

Open Report on behalf of Andy Gutherson - Executive Director for Place

Report to:	Planning and Regulation Committee
Date:	4 December 2023
Subject:	Application by West Burton Solar Project for a Development Consent Order to install solar PV panels to generate upto 480MW of power and on site battery storage with 20MW/h capacity and associated infrastructure including battery energy storage system, access provision and an underground 400kV electrical connection to the National Grid Substation at West Burton Power Station.

Summary:

An 60 year Development Consent Order (DCO) for the construction, operation and maintenance of an energy solar park is sought covering 3 separate land parcels covering approximately 760 ha that would produce 480MW of energy to be transferred to West Burton Sub Station via underground cable, on land to the north of Saxilby and south of Marton. The Council is required to provide its comments on this application to the Examining Authority who will following a six month examination make a recommendation to the Secretary of State for Energy Security and Net Zero as to whether the Development Consent Order should be granted or not.

The Council is required to engage in the process by proving confirmation of its views on the proposal and this report sets out the matters the Council is required to provide written comment on.

Recommendation:

That the Committee resolves to inform the Examining Authority of the Council's objection to the Development Consent Order application.

The Application

1. The Applicant is seeking development consent for the construction, operation and maintenance of an energy solar park close to the settlements of Saxilby Marton and Torksey in West Lindsey and the Council is required to provide its written comments about the application to the Examining Authority who will following a

six month examination make a recommendation to the Secretary of State for Energy Security and Net Zero as to whether the Development Consent Order should be granted or not. The Local Impact Report that was brought to and approved by the Committee in November provides the evidence to support the Council's formal objection to the application.

2. The Council is not the determining Authority for the proposal; this is because West Burton Solar Project is proposed to have a generating capacity exceeding 50 MW (stated to be 480MW) and, as such, is classified as a Nationally Significant Infrastructure Project (NSIP). This means that, to gain permission to build the project, the developer is required to submit a Development Consent Order (DCO) application to the Planning Inspectorate (PINS) which will be considered by a panel of independent Inspectors (the Examining Authority – ExA).
3. A DCO application for the project was made on in February 2023, and PINS confirmed that they accepted the application for examination in March 2023. Following the pre-examination period, PINS issued a 'Rule 6' letter in October 2023 which sets out the examination timetable and includes various deadlines for submission of information.
4. The Planning Inspectorate has six months to carry out the examination which started on 8th November 2023. During this stage Interested Parties who have registered by making a Relevant Representation are invited to provide more detail of their views in writing. Careful consideration is given by the Examining Authority to all the important and relevant matters including the representations of all Interested Parties, any supporting evidence submitted and answers provided to the Examining Authority's questions set out in writing or posed at hearings.
5. Following examination, the ExA must prepare a report on the application to the relevant Secretary of State, including a recommendation, within three months of the close of the Examination stage. The relevant Secretary of State then has a further three months to make the decision on whether to grant or refuse development consent.
6. As a host authority, the Council are requested to submit a Local Impact Report (LIR) and Written Representation to the ExA. The written submissions form the Council's formal response to the West Burton DCO application. A series of hearings, as set-out in the examination timetable on specific issues, are scheduled to take place over the coming months, up to May 2024 when the examination period is scheduled to close.
7. Written Representations can cover any matters relevant to the proposal. The Planning Inspectorate advise that Interested Parties must identify those parts of the application with which they agree and those parts with which they do not agree, and explain the reasons why. This is what the Councils Local Impact Report has done. This written response is the opportunity for the Council to set-out its overall position on the application.

8. Officers of LCC have engaged with the applicants throughout the pre-application stage and worked with the other host local authority, West Lindsey District Council. Both local authorities will be submitting their own Local Impact Report (LIR) and Written Representation to ensure that the ExA is aware of the matters of concern to each authority.

Proposed Development

9. The Scheme will comprise the construction, operation, maintenance, and decommissioning of ground mounted solar photovoltaic (PV) generating stations with accompanying grid connection infrastructure and energy storage, as well as cable route corridors. The total capacity of the stations exceeds 50 megawatts and the scheme overall will have an anticipated operation life of 60 years.
10. The land within the Order limits is partly contained within areas governed by Lincolnshire County Council (LCC) and within the lower tier council area of West Lindsey District Council (WLDC), who will both act as the host authorities for the development. The remaining land within the order limits is contained within Nottinghamshire County Council (NCC) and the lower tier council area of Bassetlaw District Council (BDC), who will also act as host authorities.
11. The development's Order Limits consist of three separate sites: West Burton 1, West Burton 2, and West Burton 3. These sites, along with their associated substations and energy storage, will be connected to the National Grid at West Burton Power Station. The Scheme will connect to the National Grid substation via a new 400kV substation constructed as part of the Scheme to provide the connections to the various solar Sites. The substations, cable connections and energy storage will be required for the duration of the Scheme.
12. The substations and energy storage will be decommissioned and removed at the end of the lifetime of the Scheme (60 years) but the underground cables are anticipated to be decommissioned in situ to minimise environmental impacts.

Description of the area

West Burton 1

13. West Burton 1 totals an area of 91.32 ha and is located to the east of Broxholme with the village of Bransby to the northwest, being contained within the parishes of Broxholme and Scampton. The developable area containing solar panels, substation, and associated infrastructure totals 73.51ha. The remaining area is set aside for landscape and ecological mitigation.
14. The site consists almost entirely of agricultural fields used for arable crops and grazing, with a relatively flat topography and effective screening from the immediate surroundings by tall hedges around its boundaries. The fields are

generally large and typically have dividing hedgerows, with some isolated trees existing outside of the field margins. There are several existing farm access tracks and field accesses within the Site, and part of the Site adjoins the bank of a watercourse that drains into the River Till. Overhead lines cross part of West Burton 1. The site is traversed by Main Street, a public highway linking Broxholme village and Tillbridge Lane.

15. There are no Listed Buildings or Scheduled Monuments within the Site and it is not within a Conservation Area. There are no Statutory or Non-Statutory ecological designations or Ancient Woodland on the Site, and the site does not include nationally designated landscape or West Lindsey Area of Great Landscape Value (AGLV).
16. The surrounding area is predominantly arable farmland, interspersed with a significant number of woodland blocks. Immediately to the east of the Site is North Carlton Covert, a small block of woodland immediately adjacent to the Site's eastern boundary. The nearest settlement is the small village of Broxholme located immediately to the southwest of the Scheme. To the west lie the hamlets of Bransby and Ingleby and to the east lies the village of North Carlton. Except for the villages/hamlets mentioned above, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside.

West Burton 2

17. West Burton 2 sits to the west of West Burton 1 and is located to the north of the village of Saxilby. It lies within the parish of Saxilby with Ingleby and covers an area of 306.98ha. The developable area containing solar panels, substation, and associated infrastructure totals 149.62ha. The remaining area is set aside for landscape and ecological mitigation.
18. The Site at West Burton 2 consists almost entirely of agricultural fields used for arable crops. The topography is relatively flat and is predominantly well screened from its immediate surroundings by tall hedges around the boundaries. The fields are generally large and typically have dividing hedgerows. There are only isolated trees outside of field margins. There are a number of existing farm access tracks and field accesses within the Site. Part of the Site adjoins the bank of the River Till. Overhead lines cross part of the landholding. The B1241 Saxilby Road/Sturton Road runs north/south through West Burton 2. In the south-eastern corner of the holding, Broxholme Lane cuts across the land in an east/west direction.
19. There are no Listed Buildings or Scheduled Monuments within the Site and it is not within a Conservation Area. There are no Statutory or Non-Statutory ecological designations or Ancient Woodland on the Site. The Site does not include nationally designated landscape or West Lindsey Area of Great Landscape Value (AGLV).

20. The surrounding area is predominantly arable farmland, interspersed with farms and villages, alongside the larger settlements of Saxilby and Sturton by Stow. The landform is relatively flat with a gentle slope to the east towards the River Till. Around 2.5km to the northwest of the Site lies the settlement of Sturton by Stow and the larger village of Saxilby is located approximately 2.5km to the southwest of the Site. To the west lie the hamlets of Bransby and Ingleby and to the east lies the village of North Carlton. With the exception of these villages/hamlets, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. The landform within the surrounding area is relatively flat with a gentle slope to the east towards the River Till.

West Burton 3

21. West Burton 3 sits to the north west of West Burton 2 and is located between the villages of Brampton and Marton within the parishes of Marton, Brampton and Stow. It covers an area of 370.78ha. The developable area containing solar panels, substation and associated infrastructure totals 284.31ha. The remaining area is set aside for landscape and ecological mitigation.
22. The Site at West Burton 3 consists almost entirely of agricultural fields used for arable crops. The topography is relatively flat and is predominantly well screened from its immediate surroundings by tall hedges around the boundaries. The fields are generally large and typically have dividing hedgerows. There are only isolated trees outside of field margins. There are a number of existing farm access tracks and field accesses within the Site and a redundant farmhouse which will remain and is not proposed to be redeveloped. The A1500 Stow Park Road/Till Bridge Lane runs along the northern boundary of West Burton 3. Cowdale Lane runs along the southern boundary. A section of public footpath Marton/68/1 runs though the northwest corner of the Site. The railway line between Lincoln and Gainsborough runs north-south between land parcels comprising the West Burton 3 Site.
23. The surrounding area is predominantly arable farmland. A Golf Club is located to the southwest of the Site, surrounding the small hamlet of Brampton. A small number of residential properties on the eastern edge of the settlement are located adjacent to the southwestern corner of the Site. Located within the middle of the Site and straddling the railway line are Stow Park Farm and Marton Moor Farm, two large farmsteads with associated outbuildings and sheds that occupy the arable farmland to the south of the A1500.

Cable Route Corridor

24. The Sites are to be connected to each other and to the grid connection point by some 21.3km of high voltage cable routes. The cables run from West Burton 1 and 2 into West Burton 3 where the 400kV substation will be located. From there a 400kV cable runs to the Point of Connection (POC) at West Burton Power Station.

25. The Cable Route Corridor crosses predominantly agricultural land, taking care to avoid unnecessary disruption or severance of land or ecological features. The cable will need to cross a number of key obstacles via the use of horizontal directional drilling. The main drilling sites will be located where the cable needs to cross the River Till and the River Trent. Smaller drilling sections may be required for crossing other features such as roads and ditches. The cable route avoids villages such as Sturton Le Steeple and Marton.
26. The application documents have been consulted internally and with Landscape Visual Impact and Agricultural Land Use Consultants appointed by the Council to review the application as set out below:
- Minerals and Waste Policy Team - as Minerals and Waste Planning Authority for Lincolnshire;
 - Highways and Transportation - as Local Highways Authority for Lincolnshire;
 - Public Rights of Way - as Local Highways Authority;
 - Surface Water Flooding and Drainage - as Lead Local Flood Authority for Lincolnshire;
 - Lincolnshire Fire and Rescue;
 - Public Health;
 - Cultural Heritage; and
 - Socio economics and Land Use.
27. (a) **Minerals and Waste Policy Team (Lincolnshire County Council)** – Chapter 12 (Minerals) of the submitted ES and other relevant documents have been reviewed for the PV sites, only a very small part of just one of the sites affects safeguarded mineral resources, and due to the nature of the proposals the Council remain satisfied that sterilisation would be negligible. As before, there are no existing/allocated mineral sites in proximity to any of the PV sites so again, no safeguarding implications.

Regarding the cable route corridors, these have been refined since the Preliminary Environmental Impact Report has been produced, and it is noted that, as set out in the ES, “the Cable Route Corridor has been designed so that wherever possible cable routes follow existing infrastructure corridors or alternatively follow the edge of significant landscape features rather than directly crossing open fields. Such an approach avoids creating a further obstruction to the future exploitation of the mineral resource.” this approach aligns with our previous discussions with the developer. It is also noted that the proposed cable route in the vicinity of the river Trent overlaps with those of other proposed solar projects in the area, therefore minimising cumulative impact on the safeguarded mineral resources in this area.

The Council therefore have no mineral safeguarding objections to the proposals and therefore the impacts on the minerals resource is assessed as neutral.

