it sensitive to views from adjoining landscape character areas. • The edge of D1 is potentially sensitive to views from adjoining landscapes. The interior of the plateau may be less sensitive to a substation, particularly where there is strong enclosure from existing woodland.
Skylines • Strong open horizons – the archetypal 'Norfolk' landscape. • Illusion of wooded horizons due to the presence of significant areas of mixed woodland blocks, some intact hedgerows and the visual merging of hedgerow trees and woodlands in the landscape.	**Medium** • The long views to open horizons are sensitive to taller forms of development including AD plants. • Mitigation planting could also affect the characteristic open horizons.

LT D: Settled Plateau Farmland - susceptibility to Substations

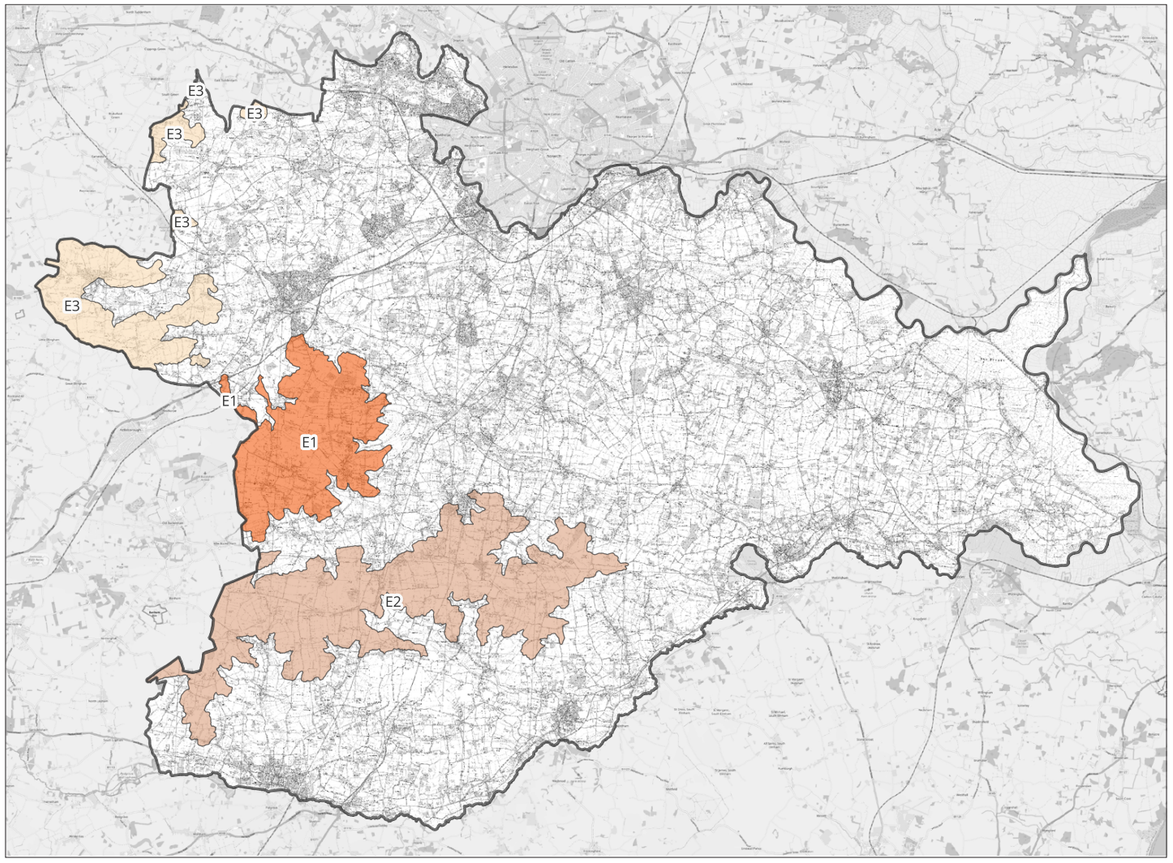
Overall susceptibility	Substations
LCA D1: **Wymondham Settled Plateau Farmland**	**Varying from Medium to Medium-High** • Considering the scale of the landscape and the presence of a certain amount of settlement already the susceptibility is generally Medium. The plateau edges are however more sensitive especially where there are views to adjacent areas. Views to Wymondham Church or to Norwich are particularly sensitive and the gaps between settlements are vulnerable to erosion. • Whilst there is already some development within this area a substation would nonetheless represent a new, contrasting element within the landscape. Generic forms of development such as substations would dilute the sense of place, and more tranquil parts of the area would be negatively affected by this type of development. Representative 'Norfolk' views are sensitive to this type of development.
LCA D2: **Poringland Settled Plateau Farmland**	**Varying from Medium to Medium-High** • Considering the scale of the landscape and the presence of a certain amount of settlement already the susceptibility is generally Medium. The plateau edges are however more sensitive especially where there are views to adjacent areas. Views to Norwich and the Tas Valley are particularly sensitive. • Whilst there is already some development within this area a substation would nonetheless represent a new, contrasting element within the landscape. Generic forms of development such as substations would dilute the sense of place, and more tranquil parts of the area would be negatively affected by this type of development.

LT E: Plateau Farmland - susceptibility to Substations

The Plateau Farmland Landscape Type occurs in the western part of the district in three principal areas, all of which continue beyond the South Norfolk boundary into the adjoining Breckland District. The Plateau Farmlands are defined by their elevation and all are primarily delineated by the 50m contour. However, it should be noted that not all areas above the 50m contour line have been classified as Plateau Farmland due to differing land use patterns.

