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

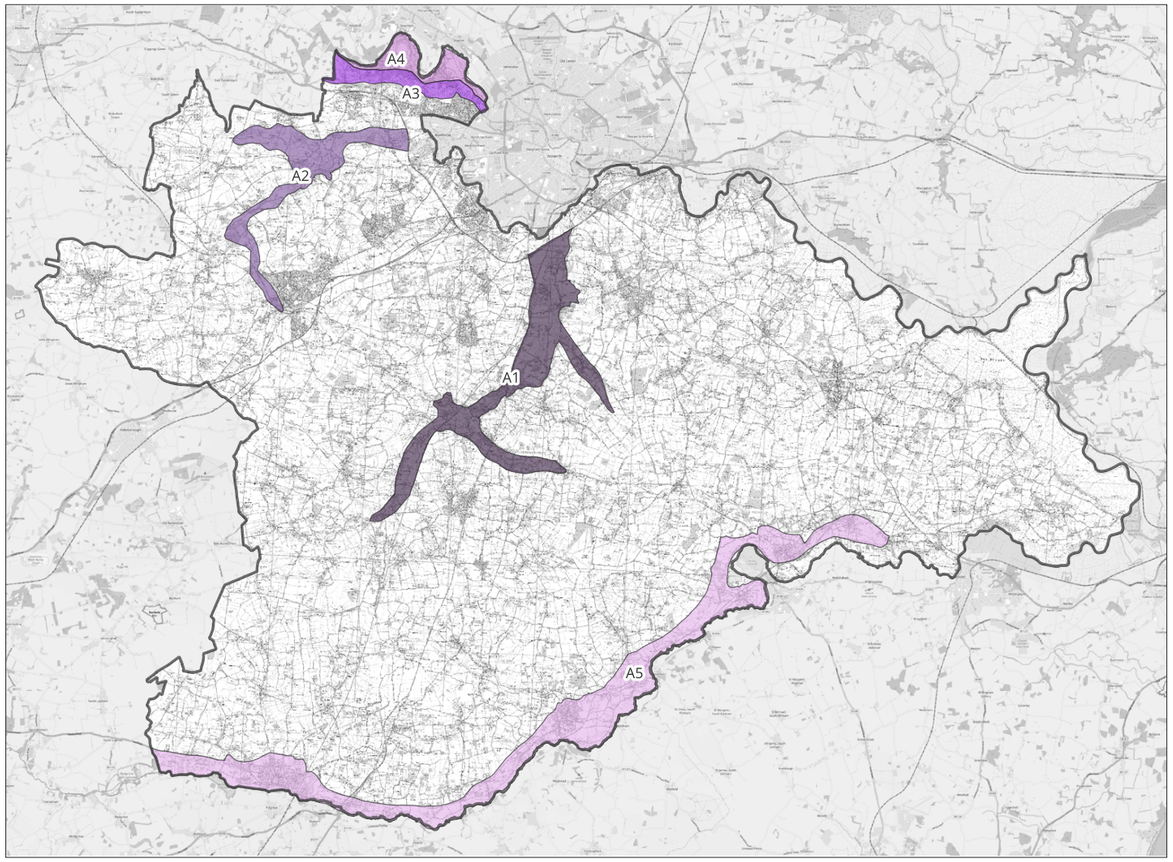
The Rural River Valley Landscape Type is very important in giving spatial definition to and creating variety within the South Norfolk Landscape.