In respect of Policy W1 which requires the Council to make provision for sites to meet predicted future capacity gaps for waste arisings. Currently there are no waste facilities to process discarded solar infrastructure as it is replaced during the lifetime of the development and at the decommissioning stage. When combined with the other solar projects in the County that may be granted DCOs in the next twelve months this will present an issue that will need additional facilities to ensure these products are sustainably disposed of. Therefore, it will be necessary for a requirement to be imposed on any DCO permitted that requires a waste management strategy to be submitted which demonstrates the expected quantity of solar infrastructure that will be discarded during the operational and decommissioning phases and the arrangements to be put in to ensure adequate facilities are available to sustainably dispose/recycle these items in the future. The Council does however wish to draw the ExA attention to the point relating to not just the predicted decommissioning GHG emissions associated with the recycling or disposal of components and panels at specialist disposal facilities but also the need for replacement infrastructure during the lifetime of the development and could result in the infrastructure being replaced at least once during the life time of the development. Therefore, in this regard it is assessed as not meeting the requirements of Policy W1 and further information is required to demonstrate how discarded infrastructure and materials will be sustainably managed.

- (b) **Highways and Transportation (Lincolnshire County Council)** – The Highway Authority has concerns regarding the access route proposed for West Burton 1. This is proposed to use around 1.2km of the unclassified road south of the A1500 (Figure 6.1 of Transport Assessment(TA)). The number of daily vehicles using this, associated with the development, would be five HGVs and 23 Cars. This is in addition to the surveyed flows of around 200 existing daily vehicles on this route.

This road is a single track road around 3m in width, passing cars need to use the verge and for cars passing HGVs it is problematic. The road is also not straight with several sharp bends over this short length. Section 7 of the Transport Assessment(TA) proposes this same route for abnormal loads, with vehicles of 100 tonnes and 36m in length using this route.

The TA suggest in Para 8.6 that temporary passing bays will be created on narrower sections of the highway and the DCO would allow powers to make adjustments in the highway verge.

It is recommended that for construction traffic, the applicant needs to identify where passing bays will be located on this route, there should be at least one bay on each straight section of the route, making around three bays over the 1.2km section. The proposed access points (Access 1 and 2) are to be at existing field accesses which are located on the bends. Layouts of the

access junctions need preparing with swept paths for HGVs to show that two way movements can occur and the extent of the junction improvements necessary.

It is not considered that this highway is suitable for abnormal loads of 100 tonnes and 36m in length. The road is a rural lane which is not constructed for these loads and the width and alignment would prohibit such a large vehicle using this route. The Wynn Report included in the Appendix to the TA shows the route in Appendix 1 and drawing number 22-1062.SPA04 shows road widening necessary on first bend - this involves land outside the highway boundary and the widening required on the next bend (about 450m to the west) has not been shown although the abnormal load would need to go further west to reach the first access into the site. There is no evidence provided that the road construction is capable of taking this abnormal load.

In addition it is necessary to ensure that the DCO provides a mechanism for the Highway Authority to review and provide the necessary specification for works in the Highway that would normally be captured via a Section 278 Agreement and the mechanism as how this will be achieved is still under discussion in the drafting of the DCO. At this stage however, the Council concludes that traffic and transport impacts during the construction, operation, and decommissioning have not been adequately mitigated and a highway objection is raised.

- (c) **Public Rights of Way as Local Highway Authority (Lincolnshire County Council)** – Welcome the approach to undertaking works overnight as detailed in 3.8 of the Outline Public Footpaths Management Plan (OPMP), and will remaining open and managed during the day, as this will minimise the impact to the public.

There are no details of the path surface specification within the OPMP, it would be helpful to have this detailed for clarity.

Much of the processes and procedures could form part of the rights of way management plan under Section 18 of the dDCO; for the temporary closures, there does not appear to be any notice periods or time frames for diversions and closures included in Article 11 or the OPMP. It is noted a lot of use of the word “reasonable”, which gives uncertainty as it is undefined and ripe for argument. It would be best to avoid any potential for disagreement in the future. “Reasonable time” for closure is not defined and it would be good to have better clarity here. It is also not clear what the trigger points for temporary diversions/closures would be as the wording is that the undertaker “may” close/divert the paths rather than “will”. The Council suggests that the Road Traffic Regulation Act 1984 is used instead which provides a solid notice period and controlled process for closure, a defined limit (6 months), with options to go to the Secretary of State. Alternatively, a

similar process should be written into the DCO if the developer does not wish to separately apply for a temporary closure etc.

Records shows that there are a number of routes within or close to the Order limits which are claimed paths and if these claims are successful this will have the potential to impact on the development if not addressed in the DCO.

Broxholm PF196 crosses the blue land and should be retained/reserved upon completion of the construction. Agree the proposed diversion in Schedule 6 of the dDCO as a mitigation measure instead of a closure, however the area marked as a potential diversion area is very large. It would be good to get some agreement here over what the diversion will be, or at least to agree that the diversion needs to be the shortest route practicable and conforms the general desire line.

There is potential for Codder Lane Belt to be an historic highway. It was originally listed as an unclassified road 1920's hand-over map, but this has since been omitted from later incarnations of the list of streets. There is potential that this lane may be subject to a claim for future public rights. The lane itself offers strategic potential to the network, offering a link between existing recognised highways. There is potential for this to be dedicated as a highway as part of the scheme as a potential enhancement.

Morton PF68 crosses pink land, and it is considered that there is an opportunity to improve the right of way as part of this development by a permanent diversion to the north.

Tillbridge Lane/Stow Park Road is not inviting for onward pedestrian journeys and the termination point of PF68 ends on a busy and fast A road with no ongoing right of way to the north. A permanent diversion of the path alongside the field edge would reposition the termination point of the path to the 30mph speed restricted part of the road and create a short circular route for residents in Marton and make the path much more attractive and useful. This would also avoid the need for temporary diversion or closure of the path. Some consideration as to the surface of the diverted section of the path would be required, however, this would be less substantial than anything needed for a temporary diversion.

Regarding the temporary diversion itself, similar to what was stated above, agree with the proposed diversion in Schedule 6 of the dDCO as a mitigation measure for the route instead of a closure, however, would recommend that the diversion area is to the north rather than to the south of the route. The area marked as a potential diversion area is also similarly very large. It would be good to get some agreement here over what the diversion will be, or at least to agree that the diversion needs to be the shortest route practicable and conforms to the general desire line.

Brampton PF66/Morton PF66 crosses blue land and should be retained/reserved upon completion of the construction. Level of usage is unknown without census data, but the existence of a footway on the A156 Gainsborough Road back to the village makes this a credibly valued daily circular walk. The existence of a car parking option at Gainsborough Road would see drive to dog walk use being foreseeable.

Have concerns about this route being proposed to be temporarily stopped up under the dDCO without a corresponding alternative diverted route as it is likely to be a popular route. Suggest that the temporary stopping up is reconsidered, or an alternative diverted route be planned as part of the construction works.

Possible Future Claimed Paths

There are no current applications to add a path to the definitive map over the land identified for the proposed development, however, there is potential for future applications to be made, which may impact the development in the future. At this stage the Council are not able to assess any merits of any potential future application or any strategic benefits and accordingly the Council cannot currently advise the best and most acceptable approach towards these.

Whilst there are opportunities for positive impacts associated with the enhancements to existing footpath network there are currently some unresolved issues regarding the necessary works and reinstatement to the existing public footpath network and until these matters are resolved it is considered that the impact on Public Rights of Way have not been appropriately mitigate and an objection is lodged at this time.

- (d) **Lead Local Flood Authority (Lincolnshire County Council)** – A Flood Risk Assessment (FRA) has been prepared and submitted as part of the DCO application documentation and the FRA concludes that the majority of the development is proposed outside areas with a risk of flooding and where development is proposed in areas susceptible to flooding there may be a requirement for mitigation measures to ensure no detrimental effect to flooding potential within or from the affected watercourses in the catchment once the scheme is operational.

The Council, as Lead Local Flood Authority for Lincolnshire concludes that the surface water Flood Risk is appropriately addressed at this outline stage in the ES; and suitable mitigation measures proposed in the CEMP. The surface water drainage strategy is appropriate for the development and can be subject of a requirement for the details. The dDCO includes appropriate requirements requiring detailed design approval of access, parking, construction traffic management, drainage to be approved by the relevant planning authority prior to commencement.

The Surface Water Flood Risk is also appropriately addressed at this outline stage, more detail would be needed on areas of the site which are proposed to be made impermeable and these could be conditioned. The energy storage facility (BESS) may create a large impermeable area and drainage details in accordance with SUDs principle would be needed for this - this is not mentioned in the documents.

In summary, subject to the development being carried out as proposed within the DCO application documents and further details being agreed as part of subsequent DCO Requirements, the Council as Lead Local Flood Authority for Lincolnshire, is of the view that no objection is raised in relation to flood risk.

- (e) **Lincolnshire Fire and Rescue** – Having reviewed the Outline Battery Storage Safety Management Plan the Council is satisfied that the details meet the requirements the Council set out in Fire Safety Position statement issued at the pre-application stage of the process.

However, without further specific details, e.g. detailed plans etc., the response is based very much on the details within the document and the Fire Safety Officer reserves the right to add or amend these initial observations as more specific details of the proposed strategy to tackle a battery storage fire and detailed layout plans become available. This includes any requirement for Hazardous Substance Consent for the battery storage facility if this is considered necessary to be included in the Development Consent Order process.

In addition to make the development acceptable in relation to fire safety and risk it is necessary to include a monitoring regime of the BESS by Fire and Rescue Officers and this monitoring should be resourced through a Section 106 Agreement or protective provisions attached to the DCO. This would secure sufficient resource to enable monitoring by Fire and Rescue Officers of this development and other projects involving Battery Energy Storage Systems that are emerging in significant numbers across the County.

- (f) **Cultural Heritage (Lincolnshire County Council)** – Insufficient evaluation has been undertaken to allow for an adequate understanding of the archaeological potential and developmental impacts, or to provide the basis for reasonable mitigation to deal with the impacts of this development. Significant concerns were raised regarding the applicant's proposed approach during the pre-application stage, particularly in regard to the evaluation trenching coverage.

The applicant has failed to provide a reasonable baseline assessment of the archaeological resource and the development's impact upon it. This is contrary to relevant guidance and policy and to professional standards and it

means that at this stage any proposed mitigation is uninformed and therefore cannot be fit for purpose. Further archaeological evaluation within the red line boundary and the full cable route is necessary to understand the extent, nature and significance of surviving archaeology so that appropriate mitigation can be determined.

In summary it is considered that the approach taken has been woefully inadequate and the submission does not meet the evidential requirements as set out in the relevant policy and guidance including Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Regulation 5 (2d)), the National Planning Policy Framework and the National Planning Statement Policy EN1 (Section 5.8) which states "The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents (5.8.10)."

There is therefore a negative construction impact upon the archaeological remains in relation to the Order limits with the degree of harm as yet unquantifiable due to the insufficient evaluation undertaken so far and therefore an objection is raised on this basis.

- (g) **Growth Team (Lincolnshire County Council)** – based on the Economic impacts section of the Socio Economic chapter, from a Growth perspective, what is assessed, and the mitigation measures proposed appear reasonable.

Although what is included in the ES looks reasonable, it is expected that appropriate energy related benefits to the local communities and economy are provided.

- (h) **Agricultural Land Use Classification** – The Council has commissioned an Agricultural Land Classification specialist to review the applicants Agricultural Land Classification report. The full report is attached at Appendix A.

This report notes that previous ALC surveys locally on these soil types and similar have indicated a mixture of mainly 3a and 3b land, with some Grade 2. It is likely that the shallower and heavier soils are Grade 3b, whilst deeper soils will be Grade 3a or occasionally Grade 2.

In this case it appears that Natural England have accepted the methodology on the basis that the expected level of BMV is mostly low to moderate. The findings of the applicant's ALC report essentially identify around 75% of the site as Grade 3b. The majority of any BMV land is shown to be Grade 3a, with smaller quantities of Grades 1 and 2.

ALC Grade	Area (ha)*	%
1	17.6	2.3
2	9.5	1.3
3a	172.4	22.8
3b	557.0	73.5
Non Agricultural	1.3	0.2
Total	757.8	100

Four farm businesses are identified to manage the land within the site. All are owners of the land occupied and all own and occupy additional land outside of the site area. Each unit is described in summary with the stated impact, but that income from the solar farm would more than compensate for the loss of mainly arable farm land. The impact will be significant for each unit in different ways, with some leading to dramatic changes in the farming systems and overall operations.

The loss of otherwise productive farmland is not particularly covered in the report on the basis that the majority is not BMV. However it does represent a significant area of land particularly when considering the wider cumulative impact on farmland across Lincolnshire and the larger Gate Burton scheme locally.

This part of Lincolnshire is a mainly arable farming area with only limited sheep grazing operations. Whilst it is perfectly possible to graze the areas under and between the panels, it is unlikely to be very cost effective for a grazier. The difficulties of rounding up sheep and handling them, together with finding sick or wounded animals makes the grazier's workload harder and more complex.