Key characteristics

- Distinct flat and elevated landform as a result of the simplistic underlying Glacial Till geology.
- Large fields of arable monoculture with characteristic swathes of cereal, oilseed rape and sugarbeet monoculture.
- Sense of openness and exposure due to the elevation and scarcity of enclosing elements.
- Long views of the district from the plateau edges and shorter internalised plateau views. Inner plateau largely invisible from other areas.
- Mature remnant oak hedgerow trees are features in the agricultural landscape. However, hedgerows have been severely degraded or lost leading to fragmentation within the landscape.
- Straight plateau-top roads characteristically lined with attractive wide grass verges and ditches.
- Wooded horizons as a result of visual merging of hedgerow trees and woodlands in the landscape, which integrate settlements into the landscape.
- Presence of tall structures including masts and poles which disturb the rural scene interrupting the sense of openness.
- Sparsely settled landscape mostly comprising larger edge-of-plateau settlements, small nucleated and long linear settlements.
- Presence of historic features within the landscape including isolated church, moats, and farm ponds.
- Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development.
- Disused air fields



The individual character areas within this type are listed below:

- E1: Ashwellthorpe Plateau Farmland
- E2: Great Moulton Plateau Farmland
- E3: Hingham-Mattishall Plateau Farmland

LT E: Plateau Farmland - susceptibility to Substations

Landscape attribute	Substations
Sense of enclosure • Sense of openness and exposure due to the elevation and scarcity of enclosing elements. • The flatness of the plateau creates a strong sense of openness with large skies and distant horizons.	**Medium-High** • Poor hedges provide weak enclosure which increases the susceptibility to development, including substations.
Landform • Distinct flat and elevated plateau landform. • Defined by the elevation and primarily delineated by the 50m contour.	**Varies from Low to High** • The simple flat landform is less sensitive to this type of development. • The plateau edges however are potentially sensitive to substations.
Landcover • Large fields of arable monoculture with characteristic swathes of wheat, barley, oilseed rape and sugar beet. • Mature hedgerow oaks are features in the agricultural landscape. However hedgerows have been severely degraded or lost, leading to a much simplified landscape. • Generally an early enclosed landscape, but with significant areas of common/ heath, many of which were enclosed in the C19. Some remaining commons. • Mixed field patterns relating to the history of enclosure.	**Medium** • Relatively simple landcover of arable farmland lies in the middle of the susceptibility spectrum.
Settlement pattern and human influence • Dispersed settlement pattern. Common-edge settlement, hamlets and small nucleated villages. Many small halls, often isolated, with moats. No large parklands. • Some vernacular buildings particularly including the use of brick and Dutch gable ends, but intermixed with more modern bungalow development. • Linear settlements occur along roads with some vernacular buildings intermixed with more modern development. • Disused airfields. • Occasional tall structures including wind turbines.	**Medium-High** • Strong sense of historical settlement pattern indicates higher susceptibility to development.

LT E: Plateau Farmland - susceptibility to Substations

Landscape attribute	Substations
Perceptual aspects • A peaceful rural character created by the absence of main roads and development. • Quiet rural lanes dissect the landscape. • The A140 cuts north-south through part of E2.	**Medium-High** • Peaceful rural character is sensitive to the introduction of a substation. • Sense of tranquillity is somewhat sensitive to this form of development.
Visual characteristics • Long views of the district from the plateau edges take in a wide panorama of South Norfolk and these are some of the best in the district. • Shorter internalised plateau views are to farm buildings and isolated churches. • From higher areas of plateau and from the plateau edge there are views to adjacent landscapes including to churches in adjoining areas.	**Medium-High** • Visual connections with adjacent landscapes, including some long views, indicates higher susceptibility. • A substation includes taller elements which would take many years to screen.
Skylines • The flatness of the plateau creates a strong sense of openness with vast skies and dramatic horizons. • Expansive skies are a defining feature with distant views and farm buildings are visible in the open landscape. • 360 degree horizon in places.	**Medium** • The long views to open horizons are sensitive to taller forms of development including Substations. • Mitigation planting could also affect the characteristic open horizons.
Intactness • The landscape has experienced ongoing change including enclosure in the C19 and rationalisation in the C20. Some elements of the landscape however can be traced back to the medieval era and there is some sense of historic continuity. Modern elements are relatively few. • Though there have clearly been changes in land management, including the amalgamation of fields, the landscape retains a strong rural character.	**Medium-High** • A substation would contrast with the rural character of the area. • Moderately strong sense of place. • A substation would consist of standardised, utilitarian elements which are unlikely to contribute to local distinctiveness. The susceptibility to this form of development is therefore assessed as Medium-High.

LT E: Plateau Farmland - susceptibility to Substations

Overall susceptibility	Substations
LCA E1: **Ashwellthorpe Plateau Farmland**	**Medium-High** • The existing characteristics are considered to be sensitive to a substation, which would represent a new, contrasting and urbanising element within the landscape. Generic forms of development such as substations would dilute the sense of place, and the peaceful rural qualities of the landscape would also be negatively affected. Susceptibility is therefore assessed as Medium-High.
LCA E2: **Great Moulton Plateau Farmland**	**Medium-High** • The existing characteristics are considered to be sensitive to a substation, which would represent a new, contrasting and urbanising element within the landscape. Generic forms of development such as substations would dilute the sense of place, and the peaceful rural qualities of the landscape would also be negatively affected by this type of development. Susceptibility is therefore assessed as Medium-High.
LCA E3: **Hingham-Mattishall Plateau Farmland**	**Medium-High** • The existing characteristics are considered to be sensitive to a substation, which would represent a new, contrasting and urbanising element within the landscape. Generic forms of development such as substations would dilute the sense of place, and the peaceful rural qualities of the landscape would also be negatively affected by this type of development. Susceptibility is therefore assessed as Medium-High.