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

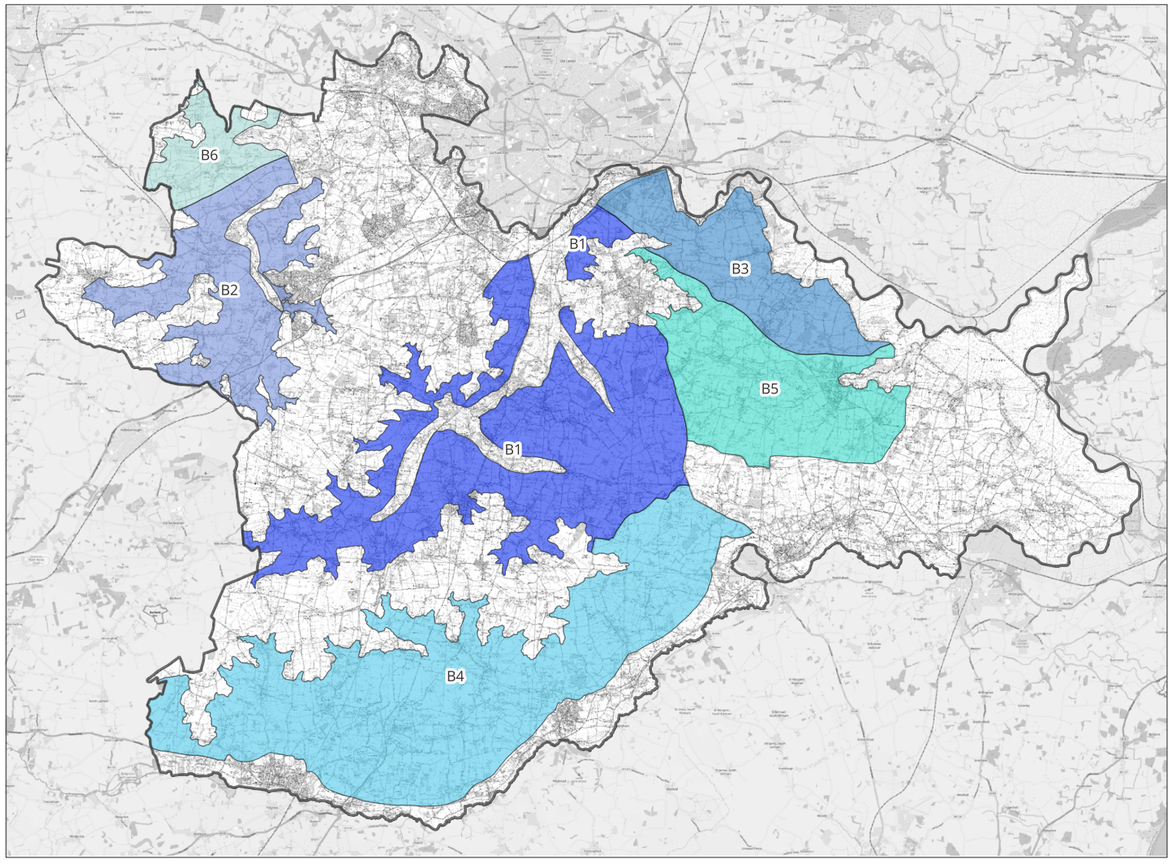
Overall susceptibility	Substation
LCA A4: **Wensum Rural River Valley**	**High** • The strong sense of place is vulnerable to generic forms of development, including substations, and the sense of tranquillity would also be negatively affected by this type of development. The high scenic quality of the 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

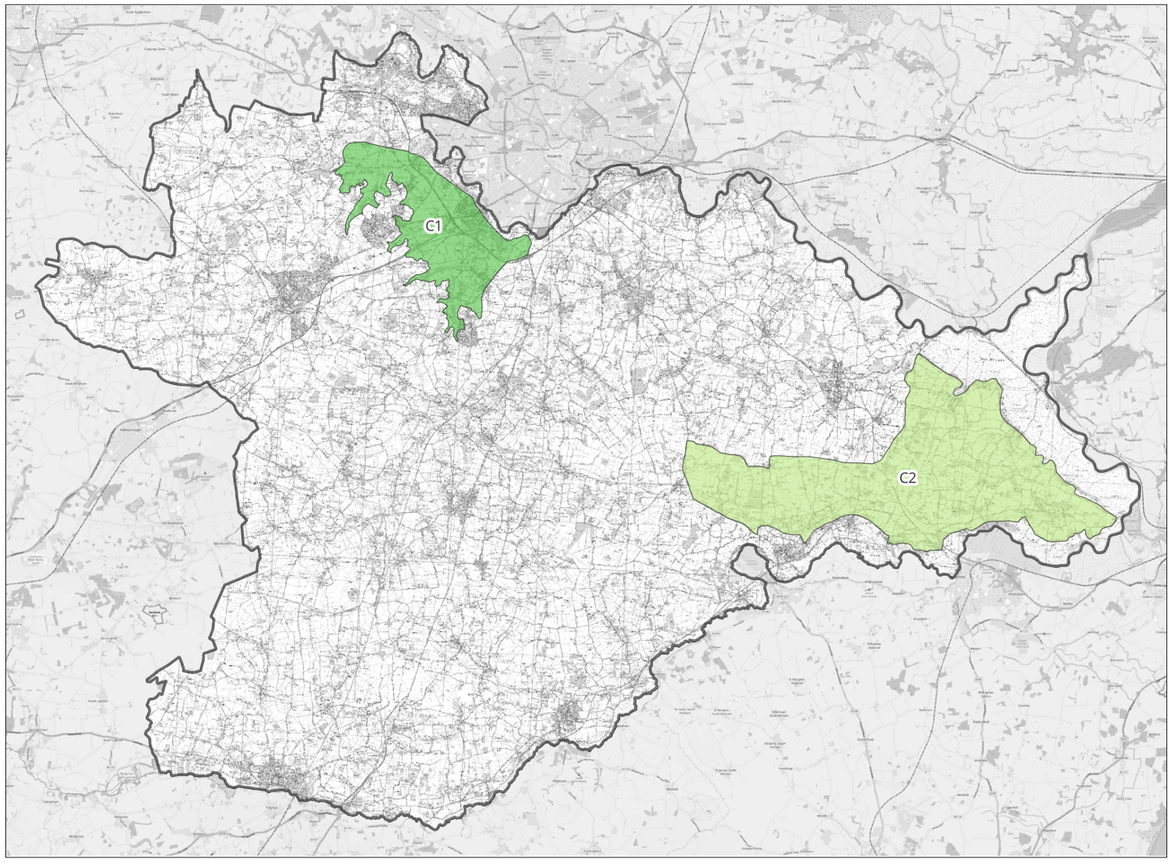