As such the economics of moving sheep to and from the site will be marginal. However, most examples quoted do not charge much or anything for the grazing and this may make it sufficiently attractive for a local farmer or shepherd with a 'flying flock'.

It is clear that whilst sheep grazing notionally maintains a low level of agricultural use of the site, it is more for the convenience of maintenance than for agricultural production.

In the context of 60 year lifetime it does result in lost food production not just for 60 years but the additional time the land is out of use for construction, decommissioning and restoration of the land to arable farming.

The agricultural use of the land under panels is restricted to essentially one type of farming – grazing sheep. An outbreak of foot and mouth, or blue

tongue disease could render the site unusable for grazing. It is not practicable to take hay crops or graze cattle and so the type of agriculture is highly restricted. Possible sheep grazing is no substitute for wheat production.

The Applicant does not consider that the Scheme would result in food security impacts either alone or cumulatively.

The UK Food Security Report 2021 provides a useful reference for UK food security and is an important document providing context and crucial information for those proposing projects that take significant productive land from production

In respect of the cable routes which have not yet been fully surveyed from the maps available it seems likely that 20-60% of the cable route will be BMV, where any loss is likely to be significant. However, irrespective of the land quality issues, there will be matters of concern to farmers and landowners including:-

- Land drainage
- Weed burden
- Biosecurity for plant diseases
- Timeliness of soil stripping, storage and handling
- Compaction of subsoil
- Re-instatement to previous quality/standard

Soil structure can be significantly damaged during the construction phase of the process. There is a lot of trafficking of vehicles on the land to erect the panels and if this work is undertaken when soils are wet, there can be significant damage. Much of this damage can be remedied post construction but not all and it is possible that long term drainage issues occur on the site due to the construction.

During the construction phase many of the areas will be affected by soil and water issues. A comprehensive Soil Management Plan should be established as part of the Construction Phase, to minimise the impact on soil resources.

In conclusion for a project of this scale where the project will tie up the land for up to 60 years, there will be some impact. The area is large locally and if the quantities of BMV are as stated then the impact will still be important, even allowing for the proportion of the site that is not classed as BMV

- (i) **Director of Public Health (Lincolnshire County Council)** – is undertaking research into the potential health impacts of large scale solar farms and to identify possible links to the sites of these projects and areas of deprivation. However, this will not be available in time for the Council's written response

to the application but will be brought to the attention of the Examining Authority if concluded during the examination.

Landscape and Visual Impact

28. By reason of its mass and scale, the assessment is that the Development would lead to significant adverse effects on landscape character and visual amenity at all phases of the scheme (construction, operation year 1, operation year 15, and decommissioning). The Development has the potential to transform the local landscape by altering the character on a large scale. This landscape change also has the potential to affect wider landscape character, at a regional scale, by replacing large areas of agricultural or rural land with solar development, affecting the current open agricultural character that is identified as key defining characteristics of the area.
29. It is also concluded that the cumulative landscape and visual effects of the Development will also bring about significant landscape and visual effects, particularly when assessed alongside the proposed Gate Burton, Cottam and Tillbridge Solar schemes. The mass and scale of these projects combined would lead to adverse effects on landscape character and visual amenity over an extensive area. The landscape character of the local, and potentially regional area, may be changed completely, particularly when experienced sequentially while travelling through the landscape
30. The LVIA needs to clearly express the authors judgement about changes to the landscape and views from the implementation of the development, which is currently missing as it is contained within multiple sources relying on the reader cross referencing multiple appendices and other ES chapters and parts of the DCO application. The main LVIA chapter would benefit from being reduced in size and furnished with a clear and concise written summary of the findings. In particular, it would be useful to have the identification and clear explanation of which aspects of landscape and visual change are more important, which are not, and why they are. This should be clearly laid out using plain, easy to understand language. The examination process now provides the opportunity to develop a clearer and more succinct identification and summary of the key landscape and visual issues and effects.
31. It is therefore concluded that the development will cause negative impacts on the landscape character both individually and also negative impacts due to the cumulative impacts with the other solar projects in the area namely Gate Burton, Cottam and Tillbridge and therefore an objection is raised on this basis.

Decommissioning

32. Although the Environmental statement is based on a 40 year duration the applicant is currently seeking an 60 year permission. There will inevitably be significant improvements in the efficiency of solar panels over the lifetime of this

development and this could result in the possible reduction in the overall site area covered by panels. If the DCO is allowed it should ensure that these future technological advances are secured and built into the ongoing operation of the scheme and where panels are no longer required that the land is returned back to agricultural use or formally restored to provide wider biodiversity enhancements.

Conclusion

33. The application before the Committee today is different to planning applications the Committee normally determines as the County Council is the decision maker on minerals and waste development applications as the Minerals and Waste Planning Authority. In this case the application is made under the procedures of the 2008 Planning Act and therefore the Council's comments on the application are required to be reported to the Planning Inspectorate for consideration during the examination stage of the application. Whilst the Council can make observations on any element of the proposal this report has focused on the Council's statutory areas of responsibility.
34. The LIR which was approved at the November Committee sets out the likely issues and impacts that LCC considers will arise from the construction and operation of the West Burton Energy Project. The LIR identified positive, neutral and negative effects at this stage.
35. West Burton Energy Park , by its nature offers positive impacts in terms of the production of clean renewable energy that can deliver power to over 144,000 households each year and the transition and movement towards Net Zero, as well as the potential to deliver significant biodiversity net gain through the creation of mitigation and enhancements proposed as part of the development. There are also some limited economic benefits arising from the potential creation of employment opportunities and increased spend on local services during the construction phase however these would be time-limited and therefore need to be balanced against any negative impacts identified.
36. A number of significant impacts have been identified and these can be summarised as follows:
 - A permanent and negative impact upon the landscape character and the appearance of the area as a consequence of changes to the current arable agricultural land use. In view of the conclusions from the Council's assessment of the landscape and visual impact of the development negative impacts have been identified for the site some of which may be mitigated by the production of further evidence but the cumulative impact when combined with the other proposed solar farms in this location is negative which results in a conclusion that the scheme would be contrary to Local Plan Policies S5, S14 and S16.
 - There is a tension in relation to BMV impacts given that around 25% of the energy park site by area comprises land in Grades 1,2 or 3a and a full survey of

the cable route gas yet to be assessed but is predicted to be around 50-60% BMV. The NPSs direct that previously developed land, brownfield land, contaminated land, industrial land and non-BMV land should be developed as a preference, and where policies S14 and S67 of the CLLP seek to protect the best and most versatile agricultural land so as to preserve opportunities for food production and the continuance of the agricultural economy. A significant permanent and negative impact as a consequence of the loss of agricultural land is identified, a proportion of which is classed best and most versatile land. This loss is not only at a local level but significant when considered in-combination with the loss of land from other NSIP scale solar developments that are also being promoted and considered across Lincolnshire contrary to Policy S67.

- Negative impacts on the users of Public Rights of Way in and around the proposed development as a consequence of changes to the visual appearance of the area and views from these routes and uncertainty around the disruption that will be caused resulting from the diversion of footpaths and the re-instatement treatment proposed contrary to Policies S48 and S54.
- At this stage a highways objection is raised to the use of the highway to gain access to the construction access point for West Burton 1. It is not considered that this highway is suitable for abnormal loads of 100 tonnes and 36m in length. The road is a rural lane which is not constructed for these loads and the width and alignment would prohibit such a large vehicle using this route. For this reason there is significant issues with highway safety and therefore contrary to Local Plan Policy S47.
- Due to the level of uncertainty as a result of the restricted amount of trial trenching that has been undertaken across the Order Limits there is a distinct possibility that archaeological remains of more than local/regional significance could be disturbed and damaged. Consequently it is not possible to adequately assess the impacts on such assets and therefore the requirements of Policy S57 have not been met.
- In terms of provision of facilities to process and recycle solar panels and associated equipment once they reach the end of their useful life there is currently insufficient waste facilities to process this waste. Currently there are no waste facilities to process discarded solar infrastructure as it is replaced during the lifetime of the development and at the decommissioning stage. When combined with the other solar projects in the County that may be granted DCOs in the next twelve months this will present an issue that will need additional facilities to ensure these products are sustainably disposed of and until a satisfy mechanism is in place to address this issue an objection is raised as contrary to Minerals and Waste Local Plan policy W1

37. Overall, it is considered that the proposed development due to its overall size and scale will have a significant negative impact on the communities affected by the development.

RECOMMENDATIONS

- (A) The County Council informs the Examining Authority in its written response that whilst the project would produce clean renewable energy that would support the nations transition to a low carbon future and deliver significant biodiversity net gain benefits through the creation of mitigation and enhancements as well as other more limited positive impacts (as identified within our Local Impact Report), these positive impacts are not outweighed by the negative, some significant, impacts that arise given the overall size and scale of the development both on its own and in combination with the three other NSIP scale solar projects proposed in this geographical area as follows:
- A permanent and negative impact upon the landscape character and the appearance of the area as a consequence of changes to the current arable agricultural land use. In view of the conclusions from the Council's assessment of the landscape and visual impact of the development negative impacts have been identified for the site some of which may be mitigated by the production of further evidence but the cumulative impact when combined with the other proposed solar farms in this location is negative which results in a conclusion that the scheme would be contrary to Local Plan Policies S5, S14 and S16.
 - There is a tension in relation to BMV impacts given that around 25% of the energy park site by area comprises land in Grades 1,2 or 3a and a full survey of the cable route has yet to be assessed but is predicted to be around 50-60% BMV. The NPSs direct that previously developed land, brownfield land, contaminated land, industrial land and non-BMV land should be developed as a preference, and where policies S14 and S67 of the CLLP seek to protect the best and most versatile agricultural land so as to preserve opportunities for food production and the continuance of the agricultural economy. A significant permanent and negative impact as a consequence of the loss of agricultural land is identified, a proportion of which is classed best and most versatile land. This loss is not only at a local level but significant when considered in-combination with the loss of land from other NSIP scale solar developments that are also being promoted and considered across Lincolnshire contrary to Policy S67.
 - Negative impacts on the users of Public Rights of Way in and around the proposed development as a consequence of changes to the visual appearance of the area and views from these routes and uncertainty around the disruption that will be caused resulting from the diversion of footpaths and the re-instatement treatment proposed contrary to Policies S48 and S54.

- Due to the level of uncertainty as a result of the restricted amount of trial trenching that has been undertaken across the Order Limits there is a distinct possibility that archaeological remains of more than local/regional significance could be disturbed and damaged. Consequently it is not possible to adequately assess the impacts on such assets and therefore the requirements of Policy S57 have not been met.
- In terms of provision of facilities to process and recycle solar panels and associated equipment once they reach the end of their useful life there is currently insufficient waste facilities to process this waste. Currently there are no waste facilities to process discarded solar infrastructure as it is replaced during the lifetime of the development and at the decommissioning stage. When combined with the other solar projects in the County that may be granted DCOs in the next twelve months this will present an issue that will need additional facilities to ensure these products are sustainably disposed of and until a satisfy mechanism is in place to address this issue an objection is raised as contrary to Minerals and Waste Local Plan policy W1
- At this stage a highways objection is raised to the use of the highway to gain access to the construction access point for West Burton 1. It is not considered that this highway is suitable for abnormal loads of 100 tonnes and 36m in length. The road is a rural lane which is not constructed for these loads and the width and alignment would prohibit such a large vehicle using this route. For this reason there is significant issues with highway safety and therefore contrary to Local Plan Policy S47.
- That if the Secretary of State grants the Development Consent Order a comprehensive and appropriate package of Community Benefits is secured and delivered to compensate for the identified negative impacts that the proposed development would cause to the communities affected by this project.

Appendix

These are listed below and attached at the back of the report	
Appendix A	Soils and Agricultural Land Classification for West Burton Solar Project

Background Papers

The following background papers as defined in the Local Government Act 1972 were relied upon in the writing of this report.

Document title	Where the document can be viewed
Development Consent Documents	Nationally Significant Infrastructure Projects website https://infrastructure.planninginspectorate.gov.uk/
National Planning Policy Framework	The Government's website www.gov.uk
Lincolnshire Minerals & Waste Local Plan (2016)	Lincolnshire County Council's website www.lincolnshire.gov.uk

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**Soils and ALC West
Burton Solar Project**

**Lincolnshire County
Council**

November 2023



Contents

1. Instructions
2. Site and Proposal
3. Geology and Soils
4. Agricultural Land Classification
5. Farming Impact and Food Security
6. Cable Route; Soil and ALC Assessment
7. Cumulative Impact
8. Soil Damage During Construction

References

Biographical

Appendices

Review of ALC and Soils West Burton Solar Project

1. Instructions to Landscape

Landscape is instructed by Lincolnshire County Council to review and report on the agricultural aspects of Island Green's application for a Development Consent Order for an extensive ground mounted solar array and associated infrastructure. The proposed development occupies a total area of 758ha plus connectors and the cable routes.