LT F: Valley Urban Fringe

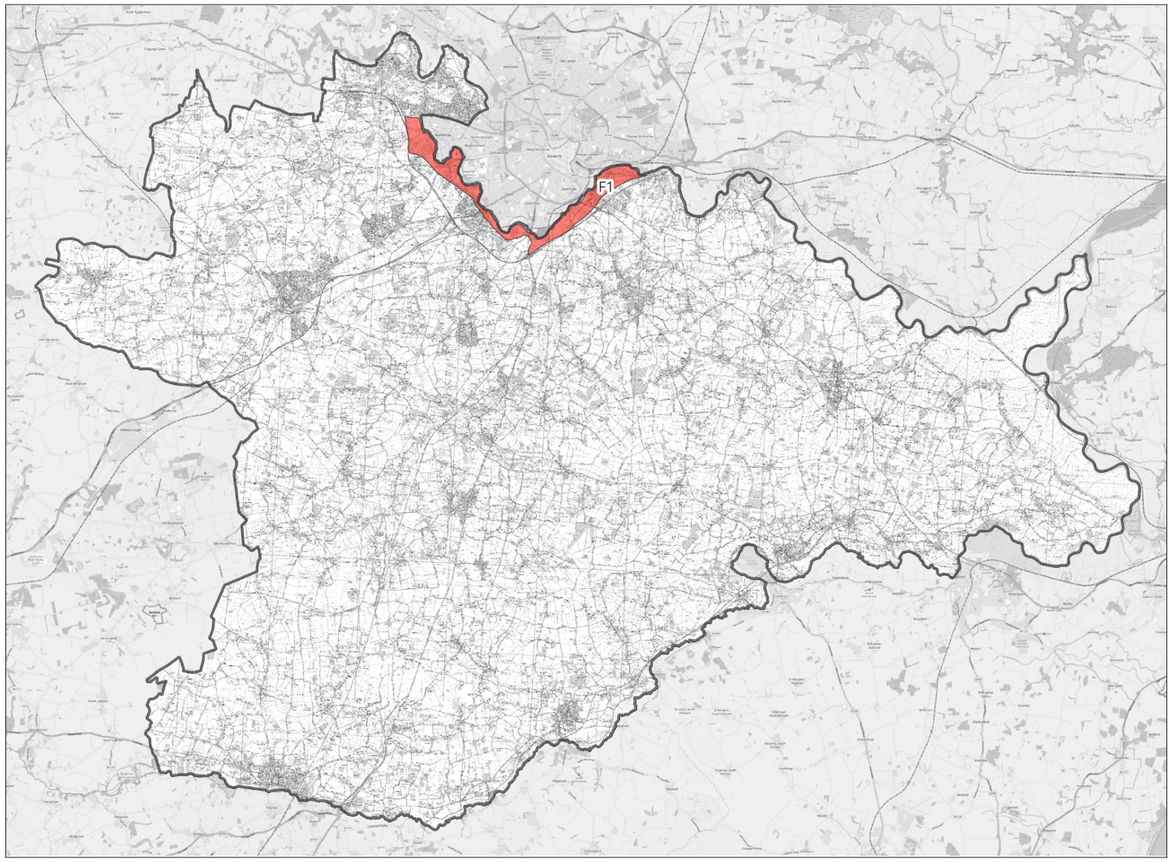
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area within the jurisdiction of Norwich City Council. The crest of the slope at about 30m AOD represents the boundary of this landscape type; as it is at this point that the character changes to a valley landform, focused on the River Yare.

Key characteristics

- Distinctive broad meandering valley form with wide flat flood plain and enclosing valley sides, occasionally opening up where tributary valleys such as the Tas valley link to the Yare valley.
- Glacial gravel deposits, which have been exploited resulting in remnant flooded gravel workings along the valley floor.
- Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland creating a well wooded appearance.
- Inaccessible valley floor with relatively few river crossings.
- Evidence of early human activity, for example the henge at Arminghall and presence of numerous Scheduled Ancient Monuments.
- Few distinctive vernacular buildings mainly due to the relative lack of prewar settlement within the valley.
- Distinct absence of settlement within the valley, apart from discrete areas nestled around river crossings, although influenced by Norwich urban fringe along parts of the upper valley sides.
- Impenetrability resulting in a sense of remoteness and solitude- remarkable given the closeness of a major city.
- Large institutional buildings occasionally visible from the valley.

There is one Landscape Character Area within this type:

- F1: Yare Valley Urban Fringe



LT F: Valley Urban Fringe - susceptibility to Substations

Landscape attribute	Substations
Sense of enclosure • A sense of containment. • Wide, fairly flat floodplain with enclosing valley sides. • Trees and woodland also contribute to enclosure in places.	**Medium** • Semi-enclosed landscape with medium susceptibility. • Localised enclosure by trees and woodland may reduce susceptibility to development in certain locations.
Landform • Wide, fairly flat floodplain with enclosing valley sides. • The sides of the valley are fairly steep in places.	**High** • Valley floor is flat, but subject to flooding constraint. • Valley sides have high susceptibility to substations, which would typically require a level platform. Development on a valley-side would also be difficult to screen.
Landcover • Large river flanked by characteristic wetland vegetation, including reeds and fringing alder/willow woodland. Mixed woodlands and shelterbelts occur on the valley sides creating a well-wooded appearance. • Glacial gravel deposits, which have been and continue to be exploited resulting in remnant flooded gravel workings along the valley floor. • Natural character. Nature reserves such as Whitlingham Marsh. The river itself is a chalk river. • Presence of recreational landscapes including the country park at Whitlingham and playing fields at UEA. • Inaccessible valley floor with relatively few river crossings.	**Varying from Medium to Medium-High** • Semi-natural habitats within floodplain have higher susceptibility. • The valley contains rare and valuable habitats such as marsh which would be unsuitable for development. • Valley sides however are less sensitive in terms of landcover.
Settlement pattern and human influence • Highly influenced by Norwich urban fringe along parts of the upper valley sides. • A number of large institutional buildings in or adjacent to the valley. • Green buffer and comprehensible development edge to the City of Norwich. • Floodplain has remained undeveloped.	**Medium** • Floodplain is sensitive to development, which would be out of character. Valleysides do feature development however development of this scale is likely to weaken the perception of the Yare Valley as a green buffer.

LT F: Valley Urban Fringe - susceptibility to Substations

Landscape attribute	Substations
Perceptual aspects • Noise of traffic on the Norwich Southern Bypass disturbs the tranquillity of the valley. Overall, despite these urban influences, the valley is mostly quiet and secluded.	**Medium-Low** • Potentially introduces additional noise and lighting however existing conditions indicates lower susceptibility.
Visual characteristics • Views are variable with open and enclosed views within the valley with large institutional buildings occasionally visible. • Views across the valley towards the City of Norwich. Valley performs an important visual function in creating a setting to the city. • Some enclosure from valley sides and vegetation.	**Medium-High** • Substations include substantial structures which could potentially block or interfere with views to Norwich. Mitigation planting could also block views.
Skylines • The valley crests form a skyline in views from the valley floor. • Mixed woodland blocks and shelter belts occur on the valley sides creating a well-wooded skyline.	**Low** • The well wooded skylines means that development is unlikely to be visible on the skyline. • Existing pylons are present in places. Where pylons are present this reduces the local susceptibility. • Generally low susceptibility, but valley crests are sensitive to development.