The Tributary Farmland with Parkland Landscape Type occupies two discrete areas of landscape, one in the east and one towards the north of the district. It shares many of the characteristics of the Tributary Farmland Landscape Type. This type differs due to the presence of parklands which create a very 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

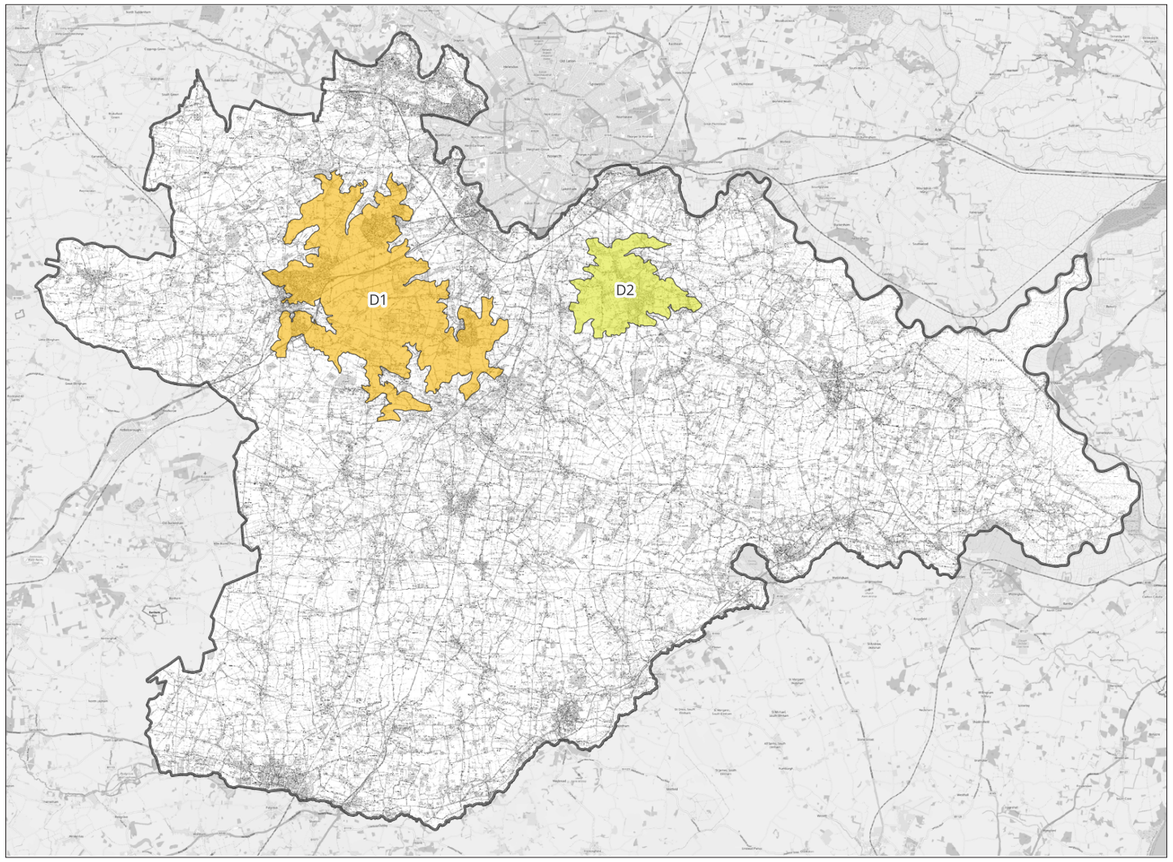
There are two areas of the Settled Plateau Farmland Landscape Type, one to the east