A review of the grading of soils for agricultural land classification compares differences between expected grades and those found in the soils baseline. It is noted that an ALC survey has been undertaken by Amet and this report seeks to clarify the findings and set them in context.

The proposed development is likely to have a cumulative or defined negative impact that will result in the loss of agricultural production in the development area generally and/or the permanent loss of production from mostly medium quality agricultural land.

2. The Site and Proposal

The Proposed Development comprises the installation of solar photovoltaic (PV) generating modules, battery storage facilities, and grid connection infrastructure.

The site area covers approximately 758 hectares of predominately agricultural land, spread over 3 areas West Burton 1, 2 and 3 in the District of West Lindsey, with a small area in Bassetlaw District. West Burton 4 is outside of Lincolnshire. The Site boundary and land parcels are presented in **Appendix 1**. It also shows the search corridors for the underground cabling proposed.

3. Geology, Soils, parent material and soil types

Geology

The geology of the area is shown on a British Geological Map reproduced in part (**Appendix 2**) for reference. The principle underlying geology at the site is a Lower Lias Clay, Shale and Rare Limestone. The land is primarily shown as the Scunthorpe Mudstone Formation, a heavy clay-based mudstone and various smaller areas of drift, glaciofluvial deposits and diamicton.

Soils

According to available published data, local knowledge and the national soil map indicates that the area predominates with two main soil types (**Appendix 2**). In the majority is Wickham 2 (711f) with a smaller area of Dunnington Heath (572g)

These two soils are significantly different; with Wickham 2 described as slowly permeable seasonally waterlogged fine loam over clayey soils, or fine silty over clayey soils. Dunnington Heath is described as reddish coarse and fine loamy soils over clays, but also with slowly permeable subsoils and slight seasonal waterlogging. **Appendix 3** sets out a description of Wickham soil associations from Cranfield University. **711f Wickham**, is described as slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils.

Previous ALC surveys locally on these soil types and similar have indicated a mixture of mainly 3a and 3b land, with some Grade 2. It is likely that the shallower and heavier soils are Grade 3b, whilst deeper soils will be Grade 3a or occasionally Grade 2.

4. Agricultural Land Classification and Soils

The Agriculture and Soils chapter covers three issues of relevance to Agricultural Land:-

- The effects of the Scheme upon agricultural land as a resource, taking account of the land quality and versatility
- The effects of the Scheme upon the soil resource are considered.
- The effects of the Scheme upon farm businesses currently in operation upon the Site, and any effects the Scheme may have on the management of surrounding agricultural land.

The majority of the site is shown as Grade 3 on the provisional ALC maps of the area. **Appendix 2** shows the approximate location of the 3 main areas in relation to land grades.

Appendix 4 also shows the likelihood of best and most versatile land (BMV) in the general area. Large parts of the site fall within the low to medium categories, where 20-40% of the land is likely to be BMV.

The table below shows the distribution of ALC grades according to the survey undertaken by AMET, on behalf of Island Green - the applicants.

Table 1 : ALC Grade Distribution

ALC Grade	Area (ha)*	%
1	17.6	2.3
2	9.5	1.3
3a	172.4	22.8
3b	557.0	73.5
Non Agricultural	1.3	0.2
Total	757.8	100

The ALC identifies where BMV land is, and the scheme should seek to protect and minimise damage to higher grade land wherever possible in line with national planning policy. There is undoubtedly a lot of BMV land in this vicinity and only a full ALC will identify where it is and what the Grade and quality is. Laboratory analysis of representative samples has been used to determine textures of representative samples.

The ALC survey is stated as undertaken in line with the MAFF 1988 guidelines and TIN049. These documents set out the precise methodology by which the ALC survey should be undertaken, with auger bore sampling at 1-hectare intervals and a suitable number of soil pits dug to determine the precise nature of the soil(s).

In this case it appears that Natural England have accepted the methodology on the basis that the expected level of BMV is mostly low to moderate. The findings of the ALC report essentially identify around 75% of the site as Grade 3b. The majority of any BMV land is shown to be Grade 3a, with smaller quantities of Grades 1 and 2.

5. Farming Impact, Food Security and Sheep Farming

The report should address viability, infrastructure and long term consequences on the individual holding. The important considerations for economic and social effects for agriculture include:

- land use changes;
- the proportion of a holding affected by land-take;
- the effect on land management; access to land severed (particularly by linear infrastructure development); and
- the loss of farm buildings and infrastructure.

Farming and Food Production

Four farm businesses are identified to manage the land within the site. All are owners of the land occupied and all own and occupy additional land outside of the site area. Each unit is described in summary with the stated impact, but that income from the solar farm would more than compensate for the loss of mainly arable farm land. The impact will be significant for each unit in different ways, with some leading to dramatic changes in the farming systems and overall operations.

The loss of otherwise productive farmland is not particularly covered in the report on the basis that the majority is not BMV. However it does represent a significant area of land particularly when considering the wider cumulative impact on farmland across Lincolnshire and the larger Gate Burton scheme locally.

In considering the impact on the overall farming enterprises both locally and across the District or County, it may be necessary to seek additional information on the impact on the individual farms along the cable route.

In considering the impact on the overall farming enterprises both locally and across the District or County, it may be necessary to seek additional information on the impact on the individual farms themselves. This might include the loss of agri-environmental schemes, crop and livestock production, as well as the more normal range of mainly arable crops and income.

The report indicates that:

Sufficient light passes through and between the panels to maintain a grass sward. It is desirable to maintain a green cover to promote rainfall infiltration and protect the soil surface from erosion. The length of the sward will be controlled by periods of sheep grazing and/or mowing. This will also prevent the establishment of shrubs and trees.

Sheep Farming

This part of Lincolnshire is a mainly arable farming area with only limited sheep grazing operations. Whilst it is perfectly possible to graze the areas under and between the panels, it is unlikely to be very cost effective for a grazier. The difficulties of rounding up sheep and handling them, together with finding sick or wounded animals makes the grazier's workload harder and more complex.

As such the economics of moving sheep to and from the site will be marginal. However, most examples quoted do not charge much or anything for the grazing and this may make it sufficiently attractive for a local farmer or shepherd with a 'flying flock'.

It is clear that whilst sheep grazing notionally maintains a low level of agricultural use of the site, it is more for the convenience of maintenance than for agricultural production.

In the context of 40+ year lifetime it does result in lost food production not just for 40+ years but the additional time the land is out of use for construction, decommissioning and restoration of the land to arable farming.

The agricultural use of the land under panels is restricted to essentially one type of farming – grazing sheep. An outbreak of foot and mouth, or blue tongue disease could render the site unusable for grazing. It is not practicable to take hay crops or graze cattle and so the type of agriculture is highly restricted. Possible sheep grazing is no substitute for wheat production.

Land in use for solar panels is generally ineligible for the normal agricultural subsidies, such as the Basic Payment Scheme (now being phased out) and the Environmental Land Management Scheme (ELMS). It does not prevent land from being managed in similar ways, but there will be no payments available to farmers (e.g. graziers) for compliance and this could make farming less financially attractive going forward.

The site will have to be (re)seeded to grass, or species rich grassland, but this will probably occur after the panels have been sited on the land. In my experience grass does not grow well under the panels themselves. There are often areas that are dry and barren or that only host weeds species, due to heavy shading.

Food Security

The Applicant does not consider that the Scheme would result in food security impacts either alone or cumulatively. The applicant states:-

The UK annual balance of domestically produced food is sensitive to non-planning factors including weather and markets. The relevant assessment for policy purposes (and therefore decision-making purposes under the Planning Act 2008) is one that is based on the grade of the agricultural land, rather than its current use and the intensity of that use.

The UK Food Security Report 2021 provides a useful reference for UK food security and is an important document providing context and crucial information for those proposing projects that take significant productive land from production.

The recent House of Lords Inquiry on Land Use in England (published 13 December 2022) also raised a concern regarding the development of solar farms on BMV which is also relevant. The key paragraph is in respect of Para 132, which sets out the conclusions of the committee regarding solar farms on BMV land:

“Although there are provisions within the NPPF to dissuade the development of solar farms on Best and Most Versatile land, from the evidence received we are concerned that too many exceptions are being made. We believe that a consistent policy toward encouraging the installation of solar panels on industrial, commercial and domestic buildings is needed and would negate the need for large-scale ground mounted solar farms. Alongside that, we would like to see stricter regulations put in place to prevent the development of solar farms on BMV land. We also believe onshore wind turbines still have a crucial role to play in achieving national energy self-sufficiency”.

Policy Issues

Soil is a finite resource that fulfils many important functions and services (ecosystem services) for society, for example as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. Government policy is set out in Paragraph 174 of the National Planning Policy Framework (2023) which states that:

15. Conserving and enhancing the natural environment

174. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
- b) 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;*

NPS for Energy Infrastructure are published by the Department of Business, Energy and Industrial Strategy (now Department for Energy Security and Net Zero). Paragraph 5.10.8 of the adopted overarching NPS for Energy (EN-1) states:

“Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination.”

6. Cable Routes and fixed equipment

The proposed Cable Route Corridor connects the separate areas of the Sites together and to the electrical distribution grid. The cable would run below ground in a trench and sections of it may run through ducting within a shared grid connection route with other facilities. The report indicates that:-

19.3.7 The Cable Route Corridor has not yet been subject to soil survey or farming circumstances assessment. This is as the narrow cable trench will need a specific survey along its actual path to inform soil management planning of the trenching works. Detailed ALC survey of fields places sample points at 100m intervals, too widely spaced to monitor soil variation within the soil to be excavated for the trench.

19.3.8 Agricultural occupancy and land use information for the Cable Route Corridor will need to be collected ahead of trenching work to avoid, where possible, an active construction site at sensitive periods of time for land management, for instance anticipated harvest dates. Any such information collected preplanning will lose validity and need to be replaced once an approximate work start date is established post consent. Soils data gathered for ALC survey can inform soil management planning for solar development, and that soils data should also be obtained for soil management planning of the underground cabling and access routes and any permanent features such as BESS, transformers and substations.

However the ALC report has not surveyed the Cable Route(s) and only provisional ALC data and soil maps can be relied upon for guidance at this stage.

From viewing the maps included in the report it seems likely that 20-60% of the cable route will be BMV, where any loss is likely to be significant. However, irrespective of the land quality issues, there will be matters of concern to farmers and landowners including:-

- Land drainage
- Weed burden
- Biosecurity for plant diseases
- Timeliness of soil stripping, storage and handling
- Compaction of subsoil
- Re-instatement to previous quality/standard

These matters will need to be addressed if the scheme is to proceed.

The Scheme is stated to include :-

Substations and an Energy Storage System (sometimes referred to as 'BESS'), buried cabling within the sites, and other equipment and security fencing; and the buried Cable Route Corridor. The combined area of the substations and BESS will be approximately 4.27ha

7. Cumulative Impacts including District and County wide ALC

There are a number of small(er) and largescale Solar PV schemes in Lincolnshire and into Nottinghamshire, with others planned or proposed. There are five known solar project NSIP schemes; specifically in relation to impacts on agricultural land. The situation is a moving picture as new proposals come forward from time to time. Most of these sites are proposed on farmland. Lincolnshire, West Lindsey and N Kesteven in particular are agricultural areas with substantial areas of land within the Best and Most Versatile category. Much of the non BMV land will be Grades 3b and only some Grade 4 with very little Grade 5.

A county-level alternative assessment area should be applied which as a minimum should consider scope for connection into the National Grid at the locations proposed by the registered NSIP solar projects and with specific consideration of agricultural land impacts.

For a project of this scale where the project will tie up the land for up to 40 years, there will be some impact. The area is large locally and if the quantities of BMV are as stated then the impact will still be important, even allowing for less BMV.

Environmental Impact Assessments give guidance on the size and quality of Land Grade that is or can be affected by development proposals. The loss of such a large area of land would normally be considered as significant at District level, even though the use is 'temporary'. Any permanent loss of land due either to construction or through biodiversity designation may affect this assessment further.