LT F: Valley Urban Fringe - susceptibility to Substations

Overall susceptibility	Substations
LCA F1: **Yare Valley Urban Fringe**	**Medium-High** • A susbtation would represent a large-scale industrial development which would have a stong urbanising effect on the landscape. Whilst it might be possible to reduce the effect with substantial blocks of planting the LPA cannot secure this through the NSIP process. Substations are difficult to accommodate on the gently sloping valley-sides and are incompatible with the aims of the NSBLPZ. Susceptibility is therefore assessed as Medium-High.

LT G: Fringe Farmland

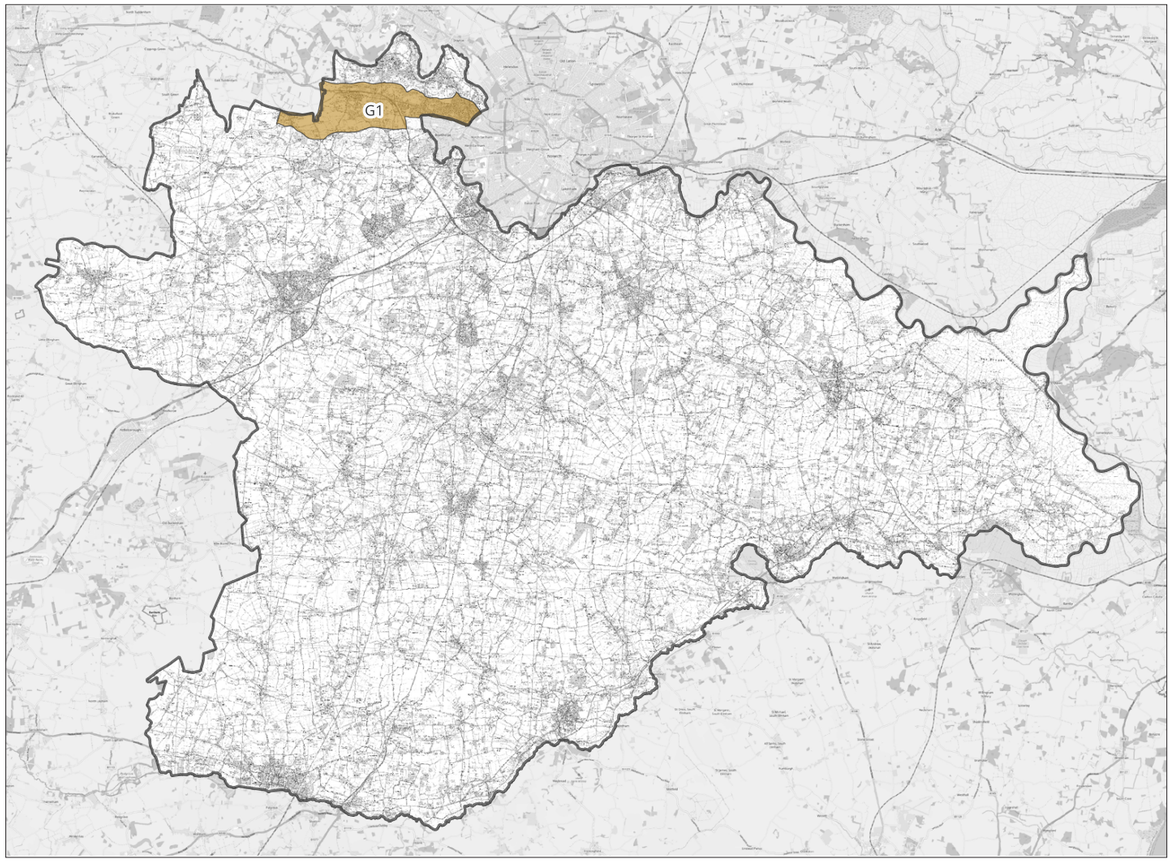
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare Rural River Valley to the south. It is defined as a distinctive landscape as a result of its relatively developed character and eroded farmland context.

Key characteristics

- Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline;
- History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas.
- Use of the area for urban fringe uses including a park and ride scheme (under construction), retail warehouses, a golf course and the Royal Norfolk Showground.
- Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton.
- Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.
- Absence of large wooded areas.
- Norwich Southern Bypass is a major feature of the area.

There is one Landscape Character Area within this type:

- G1: Easton Fringe Farmland



LT G: Fringe Farmland - susceptibility to Substations

Landscape attribute	Substations
Sense of enclosure • This landscape can feel exposed in places as a consequence of the elevated ridge topography and relatively low–level of woodland.	**Varies** • The degree of openness and enclosure vaires according to the landcover pattern and level of built development. • The more open and exposed areas have high susceptibility.
Landform • Gentle ridge of land marking the dividing line between two valley landscapes and creating an impression of exposure along the ridgeline. • Undulating landscape with a distinct ridge top.	**High** • The ridge and undulating landform is sensitive. • A substation would sit awkwardly in relation to the topography and would potentially appear as a stark addition to the landscape.
Landcover • Defined predominantly by farmland with urban and urban fringe development. A degraded farmland context. • History of mineral extraction, particularly sand and gravel workings, resulting in scarred and reclaimed areas. • Urban fringe uses including a park and ride scheme, retail warehouses, a golf course and the Royal Norfolk Showground. • Rural farmland origins and context including both arable and pastoral farmland and retaining a peaceful rural quality.	**Varies** • More developed areas including the urban fringe have a lower sensitivity. • The more rural parts of the area have moderate sensitivity.
Settlement pattern and human influence • Significant level of settlement including the Norwich suburb of New Costessey and the smaller linear settlement of Easton. • Relatively developed character. • Retail warehouses and supermarkets on edge of town.	**Medium-Low** • Significant levels of settlement indicate lower susceptibility. • Development of this scale would nonetheless be substantial and would introduce additional human influence to the landscape.

LT G: Fringe Farmland - susceptibility to Substations

Landscape attribute	Substations
Perceptual aspects • Not a remote or tranquil landscape. Recent construction and land use activities have had significant effect upon the rural character. • The Norwich Southern Bypass introduces a corridor of noise and movement. Other roads of the area retain a strong rural character.	**Medium-Low** • Existing noise and disturbance indicate a fairly low susceptibility to change.
Visual characteristics • There are views from the ridge into the adjacent valley landscapes of the Tud and the valley of the rural Yare with its flooded gravel workings. • The ridge is a locally prominent feature of the landscape and is visible from the valleys of the Yare and Tud and the surrounding tributary valley landscape.	**High** • The existing visual characteristics are more susceptible to this scale of development. • The ridge is sensitive to this form of development, which would appear stark. • Views to and from the adjacent valley landscapes increase sensitivity.
Skylines • Skyline varies, sometimes formed by distant views to adjacent landscapes but often interrupted by development and shelterbelts.	**Medium-Low** • More developed parts of the area do not feature important or characteristic skylines and are less susceptible to change. • The ridge however forms an important part of the skyline in views from adjacent landscapes. • The presence of pylons reduces the susceptibility of the skyline.