and one to the west of the Tas Valley around the settlements of Wymondham and Poringland respectively. The Settled Plateau Farmlands have been defined by virtue of their elevation, topography and settlement pattern. The 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

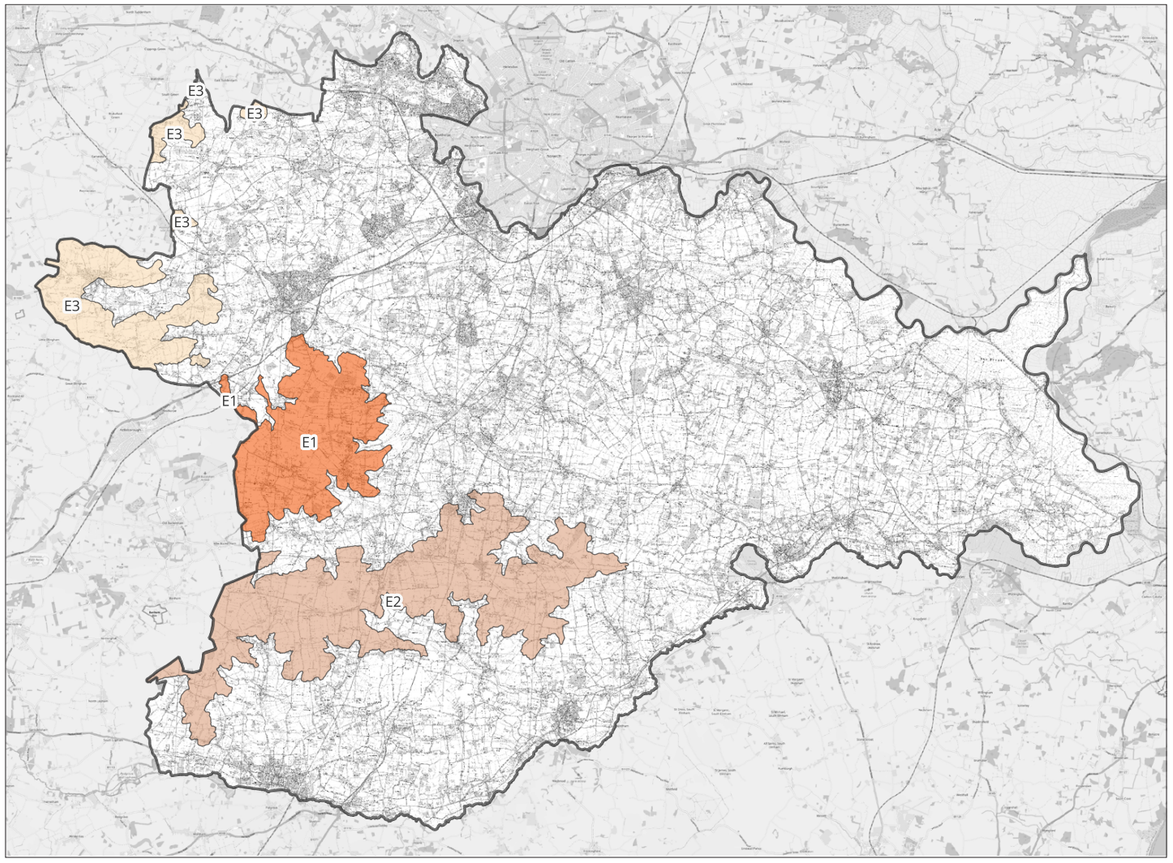
Overall susceptibility	Substations
LCA D1: **Wymondham Settled Plateau Farmland**	**Varying from Medium to Medium-High** • Considering the scale of the landscape and the presence