8. Soil Damage during Construction Phase

The report indicates that:-

Assessment of Soil Resources

19.6.6 The Code of Practice for the Sustainable Use of Soils on Construction Sites recommends the use of the soil physical characteristics data, collected as part of an ALC survey, to identify topsoil and subsoil units for separate handling and beneficial reuse. This approach, used in this assessment, continues the practice that was used by the former MAFF ALC survey teams for minerals sites to advise on appropriate land restoration.

19.6.7 The ALC detailed survey data includes information on the depth, clay content and stoniness of topsoil and subsoil horizons, enabling the mapping of the extent of soil units appropriate for separate stripping, storage and beneficial reuse. Mapping of soil units would form part of a Soils Management Plan that would be secured by a Requirement of the DCO. An Outline Soil Management Plan for the site is given at Appendix 19.2 to this Chapter [EN010132/APP/WB6.3.19.2].

Soil Damage During Construction

Soil structure can be significantly damaged during the construction phase of the process. There is a lot of trafficking of vehicles on the land to erect the panels and if this work is undertaken when soils are wet, there can be significant damage. Much of this damage can be remedied post construction but not all and it is possible that long term drainage issues occur on the site due to the construction.

During the construction phase many of the areas will affect soil and water issues.

A comprehensive Soil Management Plan that should be established as part of the Construction Phase, to minimise the impact on soil resources. **Appendix 5** sets out some key issues to be included in the Soil Management Plan.

Appendix 6 shows photographs of before during and after construction of a large solar farm in Hampshire where soil structural issues were a major problem post construction. Once the panels are in place usual agricultural practices such as ploughing and subsoiling become much more difficult.

References

Land Use Sheets

Land utilisation survey of UK circa 1966 Outline land use capability map

Agricultural Land Classification Survey circa 1965 (MAFF)

Sheet 113 Lincoln

Soil Survey of England and Wales

1983 Soils of England and Wales: Sheet 4, Soils of Eastern England (Map)

1984 Soils and their Use in Eastern England (Book)

Geological Survey

OS Sheets 101 and 102 Solid and Drift Geology 1:50,000, (1996)

LANDIS Soils Data Cranfield University

National Soil Resources Institute Soils Report information

Climatological Data for Agricultural Land Classification: Meteorological Office 1989, Bracknell

Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land: Ministry of Agriculture, Fisheries and Food (MAFF) 1988, London

Technical Information Note 049 (Agricultural Land Classification) Edition 2: Natural England 2012

Soil Survey Field Handbook Describing and Sampling Soil Profiles, Technical Monograph No. 5: Soil Survey of England and Wales, 1997

Soil Classification for Soil Survey, Monographs on Soil Survey: Butler, B E (1980) Clarendon Press, Oxford

Agricultural Land Classification (England and Wales): Institute of Professional Soil Scientists working with soil professional competency scheme.

Design Manual for Roads and Bridges, Vol 11, Environmental Assessment: Highways Agency 2009

Construction Code of Practice for the Sustainable Use of Soils on Construction Sites DEFRA 2009 (*including accompanying Toolbox Talks*)

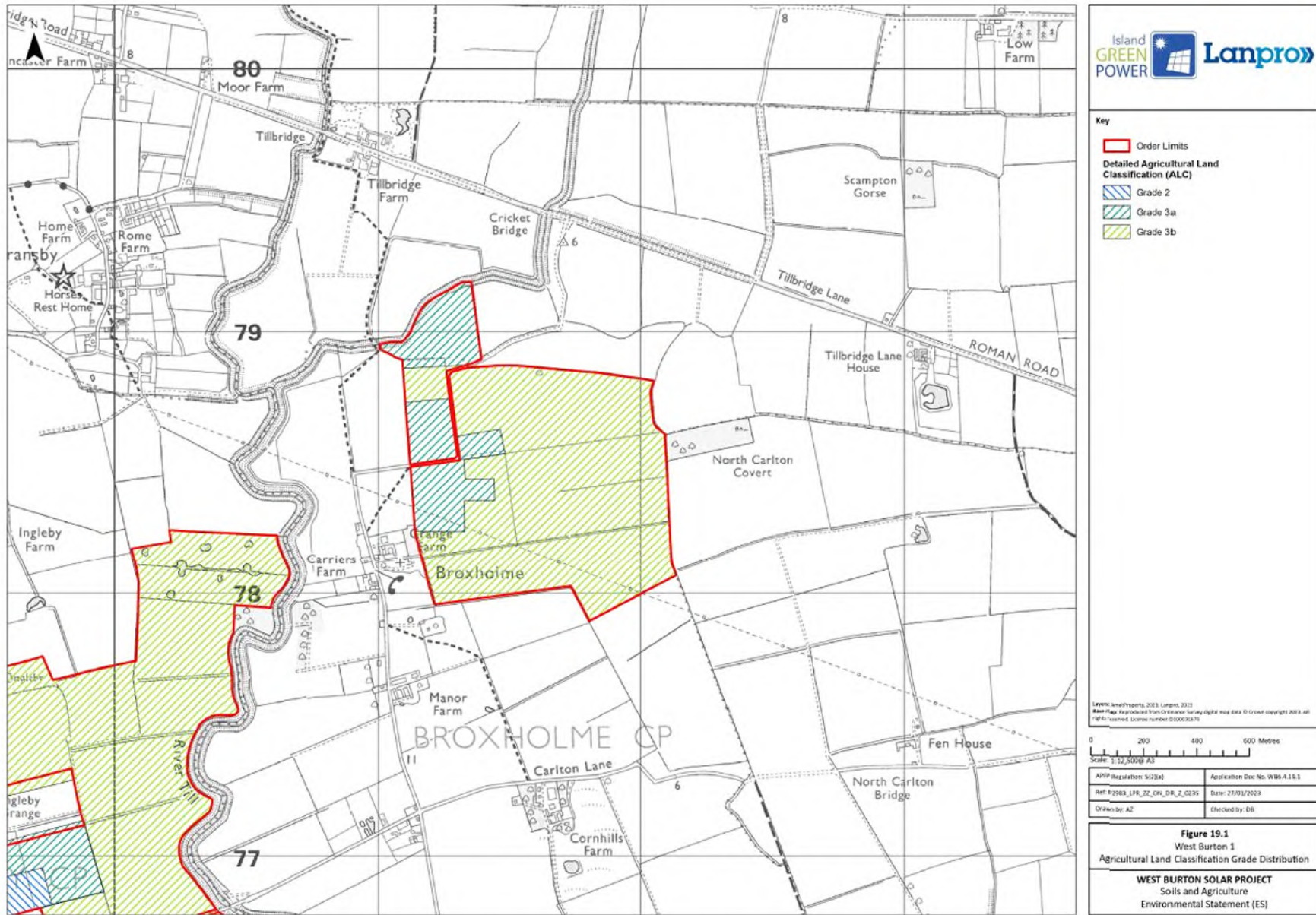
A New Perspective on Land and Soil in Environmental Impact Assessment. IEMA, February 2022.

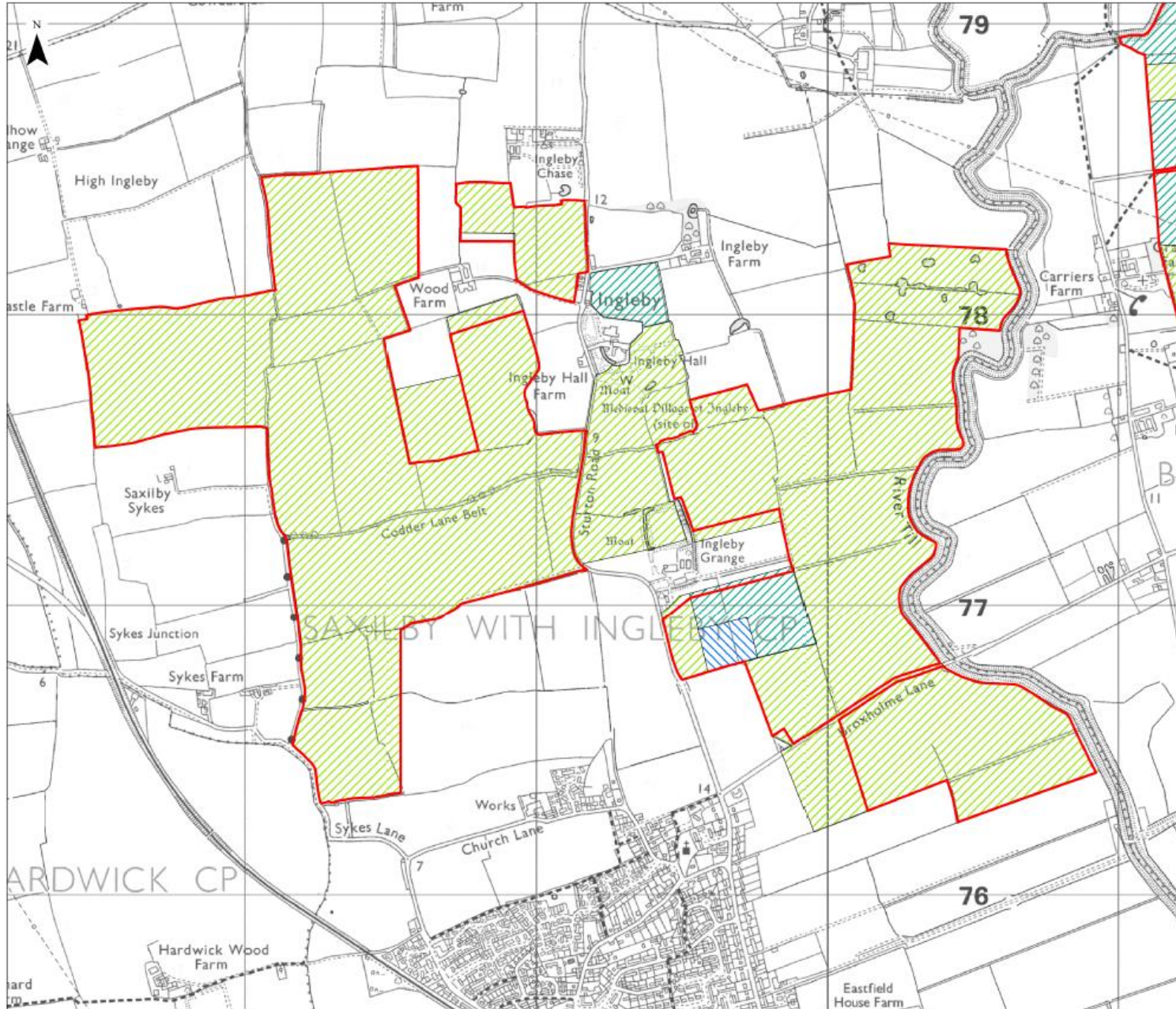
Biographical

Sam Franklin BSc (Hons) MSc MISOilSci PIEMA FBIAC

A Panel Member of the Agricultural and Land Drainage Tribunal

- Sam is a Member of the Institute of Professional Soil Scientists and a Life Member of the British Society of Soil Science. He undertakes soil survey and land management work for private clients, developers, local authorities and government agencies and has worked on soil restoration, flood risk, drainage and land improvement projects, as well as Agricultural Land Classification for roads, development sites, renewable energy projects and EIA. He has been a Professional Associate of the Institute of Environmental Assessment, since 2001.
- He has an MSc from Cranfield University, attending Cranfield advanced training in Soil Matters, Land Evaluation, Soil & Water: Principles and Management in Production Systems and soil science courses of IPSS and Lancaster University. He has given talks, demonstrations and on-farm advice on ALC, soil and water management, land drainage, rainwater harvesting and soil husbandry. Sam has worked overseas in dryland climates and is familiar with land drainage, irrigation scheduling and reservoir design.
- He is from a family farm and has a BSc (Hons) in Agriculture from Newcastle University and considerable practical, farm-based agricultural, horticultural and soils management experience gained on mixed, livestock, horticultural and arable units and international work. Sam is a Fellow of the British Institute of Agricultural Consultants (FBIAC) and holds the Royal Horticultural Society Certificate in Horticulture.
- As a qualified chartered surveyor (MRICS, FAAV) and agricultural consultant he has over 35 years of experience across a wide range of property matters including both commercial and housing planning projects, compulsory purchase, new roads, pipelines and rail projects, development land, farming, property management, renewable energy, minerals, land restoration, archaeological surveys, and EIA.
- Sam has been managing director of a surveying and rural planning business since 2001 (www.landscape.co.uk). Previous employment includes five years at the RSPB, work for other environmental and conservation organisations, regarding landscape restoration & management, habitat creation, minerals restoration and woodland management; all requiring detailed soils, water and environmental knowledge.
- He has undertaken soil and water management, soil husbandry and Catchment Sensitive Farming work for Natural England and since 2003 has given regular rural planning consultancy advice to Local Planning Authorities, mainly across southern, eastern and midland England; acting as agricultural, equestrian and rural resource expert, regularly attending planning committees, public inquiries, hearings, NSIP and examinations in public.