LT G: Fringe Farmland - susceptibility to Substations

Overall susceptibility	Substations
LCA G1: **Easton Fringe Farmland**	**Medium-High** • The ridge is a locally prominent feature which is sensitive to development of all types. Views from adjacent landscapes increase sensitivity. • Whilst there is already some development within this area a substation would nonetheless represent a new, contrasting element within the landscape. • A substation would have a substantial presence within the landscape and would potentially appear stark in this location. • The overall susceptibility is therefore assessed as Medium-High.

Landscape Susceptibility in relation to Energy Generation, Storage and Transmission

for

South Norfolk Council

Appendix 4

Local Landscape Character Analysis

December 2025

thelandscapepartnership

Table 01: Tas Tributary Farmland LCA Characteristics by Susceptibility Criteria

Criterion	
Scale	*'large scale arable landscape'* [1]
Enclosure	'*The large-scale arable landscape has an open to semi-enclosed character, and there are very few hedgerows remaining'* '*Scattered remnant hedgerow trees, particularly oak, sometimes including avenues lining the roads or marking former, denuded, field boundaries'*
Landform	*'gently undulating to flat and sloping landscape incised by shallow tributary valleys'*
Landcover	*'Large open arable fields or cereal, sugarbeet and occasionally maize'* *'Small blocks of deciduous woodland of high ecological and visual quality'* *'Damp grasslands of ecological importance located within the tributary valleys'* *'tributary streams which are not prominent landscape features'*
Human influence	*'The eastern part of the LCA includes modern infrastructure, with large double line of pylons and electricity substation, west of Dunston Hall. A large transmitting station west of Howe is visible from a wide are extending vertically from wooded horizons.'* *'Transportation corridors including main connecting roads. Ditches, low banks and wide grass verges associated with the network of rural roads'* *'Settlement characterised by a small number of large villages includes the administrative centre of South Norfolk – Long Stratton – with smaller hamlets, scattered farmhouses and agricultural buildings'* *'Mixed vernacular or timber-frame, stepped and Dutch Gables, thatch and round-towered churches'* *'Networks of recreational footpaths'*
Perceptual aspects (e.g. rural character, stillness, solitude, tranquillity, dark skies)	'*a landscape of gentle slopes leading down to shallow tributary valleys, the streams of which are frequently hidden within the landscape'* *'Hedgerow trees are sparse and appear as lone landmarks in the farmed landscape. There are also a number of intact avenues of mature oak standard hedgerow trees which punctuate the open arable landscape and provide an important vertical element*.'
Visual characteristics including skyline	*'views to Norwich and the Norwich Southern Bypass from the northern area of the LCA and also into the Tas Rural River Valley LCA including towards the earthworks of Venta Icenorum at Caister St Edmund. In the north of the LCA there are clear views into the Broads.'* *'wooded horizons which add variety to, and create intimacy within, the landscape'*
Intactness	*'few hedgerows remaining'*

[1] Quotes have been taken from the South Norfolk Landscape Character Assessment, 2001

Table 02: Tas Tributary Farmland LCA Value Characteristics

Criterion	Commentary
Natural heritage Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest that contributes positively to the landscape	No national landscape designations. SSSI designated ecological assemblages including hornbeam coppice habitats and ancient woodlands of particular importance - Little Wood, plus some grasslands – Fritton Common. North of Caistor St. Edmund - SSSI Chalk Pit. A number of County Wildlife Sites including several sites of ancient woodland - Great Wood, Popes Wood, Pye's Covert and, Brooke Wood, Howe Grove - semi natural woodland (Hill Farm Woodland)
Cultural heritage Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape	Medieval deer parks and a number of historic parklands were once a characteristic of this area, including examples at Bixley, Stoke Hall, Kirstead Hall, Brook House, Woodton and Boylands, but these have now largely disappeared. Scheduled Ancient Monuments feature parts of the remains of medieval settlements at Bixley and Arminghall. Presence of round-towered churches e.g. Topcroft and Fritton. Presence of isolated churches e.g. Tibenham Numerous Listed Buildings
Landscape condition Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	Historic pattern of the landscape has altered due to hedgerow removal and development Landscape remains predominantly agricultural Small woodland blocks and individual mature trees create a wooded horizon Some overgrown hedgerows
Associations Landscape that is connected with notable people, events and the arts	Boudica Way long distance national trail cuts through the eastern half of the LCA – named after the legendary warrior Queen of the Iceni whose tribes once inhabited the area, with the Venta Icenorum (marketplace of the Iceni) in the neighbouring Tas Rural River Valley LCA.
Distinctiveness Landscape that has a strong sense of identity	Area provides strategic break between settled areas, particularly the area north of the Poringland Settled Plateau Farmland LCA and south of Norwich.

Table 02: Tas Tributary Farmland LCA Value Characteristics (continued)

Criterion	Commentary
Recreational Landscape offering recreational opportunities where experience of landscape is important	PRoW offering some opportunities for recreation
Perceptual (scenic) Landscape that appeals to the senses, primarily the visual sense	Agricultural landscape with large open fields. Some areas of pastoral farmland with visible grazing animals Areas where pylons, transmission masts and substations are notable and rise above the mature tree canopy
Perceptual (wildness and tranquillity) Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	No perception of wilderness. Some sense of tranquillity through the agricultural landscape via PRoWs and within golf course, diminishing around the Norwich Southern Bypass (A47) and other A roads such as the A140
Functional Landscape that performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	Trees and small woodland blocks perform ecosystem services Predominantly arable landscape and some drainage ditches Contributes to separation between southern edge of Norwich and surrounding settlements. The northern edge of the LCA is overlapped by the Norwich Southern Bypass Landscape Protection Zone (NSBLPZ). This Landscape Zone has been identified where there are high levels of visual accessibility to and from the road to a predominantly open rural area that plays an important part in making the landscape setting of Norwich.
Other observations	*'further loss of vegetation structure including woodland and hedgerows from the landscape which would lead to a greater sense of openness;* *gently sloping topography and open landscape making this area sensitive to intrusion by tall and large elements, including large farm buildings and pylons;* *potential for adverse effects upon views in the north of this character area to/from Norwich and the Bypass;* *key reciprocal views to and from The Broads.'*