of a certain amount of settlement already the susceptibility is generally Medium. The plateau edges are however more sensitive 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

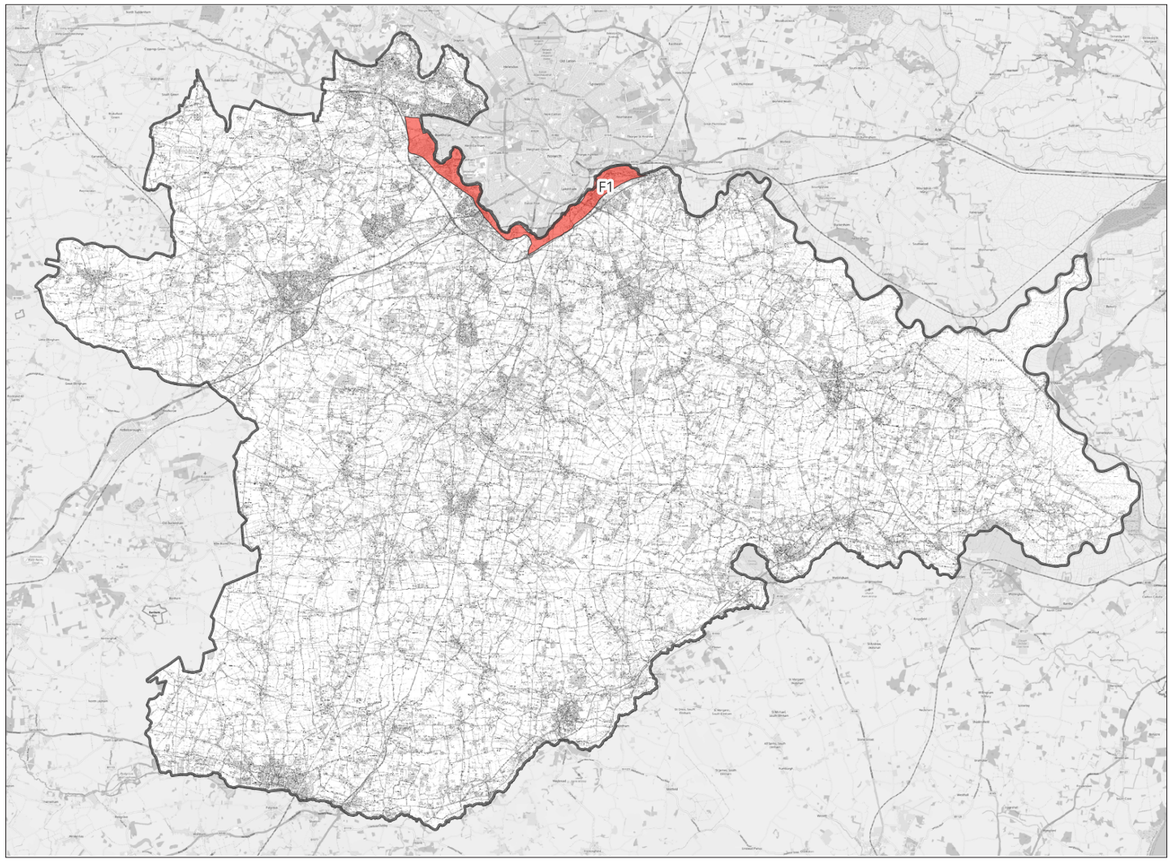
The Valley Urban Fringe Landscape Type is found in only one area: the Yare Valley which is found near the perimeter of the City of Norwich. In South Norfolk District, it is represented by a narrow band, with a large proportion of the landscape type extending beyond