Key

- Order Limits
- Detailed Agricultural Land Classification (ALC)**
- Grade 2
- Grade 3a
- Grade 3b

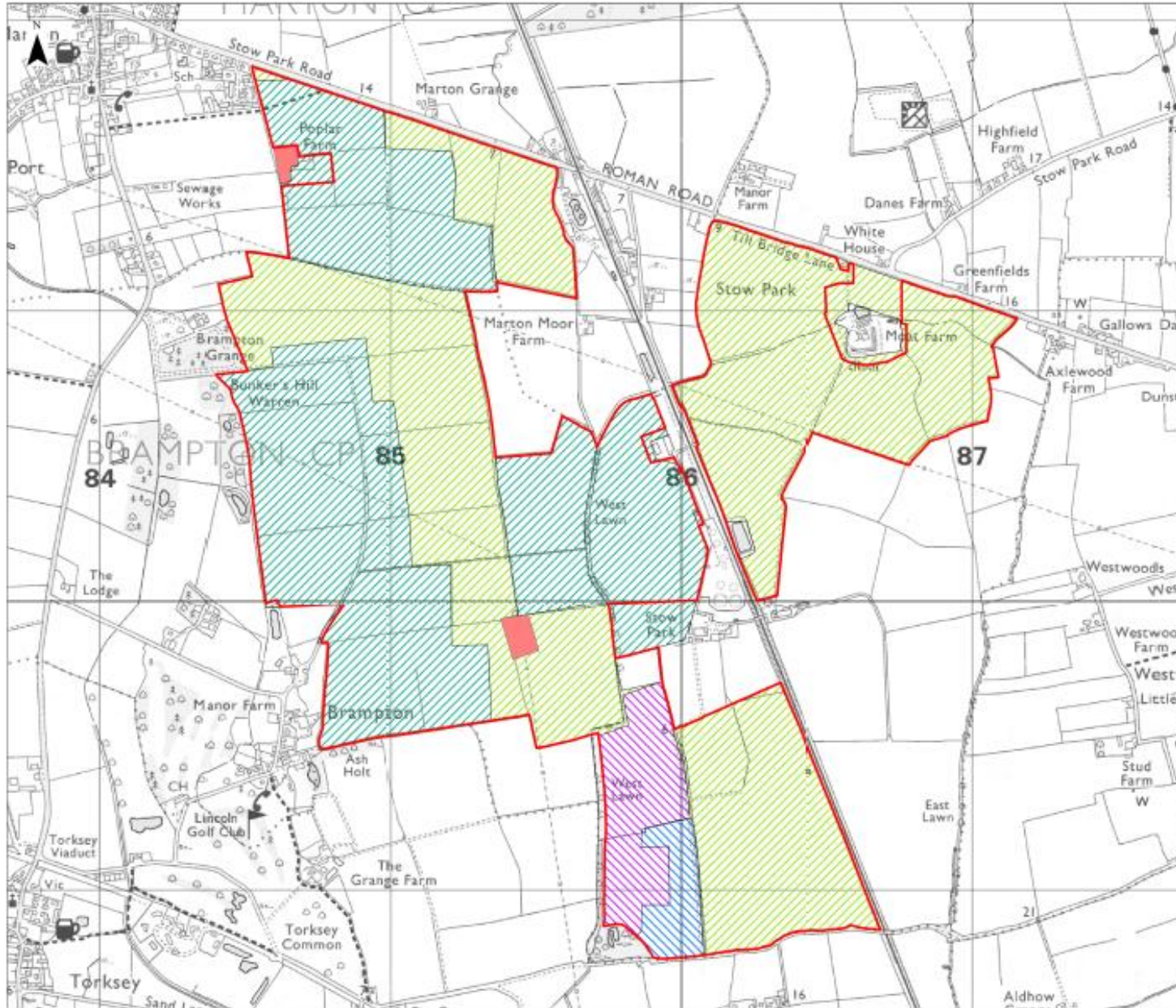
Layers: Aerial/Parcels, 2013; Lanpro, 2013
Base map reproduced from Ordnance Survey digital map data © Crown copyright 2019. All rights reserved. Licence number 0100011873


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<small>APPP Regulator: 512114</small>	<small>Application Doc No. WB8.A.19.2</small>
<small>Ref: P2963_LPR_T2_OH_DR_2_0235</small>	<small>Date: 27/01/2023</small>
<small>Drawn by: AZ</small>	<small>Checked by: DB</small>

Figure 19.2
West Burton 2
Agricultural Land Classification Grade Distribution

WEST BURTON SOLAR PROJECT
Soils and Agriculture
Environmental Statement (ES)



Island GREEN POWER 

Key

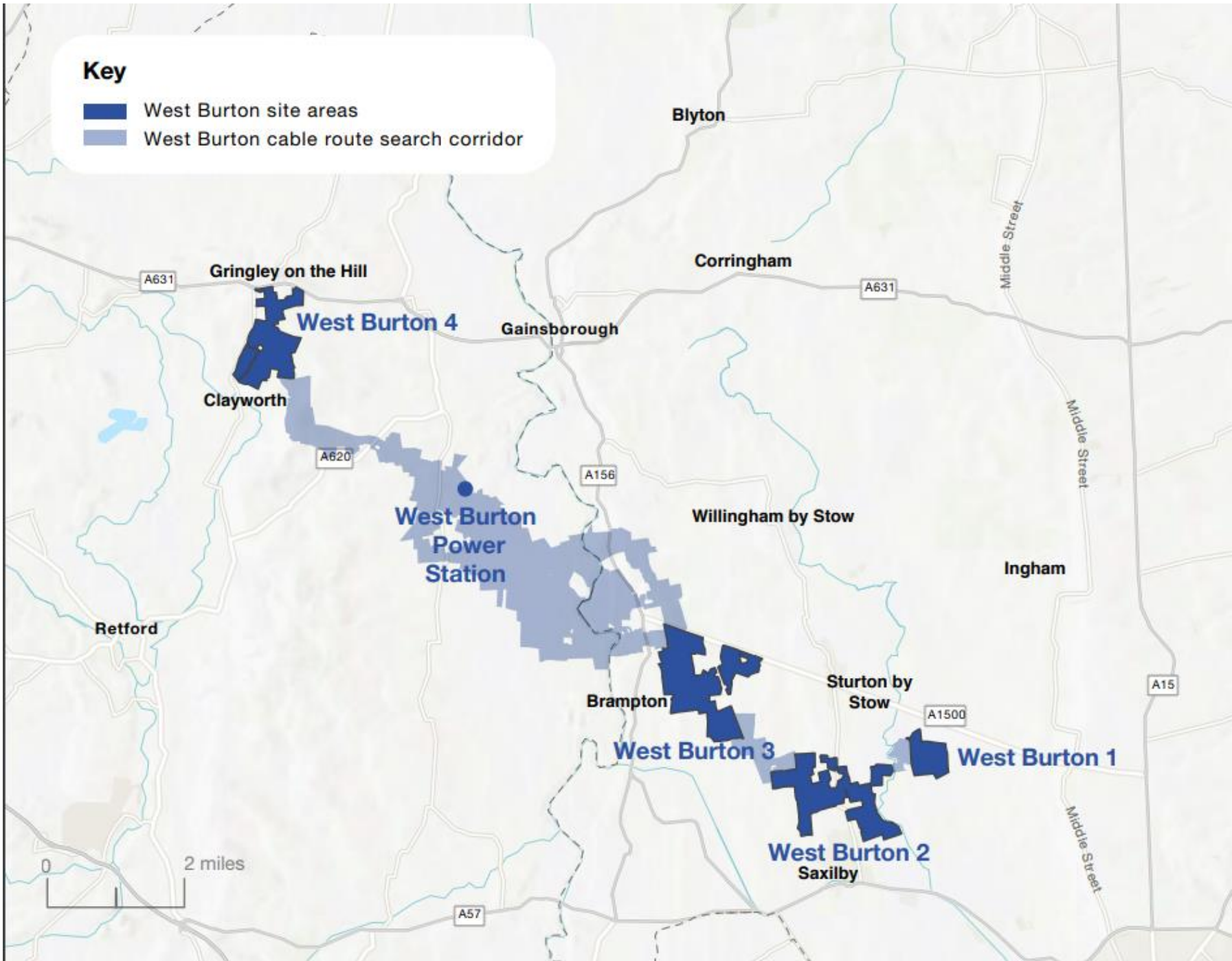
- Order Limits
- Detailed Agricultural Land Classification (ALC)
 - Grade 1
 - Grade 2
 - Grade 3a
 - Grade 3b
 - Non-agri

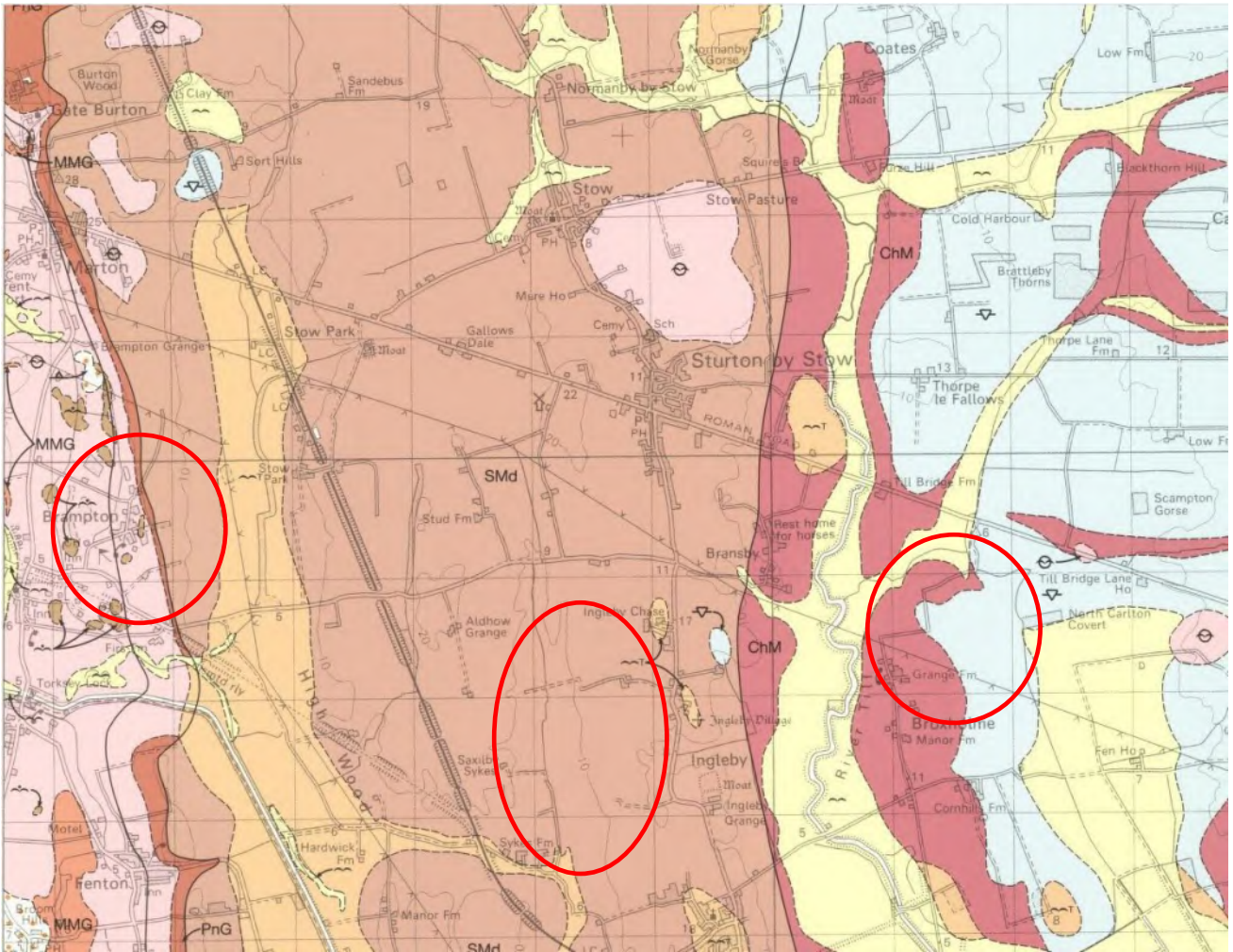
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Ref: WBLA_PP_02_01_01_010	Date: 23/01/2024
Drawn by: AJ	Checked by: DB