Table 03: Tas Rural River Valley LCA Characteristics by Susceptibility Criteria

Criterion	
Scale	*'Distinct, moderately wide, simple valley form'*
Enclosure	'*Less enclosed than some other valleys'*
Landform	*'medium-scale clearly defined flat valley floor, shallow side slopes and adjoining smaller-scale tributary valleys'*
Landcover	'*Pastoral valley floor with cattle grazing and distinctive willow pollards lining the watercourses on the valley floor'* *'Upper tributary valleys of great ecological richness and importance, including areas of fen, marsh and unimproved wet and neutral grassland'* '*Fragmented woodlands and shelterbelts on the valley sides creating a wooded fringe to much of the valley interspersed with more open areas of arable land'*
Human influence	'*Presence of historic earthworks including Scheduled Ancient Monuments, including the large highly visible defensive earthworks of Venta Icenorum and the earthworks at Tasburgh'* *'Sparsely settled character with buildings clustered around fording points and at the top of the valley sides'* *'Characteristic vernacular buildings particularly notable including weatherboarded mill houses and Dutch gable ends'* *'Presence of a small number of distinctive halls and parkland including English Heritage listed parkland at Rainthorpe Hall'*
Perceptual aspects (e.g. rural character, stillness, solitude, tranquillity, dark skies)	'*a feeling of exposure and openness and some long views with the valley but restricted external views'* '*A large number of attractive fords and small bridges occurring at regular intervals along the river and side tributaries'* *'Network of narrow peaceful rural lanes throughout the valley including sunken lanes'* *'Role in dividing and defining east and west of South Norfolk District'*
Visual characteristics including skyline	'*River alternately visible and hidden marked by sparse waterside vegetation including reed filled ditches and narrow woodland belts. The flat, wide, green valley floor is a distinctive feature'*
Intactness	*'A more disturbed character in the north of the area due to the influence of pylons, railway and roads'*

Table 04: Tas Rural River Valley LCA Value Characteristics

Criterion	Commentary
Natural heritage Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest that contributes positively to the landscape	No national landscape designations. SSSIs including Shotesham marshy and wet neutral grassland, Forncett Meadows, Aslacton Parish Land spring line meadow, Flordon Common shallow fenland peat, Caistor St. Edmund quarry.
Cultural heritage Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape	English Heritage listed Grade II parkland at Rainthorpe Hall. SAM at Tasburgh (earthworks) and Roman Centre at Caistor St. Edmund (Venta Icenorum) and associated sites, visible across the valley and create a distinct open landscape. Although not a principal defining characteristic of this character area, there are attractive ornamental gardens at Rainthorpe Hall, near Tasburgh, which are listed by English Heritage. There are also areas of parkland at associated with Dunston Hall (a hotel with golf course) and at Shotesham Park. Presence of round-towered churches (Tasburgh) and isolated churches (Caistor St. Edmund).
Landscape condition Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	Landscape remains predominantly pastoral Small woodlands in the southern part of the valley with linear wet woodland lining the river corridor, plus larger woodland blocks in the valley near Newton Flotman create a wooded horizon Good hedgerow network. Mature hedgerow trees
Associations Landscape that is connected with notable people, events and the arts	Boudica Way long distance national trail cuts through the eastern half of the LCA – named after the legendary warrior Queen of the Iceni whose tribes once inhabited the area, with the Venta Icenorum (marketplace of the Iceni).
Distinctiveness Landscape that has a strong sense of identity	Distinctive valley landform. Sunken lanes.

Table 04: Tas Rural River Valley LCA Value Characteristics (continued)

Criterion	Commentary
Recreational Landscape offering recreational opportunities where experience of landscape is important	Golf course and Spa at Dunston Hall PRoW offering some opportunities for recreation
Perceptual (scenic) Landscape that appeals to the senses, primarily the visual sense	The river itself is not a particularly dominant feature and is often hidden within a wide green floodplain. The main indication of the presence of the river is the vegetation, which intermittently lines its banks, including some lines of willow pollards. The river is also observable from the crossing points - the large number of fords are a particularly characteristic and memorable feature of the Tas Valley. There are also a number of small bridged crossings such as the bridge at Newton Flotman.
Perceptual (wildness and tranquillity) Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	No perception of wildness. The valley is distinct for the perceived scarcity of settlement due to the well integrated nature of the built environment with the surrounding landscape.
Functional Landscape that performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	Trees and small woodland blocks perform ecosystem services Predominantly a strong pastoral quality and is grazed by cattle, creating a strong contrast with the more intensive arable land use of much of the district. The former Roman Road linking Norwich and Ipswich (now the A140) which runs along the upper slopes on the western side of the valley and effectively forms the boundary of the character area, adding an element of noise and movement to this peaceful valley landscape. Other modern intrusions include the pylons to the north of the area and the Norwich Southern Bypass, which defines the northern limit of the character area. Valley provides an important landscape division between settled plateaux to east and west of District. The northern edge of the LCA is overlapped by the Norwich Southern Bypass Landscape Protection Zone (NSBLPZ). This Landscape Zone has been identified where there are high levels of visual accessibility to and from the road to a predominantly open rural area that plays an important part in making the landscape setting of Norwich.