the district boundary into the area 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

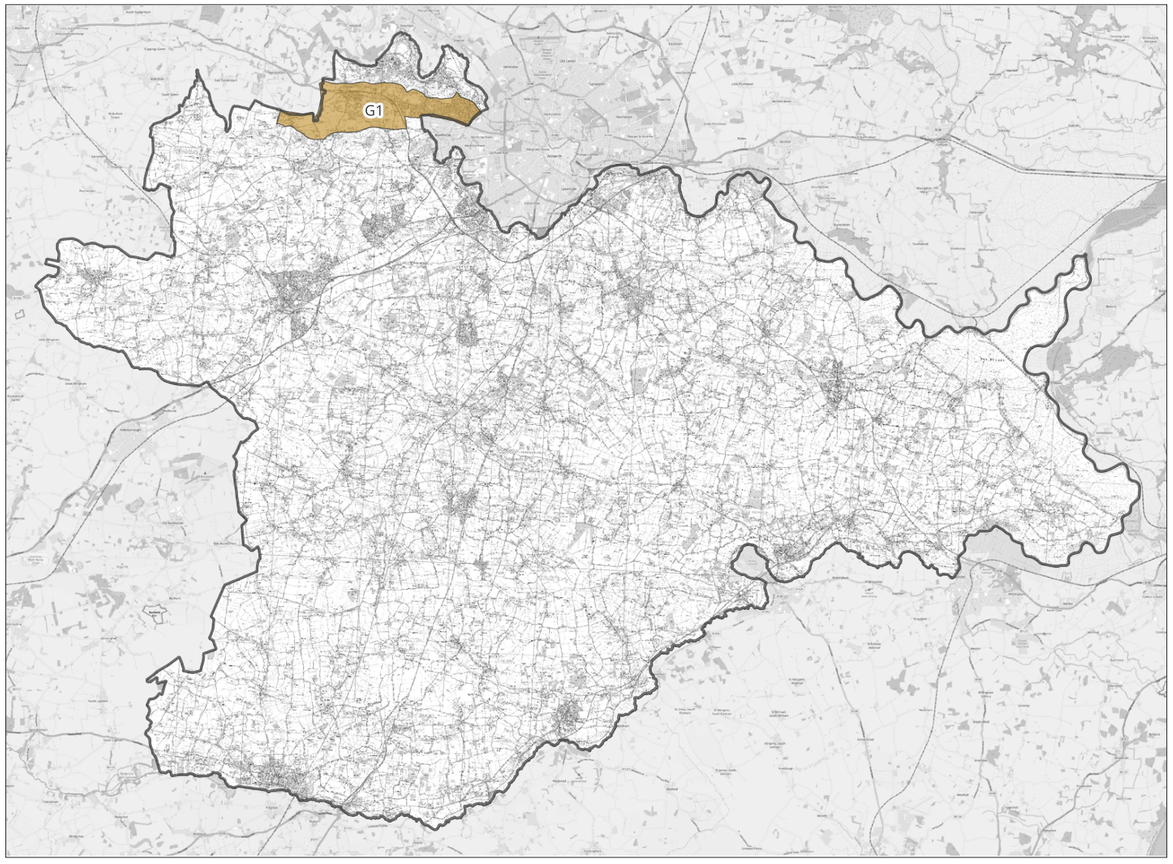
Fringe Farmland is located in one area, found to the west of Norwich, occupying a broad linear strip adjacent to the Norwich Southern Bypass. The boundary of this area is distinguished by the woodlands at the periphery of the Tud valley to the north of the area and the rural river valley of the Yare 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.