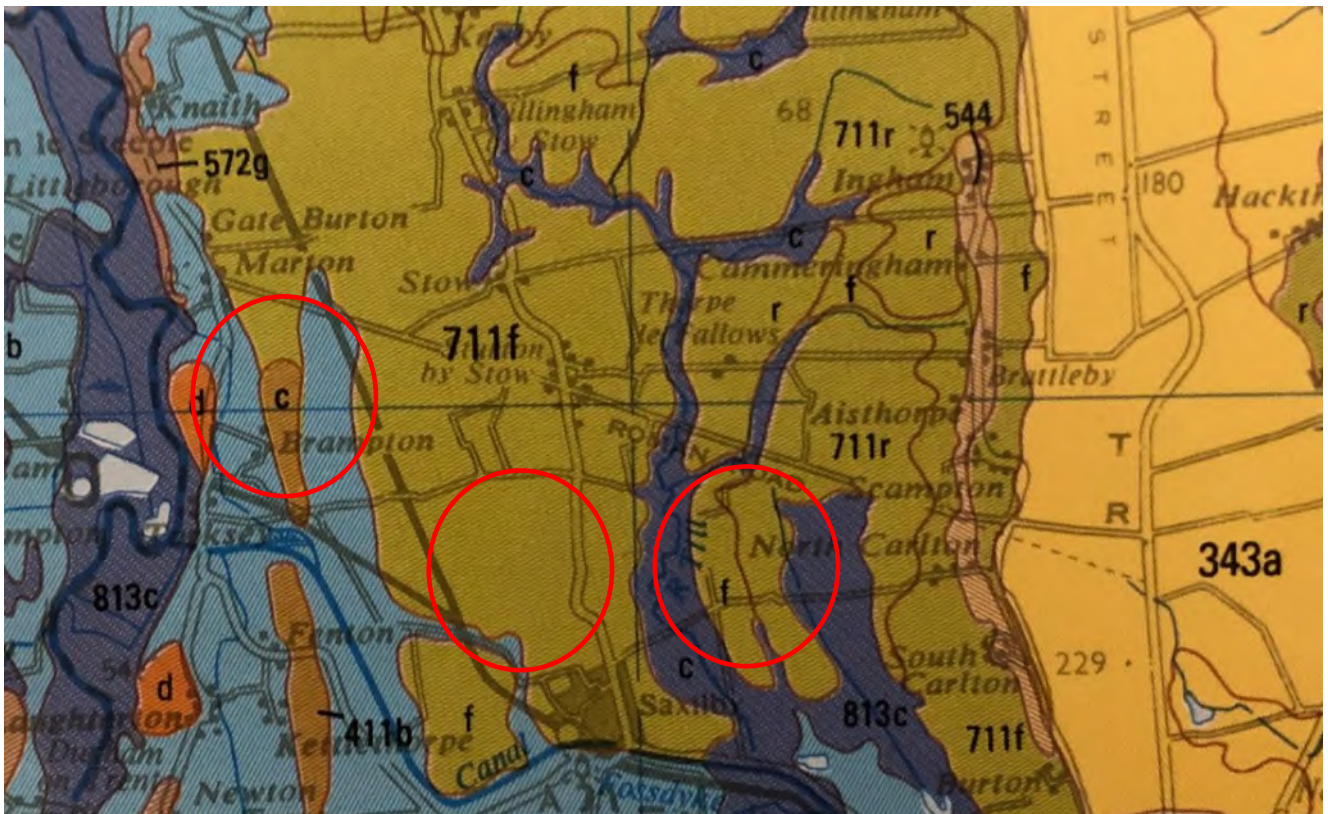
Figure 19.3
West Burton 3
Agricultural Land Classification Grade Distribution

WEST BURTON SOLAR PROJECT
Soils and Agriculture
Environmental Statement (ES)





Soil Survey of England Map of Area



0711f WICKHAM 2

Detailed Description

This association is extensive where thin loamy drift covers Jurassic and Cretaceous clay shales. It consists mainly of fine loamy over clayey typical stagnogley soils of the Wickham series but, where drift is absent, clayey soils of the Denchworth series are common. The better-drained stagnogley argillic brown earths of the Oxpasture series and calcareous clayey soils of the Evesham series, are sporadically distributed. There are many small inclusions of other soils; these are described below and are listed in the key.

The association covers approximately 320 km² mainly in valleys but also on plateaux of Middle and Upper Jurassic rocks in east Leicestershire where Wickham soils have a larger than average silt content. Narrow alluvial flats along many valleys carry clayey, wet Fladbury soils and in south Leicestershire there are calcareous St Lawrence series. Clayey Holdenby and Lawford soils are associated with patches of clayey drift. On the Rhaetic and Lower Lias sediments in east Worcestershire where the country rock is more calcareous than elsewhere, Evesham and Haselor soils and the former Wedmore series are important associates.

This association covers 545 km² in Eastern England mainly in Lincolnshire and Northamptonshire but also in west Norfolk. In Lincolnshire it is mainly in the Lias Clay vale between Lincoln and Newark where the Trent river terrace deposits are a source for the superficial loamy drift. Patches of sand and gravel give small inclusions of Quorndon soils, and some coarse loamy over clayey soils of the Kings Newton series occur on the edge of the river terraces. Oxpasture soils become increasingly common towards the limestone scarp of Lincoln Edge, and small patches of Beccles soils are included where the association abuts chalky till. Evesham soils are uncommon in the Lias vale and are found mainly in south-west Lincolnshire. However, Oxpasture and Evesham soils are more common on Upper Jurassic and Cretaceous rocks bordering the Fens. The association also occurs in the Ancholme valley north of Lincoln; north-east and east of Lincoln on slopes of narrow valleys cut into chalky till; on the western edge of the Wolds; and in the deeply dissected valleys of the southern Wolds. In Northamptonshire the association occurs both in narrow valleys cut into the clay shales and on the plateaux formed by Upper Jurassic rocks. Here in the valleys, Evesham soils are less frequent than elsewhere and in general the soils on the hilltops are siltier than those in the vales, and Oxpasture soils are common. Quorndon soils are a common inclusion in west Norfolk on flat or gently sloping land at the foot of the chalk scarp. Here Oxpasture soils are not found.

In the South West, the proportion of Wickham and Denchworth soils is greater than in the Midlands. Lawford profiles are common in places, but Evesham and Oxpasture soils are relatively rare. The association, which covers about 300 km², occurs mainly in the wide vales of Gloucestershire, Wiltshire, Somerset and Dorset on Jurassic and Gault Clays. It also occurs on the Oligocene clays of the Bovey and Petrockstow basins, where Wickham and clayey Teigngrace soils occupy two-thirds of the mapped area and the ancillary soils mainly belong to the Ipstones and Brickfield series. There is also some disturbed ground and waste heaps from ball clay working. Small patches of Oak and Hornbeam soils are included on the gravels that cap small knolls in Dorset and south Somerset, and in north Wiltshire where the gravels contain flint and sarsen stone derived from the chalk outcrop to the south.

In South East England the association occurs on low ground in Oxfordshire and Buckinghamshire, over Lower Lias, Oxford, Kimmeridge and Gault Clays. On the Lias, it is present on the lower slopes of valleys, particularly along the Cherwell, below ridges capped by Middle Lias ironstone or Great Oolite limestone. Elsewhere the association occurs below the Corallian scarp and at the margins of river terraces. Oxpasture soils feature only occasionally, and Evesham soils are restricted to river terrace bluffs and to ground near the Corallian scarp. Some Kings Newton soils have been recorded on the terrace drifts and near the Upper Greensand outcrop. Where the drift is clayey, Lawford soils occur. Rowsham soils have been recorded in the Tiddington area.

In Northern England the association covers 45 km², principally in the Howardian Hills of North Yorkshire. Here it occurs on plateau sites where thin drift from weathered sandstone and siltstones covers clay shale. In Humberside, small areas near Brigg, in valley drift, and near Kirton-in-Lindsey, on Head below the Lincolnshire Limestone escarpment, have fewer clayey inclusions than elsewhere.

Soil Water Regime

Occurring mainly on level or gently sloping sites, these soils which have slowly permeable subsoils are seasonally waterlogged (Wetness Class III and IV). Wickham, Evesham and Oxpasture soils respond well to artificial drainage, but because of their poor hydraulic conductivity, the Denchworth and Lawford series are more difficult to drain effectively. When the soils are waterlogged, excess water moves laterally mostly as surface run-off.

In the South West of England having slowly permeable subsoils and sited mainly on level or near-level ground the soils are waterlogged for prolonged periods during the growing season (Wetness Class V) where average annual rainfall exceeds 800 mm. In drier districts like north Gloucestershire, waterlogging is generally confined to winter (Wetness Class III).

Cropping and Land Use

Over much of this association the land is used for cereals and ley grassland. Oilseed rape has expanded recently and provides an alternative break crop to ley grassland. There is little opportunity for spring cultivation so almost all cereals are autumn-sown. Cereal yields may be reduced by slight droughtiness. Soil structure is easily damaged if the soils are cultivated when wet and careful timing of field operations is critical. Grass yields are restricted by drought and the grazing period is limited during spring and autumn because of a risk of poaching. Wickham and Denchworth soils are acid in reaction but, Evesham and Haselor soils are neutral or slightly alkaline. In wetter districts most of the soils are under long-term grassland with small areas of autumn sown cereals. The grass yields are potentially large, and most of the soils are only slightly droughty though the grazing season is shortened because of the risk of poaching. In the wettest places, the maximum safe grazing period is as little as 100 days. Where the average annual rainfall is below 750 mm ley-arable farming is more usual. Where cultivated, the soils suffer from compaction and structural damage by machinery and the timing of cultivations is critical. Phosphorus levels are naturally low, but potassium is adequate for most plant needs.

7.11 WICKHAM Definition

Major soil group:	07 surface-water gley soils	Seasonally waterlogged slowly permeable soils, formed above 3 m O.D. and prominently mottled above 40 cm depth. They have no relatively permeable material starting within and extending below 1 m of the surface.
Soil Group:	1 stagnogley soils	With a distinct topsoil. They are found mainly in lowland Britain.
Soil Subgroup:	1 typical stagnogley soils	(with ordinary clay enriched subsoil)
Soil Series:		medium loamy or medium silty drift over clayey material passing to clay or soft mudstone