Table 04: Tas Rural River Valley LCA Value Characteristics (continued)

Criterion	Commentary
Other observations	*'The need to conserve the peaceful rural character of the Tas Valley and the threat of incremental change, including upgrading of the rural lane network (e.g. kerbing would be very detrimental to the character of the sunken lanes which are a feature of the valley, with their small fords and river crossings);* *Particular vulnerabilities in the northern part of the valley due to the impact of infrastructure and large scale land uses relating to the urban edge of Norwich including pylons, golf courses and development in association with the transport corridors (A140 and A47);* *Visual sensitivities of the Tas Valley to new development/landscape change as a result of its open character, wide flat floor and long valley views;* *Loss of hedgerow boundaries and trees, resulting in a further opening up of the landscape creating some very large scale and bleak areas on valley sides;* *Sensitivity of historic landscapes, particularly Caistor St Edmund to visual intrusion'*

Table 05: Yare Tributary Farmland with Parkland LCA Characteristics by Susceptibility Criteria

Criterion	
Scale	*'a variety of open / more intimate landscape settings'* *'Transitional landscape occupying the mid ground between the upland plateau of the Wymondham-Hethersett settled plateau farmland and the principal Yare Valley and forming part of the transition between the rural and urban landscape'*
Enclosure	*'Fields surrounded by sparse hedges and hedgerow trees, with occasional mature/veteran oaks forming a distinctive feature alongside the lanes'* *'Estate railings, boundary fences and tree lined avenues'*
Landform	*'Shelving landform with a gently undulating topography created by the presence of small tributary stream valleys cutting through the landscape'*
Landcover	*'Arable and pastoral farmland of cereals and sugarbeet with more pastoral land uses within the immediate tributary valley corridor'* *'Presence of large parkland estates, tree lined avenues and traditional wooded parkland contribute to landscape character'* *'small farm woodlands and intermittently wooded tributary valleys'*
Human influence	*'Sparsely settled landscape of small clusters of farmhouses, small villages and rural dwellings interspersed with large manorial buildings and halls'* *'Vernacular architectural character, predominantly of rural buildings and estate dwellings. More modern dwellings are found in the larger villages'* *'High number of large dwelling set in extensive grounds including characteristic large detached halls and manor houses. Usually constructed of brick, of high architectural quality, associated with the parkland estates of Keswick, Intwood, Thickthorn and Colney.'* *'Presence of large institutional buildings including new hospital and areas of the Research Park at Colney'* *'The Norwich Southern Bypass and A11 Wymondham Road trisect the landscape and the area is also traversed by the main Norwich-London railway line. These routes create corridors of movement and noise in this otherwise peaceful landscape. Elsewhere, there is an intricate network of narrow rural roads and lanes'*
Perceptual aspects (e.g. rural character, stillness, solitude, tranquillity, dark skies)	*' Peaceful farmland with small farm woodlands and intermittently wooded tributary valleys creating a quiet rural atmosphere'* *' A sense of impenetrability and remoteness despite the presence of major transportation corridors'*

Table 05: Yare Tributary Farmland with Parkland LCA Characteristics by Susceptibility Criteria (continued)

Criterion	
Visual characteristics including skyline	*'long / framed views'* *'Intermittent long views towards the City of Norwich and cathedral spire, particularly from the Southern Bypass which bisects this area'* *Halls and manor houses - These are frequently screened by woodland, and therefore visible only at close range*
Intactness	*'The parkland estates, including areas of English Heritage registered historic parkland, are one of the most distinguishing features of this area. Main examples are Thickthorn Hall, Colney Hall, Intwood Hall, Keswick Hall and East Carleton Manor.*

Table 06: Yare Tributary Farmland with Parkland LCA Value Characteristics

Criterion	Commentary
Natural heritage Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest that contributes positively to the landscape	No national landscape designations. Presence of round-towered churches – Keswick Church particularly noteworthy Presence of isolated churches
Cultural heritage Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape	Registered Park and Garden of Intwood Hall. Other estate parklands
Landscape condition Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	Woodlands
Associations Landscape that is connected with notable people, events and the arts	No known associations
Distinctiveness Landscape that has a strong sense of identity	Presence of historic parkland, very characteristic, some have origins as a medieval deer park.
Recreational Landscape offering recreational opportunities where experience of landscape is important	PRoW offering some opportunities for recreation

Table 06: Yare Tributary Farmland with Parkland LCA Value Characteristics (continued)

Criterion	Commentary
Perceptual (scenic) Landscape that appeals to the senses, primarily the visual sense	Wooded appearance Attractive and impressive gatehouses and railings provide visual reference to the presence of historic Halls and parklands.
Perceptual (wildness and tranquillity) Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	No perception of wildness.
Functional Landscape that performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	Trees and small woodland blocks perform ecosystem services The north eastern edge of the LCA is overlapped by the Norwich Southern Bypass Landscape Protection Zone (NSBLPZ). This Landscape Zone has been identified where there are high levels of visual accessibility to and from the road to a predominantly open rural area that plays an important part in making the landscape setting of Norwich. Area of or including significant strategic breaks between settled areas – very important strategic gap between Hethersett and Cringleford (Norwich).
Other observations	*'Proximity to Norwich and loss of rural farmland character through expansion of the urban edge of the City beyond the Yare Valley, or development associated with the Southern Bypass/A11;* *Particular vulnerability to loss of clarity of the rural/urban divide created by the Yare Valley;* *Incremental change including upgrading of the rural land network (eg kerbing and lighting) plus isolated developments (eg institutions) resulting in a more urban character;* *A gently shelving topography from the plateau and on views making this area especially sensitive to the location of any new development / infrastructure – and potential impact on views to the City;* *Loss and degradation in the character of the historic parkland and designed landscapes, [particularly with changing uses and demands;* *Loss of mature tree boundaries (without replacement) resulting in further 'opening up' of views plus loss of woodland;* *Suburbanisation of field and parkland boundaries'*

Table 07: Wymondham Settled Plateau Farmland LCA Characteristics by Susceptibility Criteria

Criterion	
Scale	*'Large-scale, open arable fields'* *'Long views from plateau edge'*
Enclosure	*'Poor hedgerows generally, which accentuates the openness of the landscape. The resulting wide verges beside roads often contain attractive wildflowers. Some mature hedgerow trees are found, particularly besides roads, which are a distinctive feature.'*
Landform	*'Large expanses of flat landform with little variation'*
Landcover	*'Large-scale, open arable fields including sugarbeet, cereal and oilseed rape monocultures creating simple, often monotonous, character'* *'Sparsely wooded but with occasional woodland blocks, sometimes associated with former parkland areas, creating a more wooded character and wooded horizons in parts of this generally open landscape'*
Human influence	*'A settled landscape with large edge-of-plateau towns (including market towns and those of more modern origin) and villages plus, smaller, nucleated settlements which are dispersed across the plateau'* *'Vernacular buildings particularly brick built, timber-framed, and stepped gables. Some isolated churches, sometimes hidden by dense screening churchyard vegetation'*
Perceptual aspects (e.g. rural character, stillness, solitude, tranquillity, dark skies)	*'Large expanses of flat landform with little variation over long distances with strong horizons – the archetypal 'Norfolk' landscape of popular imagination.'*
Visual characteristics including skyline	*'Long views from plateau edge, including to Norwich from the northern plateau edge.'*
Intactness	*'Poor hedgerows generally. Areas of more intact hedgerow network sometimes occur around settlements. '*