Brief Profile Description

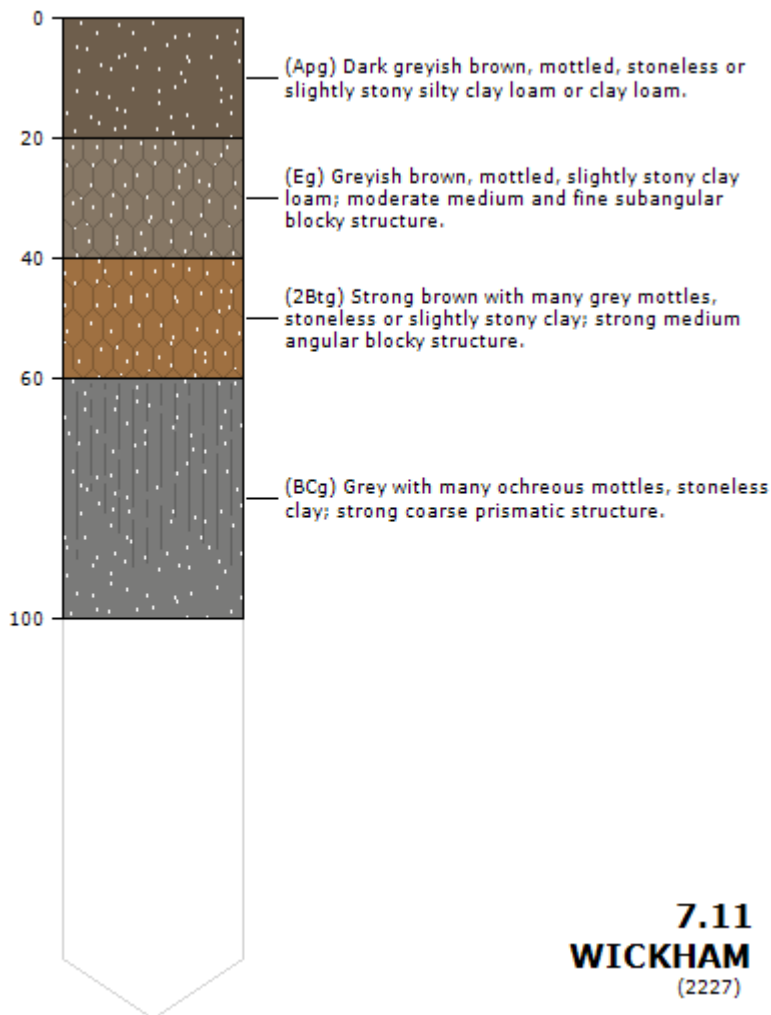
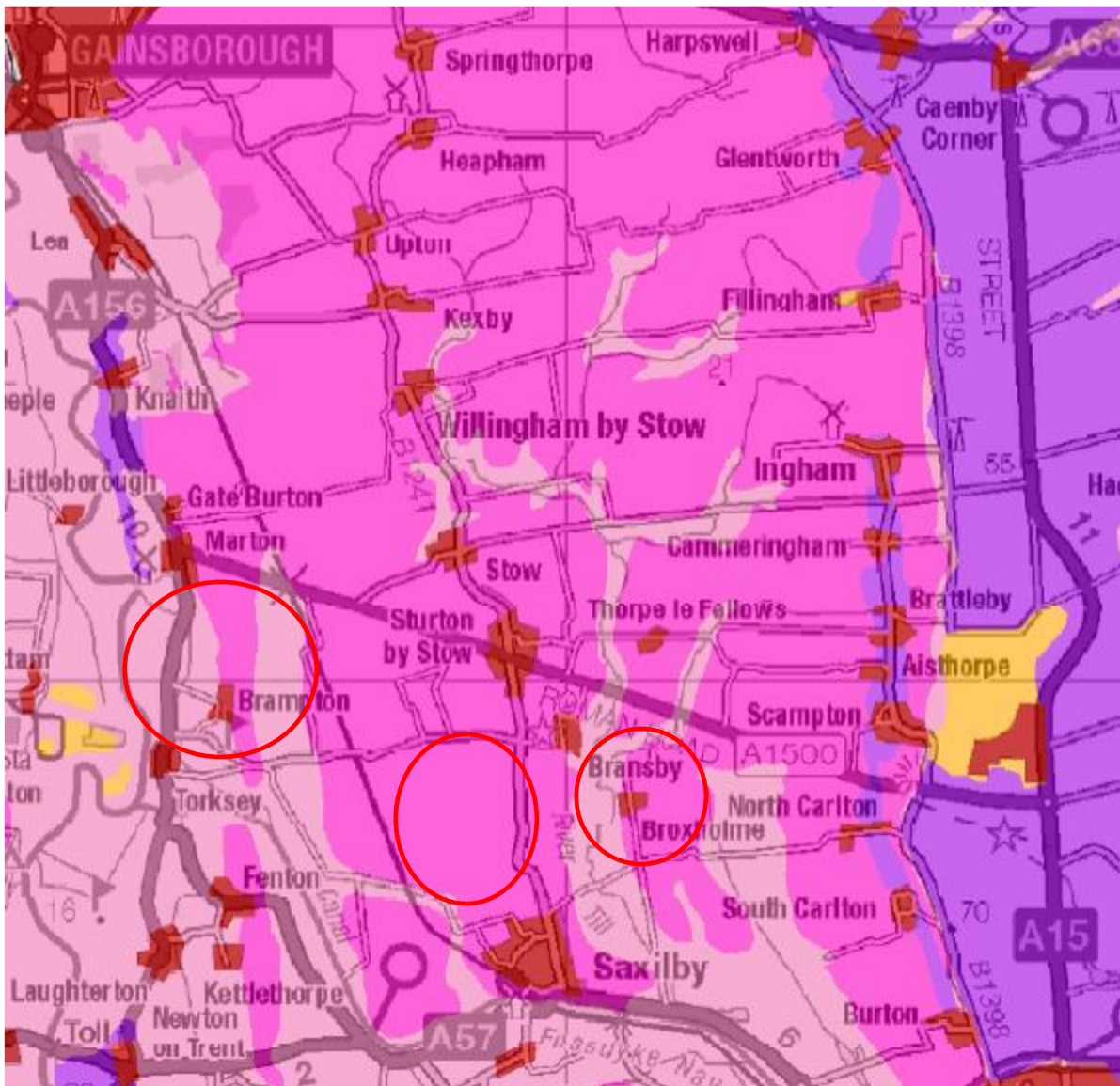


Figure 1 below is the DEFRA Predictive Best and Most Versatile Land Map.

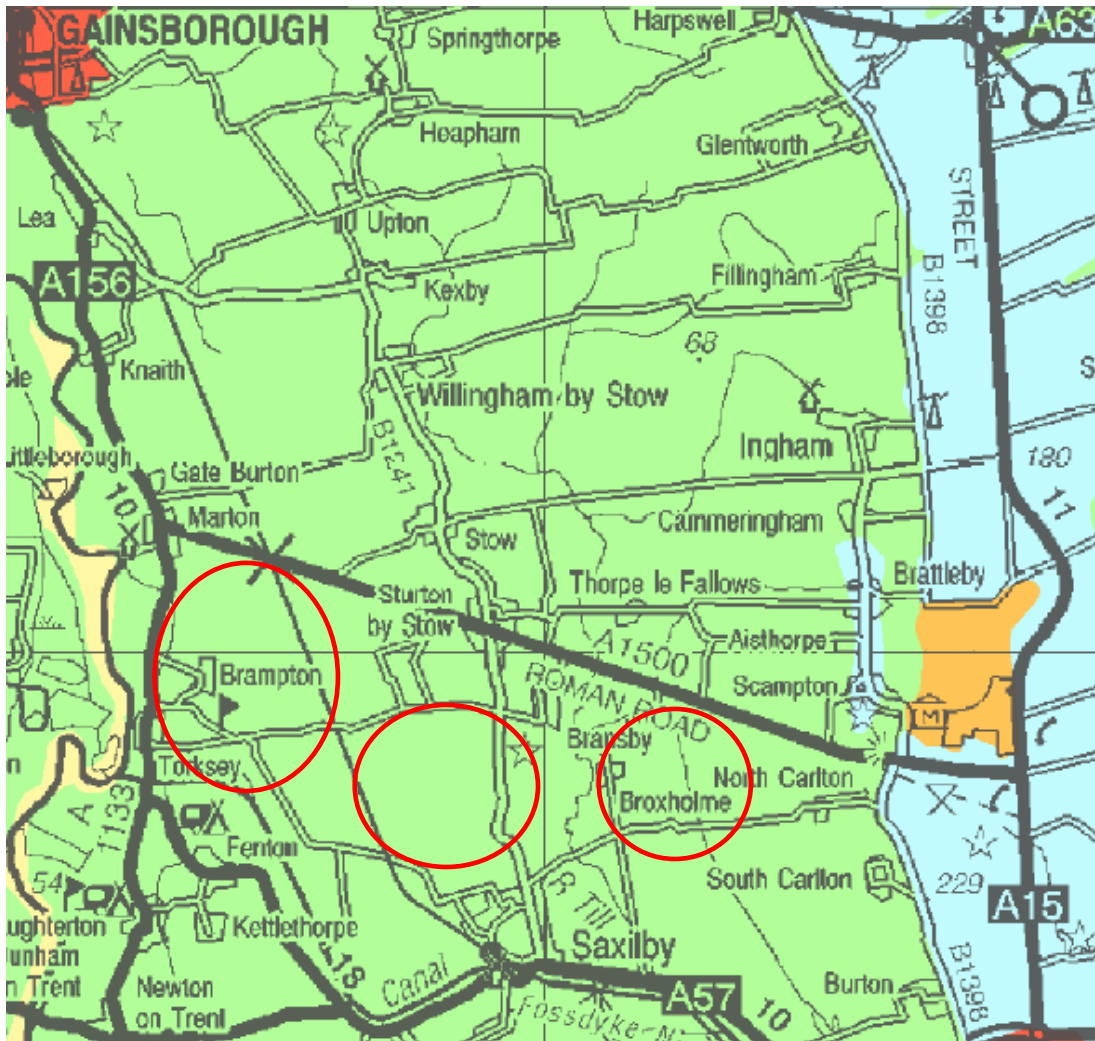
The map shows a Low to Moderate likelihood of best and most versatile land for this area



Predictive BMV Land Assessment © Defra

- High likelihood of BMV land (>60% area bmv)
- Moderate likelihood of BMV land (20 - 60% area bmv)
- Low likelihood of BMV land (<= 20% area bmv)
- Non-agricultural use
- Urban / Industrial

Figure 2 below is the 1:250 000 scale map (East Midlands) which shows the area as Grade 3 quality.



<u>Grade</u>	<u>Description</u>
1	Excellent
2	Very Good
3	Good to Moderate
4	Poor
5	Very Poor

Non-Agricultural Land

- Other land primarily in non-agricultural use
- Land predominantly in urban use

Soil Management Plan (Outline)

1. The soil stripping, handling, storage and replacement operations should be undertaken in a manner that is consistent with suitable specification and methodology set out in a Soil Management Plan.
2. All topsoil and subsoil material shall be stripped from areas affected by top soil storage bunds, subsoil storage bunds, general fill bunds, hard-standings and other constructions including temporary access roads and vehicle trafficking routes, and shall be stored separately in bunds from any imported material and shall be used for the restoration of the temporary soil storage site unless otherwise agreed in writing by the Local Planning Authority.
3. Soils should be stripped, stored and replaced in line with the MAFF Good Practice Guide for Handling Soils Sheets 1, 2, 3 and 4 - <http://webarchive.nationalarchives.gov.uk/20090306103114/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm> .
4. Topsoil and subsoil storage bunds should be placed in approved locations and constructed to ensure secure storage without damage, loss or contamination.
5. Topsoil and subsoil should be stored in bunds not exceeding 3m in height above adjacent existing ground level and shall be constructed and shaped by excavator only (dump trucks should not traffic across the bunds at any time).
6. Imported general fill material should be stored in bunds not exceeding 4m in height above adjacent existing ground level.
7. Bunds should be seeded to grass at the earliest opportunity and shall not be allowed to over-winter without grass cover.
8. No topsoil or subsoil should be sold or otherwise removed from the site.
9. Within 3 months of their construction, the Developer should provide a detailed plan of soil storage bunds showing details of position, volume and soil type. The Developer shall be responsible for maintaining an up-to-date record of all soil storage and general fill bunds throughout the life of the site.
10. The stripping, movement and re-spreading of topsoil and subsoil material should only be undertaken when the topsoil and subsoil material is in a dry and friable condition and the ground is sufficiently dry to allow the passage of heavy machinery and vehicles over it without damage to the soils.
11. All injurious weeds, as defined by the Weeds Act 1959, growing within the working site should be eradicated or adequately controlled by approved method.
12. All vegetation growing on soil storage bunds and peripheral areas within the site should be kept in tidy condition by cutting at least once during the growing season.
13. The boundary of the development should be made stock proof for the duration of the temporary development.
14. All temporary plant, machinery, buildings, fixed equipment, roads and areas of hard standing including site compounds should be removed.
15. The natural subsoil base material should be comprehensively ripped to a minimum depth of 500mm to break up surface compaction before any soil material is spread. The developer should give the Planning Authority notice of an intention to carry out this operation. All large stones and boulders, wire rope and other foreign material arising should be removed. Special attention should be given to areas of excessive compaction such as haul roads where deeper ripping may be necessary.
16. The Developer should be responsible for providing all necessary training of operatives and site supervision by suitably qualified personnel to ensure that the soil replacement operation is carried out in the approved manner.
17. Prior to the commencement of spreading soil, all stones, boulders or foreign objects likely to impede normal agricultural cultivations should be removed from that area.
18. The soil material set aside for use in any agricultural restoration should be spread uniformly in the correct sequence (subsoil followed by topsoil) over the ripped base material, and should be rooted and

scarified to full depth without causing mixing between different soil layers. The reinstated agricultural soil profile should be total 450mm thickness overlying prepared and free draining natural stony base material, and should consist of 250mm topsoil and 200mm subsoil derived from the soil stripping operation. This soil profile should meet the technical requirements of the identified Agricultural Land Classification Grade on restoration.

19. All base material ripping, soil spreading and cultivation operations should be carried out in such a manner as to minimise compaction and achieve unimpeded drainage down through the soil profile.
20. Any part of the site restored for agricultural purposes which is affected by localised settlement that adversely affects the agricultural after use should be re-graded including the re-construction of the soil profile to approved specification.
21. Following restoration of the soil materials, the land will be cultivated, seeded and managed appropriately for a minimum of a year and until agreed with the Local Planning Authority that the land meets satisfactory requirements.



Conditions as construction proceeds



Commencement



Mid construction



Near completion

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