Table 08: Wymondham Settled Plateau Farmland LCA Value Characteristics

Criterion	Commentary
Natural heritage Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest that contributes positively to the landscape	No national landscape designations. Areas of ancient woodland. Water bodies e.g. village pond at Mulbarton.
Cultural heritage Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape	Scheduled Ancient Monuments Presence of round-towered churches. Presence of isolated churches. Ketteringham parkland Moated structures occur around Hethel.
Landscape condition Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	Large fields denuded of hedgerow and boundary vegetation, although some retained alongside roads. Woodlands
Associations Landscape that is connected with notable people, events and the arts	Just outside of the study area, to the north of the A11 - Kett's Oak, believed to be where William Kett addressed a group of men in what was to become Kett's Rebellion.
Distinctiveness Landscape that has a strong sense of identity	Presence of historic parkland, very characteristic, some have origins as a medieval deer park.
Recreational Landscape offering recreational opportunities where experience of landscape is important	PRoW offering some opportunities for recreation

Table 08: Wymondham Settled Plateau Farmland LCA Value Characteristics (continued)

Criterion	Commentary
Perceptual (scenic) Landscape that appeals to the senses, primarily the visual sense	Wooded appearance Strong regional vernacular character, partly eroded by modern development. Distinctive plateau landscape Important views to Norwich from north of area
Perceptual (wildness and tranquillity) Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	No perception of wildness Wooded appearance
Functional Landscape that performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	Trees and small woodland blocks perform ecosystem services To Note: this study area does not extend beyond the A11, to the north of which, between Norwich, Hethersett and Wymondham is an area designated as Strategic Gap
Other observations	*'imposition of insensitive developments and tall structures such as masts/grain silos and other large scale farm or industrial/commercial buildings that break up the skyline and intrude upon the sense of openness;* *loss of vernacular character, particularly as a result of sprawl from the edge of the existing plateau top settlements;* *development that intrudes upon the view to important landmarks e.g. Wymondham Abbey or the City of Norwich;* *further "opening up" of the landscape through loss of woodland, hedgerows or hedgerow trees.*

Table 09: Poringland Settled Plateau Farmland LCA Characteristics by Susceptibility Criteria

Criterion	
Scale	*'Large scale open arable fields'* *'Long views from plateau edge'*
Enclosure	*'Large scale open arable fields'* *'Long views from plateau edge'*
Landform	*'Flat landscape, which rises to a gentle central dome, with strong open horizons'*
Landcover	*'Large scale open arable fields including sugarbeet, cereal and oilseed rape monoculture'* *'Wooded character in parts and when viewed from afar, particularly around the settlements and due to the presence of woodland blocks in the north of the character area.'*
Human influence	*'Densely settled core area, predominantly of ribbons of post-war bungalows and other development which interconnect the older village cores. These older cores have a strong vernacular appeal.'* *'Vernacular buildings present but somewhat 'diluted' by more recent development'*
Perceptual aspects (e.g. rural character, stillness, solitude, tranquillity, dark skies)	*'Recreational routeways including Boudica's Way leading to the Tas Valley'*
Visual characteristics including skyline	*'Long views from plateau edge including to Norwich from northern plateau edge and to the Tas Valley.'* *'Prominent landmark telecommunications towers (radio and radar) located at the high point of the plateau and visible from a large area of the surrounding countryside'*
Intactness	*'Poor hedgerows but wide roadside verges and numerous remnant hedgerow standards, particularly around settled areas'*

Table 10: Poringland Settled Plateau Farmland LCA Value Characteristics

Criterion	Commentary
Natural heritage Landscape with clear evidence of ecological, geological, geomorphological or physiographic interest that contributes positively to the landscape	No national landscape designations Areas of ancient woodland. Water bodies
Cultural heritage Landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape	Scheduled Ancient Monuments. Presence of round-towered churches. Presence of isolated churches.
Landscape condition Landscape which is in a good physical state both with regard to individual elements and overall landscape structure	Wide grass verges alongside roads – often wide and flowery, particularly where they are a result of hedgerow removal Good hedgerow network Mature hedgerow trees
Associations Landscape that is connected with notable people, events and the arts	Boudica Way long distance national trail cuts through the western edge of the LCA – named after the legendary warrior Queen of the Iceni whose tribes once inhabited the area, with the Venta Icenorum (marketplace of the Iceni).
Distinctiveness Landscape that has a strong sense of identity	Distinctive plateau landscape
Recreational Landscape offering recreational opportunities where experience of landscape is important	PRoW offering some opportunities for recreation

Table 10: Poringland Settled Plateau Farmland LCA Value Characteristics (continued)

Criterion	Commentary
Perceptual (scenic) Landscape that appeals to the senses, primarily the visual sense	Wooded appearance – large mixed coniferous-deciduous blocks Strong regional vernacular character. Moats present Important views to and from Norwich – telecommunications towers are distinct local landmarks.
Perceptual (wildness and tranquillity) Landscape with a strong perceptual value notably wildness, tranquillity and/or dark skies	No perception of wildness. Reduced levels of tranquillity near settlements.
Functional Landscape that performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape	Area of or including significant strategic breaks between settled areas. Drainage ditches
Other observations	*'Further ribbon development along the rural lanes would blur the distinction between individual settlements;* *Developments that intrude upon plateau edge views either from the plateau or visible from the surrounding countryside, particularly the visually sensitive area between the plateau and the city of Norwich;* *Developments that impact upon or intrude upon the setting or views from recreational routes;* *Location of further tall structures such as communications towers which would break the skyline and would adversely affect the perception of a rural hinterland to the city of Norwich;* *Further opening up of the landscape through loss of woodland, hedgerows or hedgerow trees;* *Improvement of remaining rural lanes including kerbing, lighting or loss of verges.'*