



Tydd Solar Farm

Site Search and Sequential Flood Test

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UKZ157 Tydd Solar Farm

Report Version - Submission

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1. Site search summary

This document describes the approach PACE has taken to locate the site as part of a process of identifying and assessing other potential sites. It describes the site selection process, study area and sequentially considers sites that may be of lower risk of flooding.

It also considers whether lower agricultural land grade could be used, through it is noted that there is no policy that prevents use of agricultural land of any grade for solar farms and the National Policy Statement for renewable energy infrastructure (NPS EN-3), which came into force in January 2024, confirms that while the preference should be to use lower grade agricultural land, this should not be the predominating factor in site selection.

1.1 Site selection – an overview

The selection of sites for solar farms involves a complex process of site search and assessment to identify suitable locations which are acceptable both in terms of planning, commercial and energy generation considerations. This requires consideration of both planning policy and integration with the UK's electricity network. While the Government and both South Holland and Fenland District Councils seek to urgently tackle climate change, it is essential to locate and develop suitable sites for renewable energy generation and storage, to ensure the smooth transition from a fossil fuel to a net-zero economy.

Solar farms must address a range of planning considerations at both national and local levels, and at the same time meet the criteria set for electricity infrastructure by the National Grid and Distribution Network Operators (DNO). While forecast generation capacity and demand provide important context, Government policy presents an unconstrained need for additional renewable energy capacity (National Planning Policy Framework, para 163a).

The site selection process is first determined by locating those areas within the distribution network where there is an identified capacity for additional electrical input. Having identified capacity, there follows a long process of identifying sites following a sequential planning approach to those sites which are available, and which can reduce, ameliorate, or mitigate potential negative impacts.

Solar farms are typically located on agricultural land because of their size, but there is also growing evidence that they can allow continued use of agriculture – such as grazing – and provide considerable benefits to the wider farm and biodiversity. The selection process is therefore both iterative and thorough and is set out here.

1.2 Policy background

Solar farms provide clean renewable energy and are recognised as an important means to achieving the UK's legally binding target of net-zero carbon emissions by 2050 and the five-fold increase in solar power by 2035 in the 2022 British Energy Security Strategy and can also dramatically enhance biodiversity within the site.

Planning policy is supportive of solar farm developments. The NPPF is clear that “the planning system should support the transition to a low carbon future... in ways that contribute to radical reductions in greenhouse gas emissions...; and support renewable and low carbon energy and associated infrastructure.” (Paragraph 157) It should also support the development of the local economy, and encourage “the development and diversification of agricultural and other land-based rural businesses” (paragraph 88b), and for decisions to contribute to and enhance the natural and local environment, including “the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land” (paragraph 180b).

There is no policy that prevents the use of agricultural land of any grade for solar farms. The NPPF seeks to enable “*the development and diversification of agricultural and other land-based rural businesses*” (para. 88b), and for decisions to contribute to and enhance the natural and local environment, including “*the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land*”.

Footnote 62 notes that “*Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.*”

The NPPF provides at paragraph 88b that planning decisions should recognise the economic and other benefits of BMV land, not avoid use of BMV land.

The National Planning Practice Guidance (NPPG) on Renewable and low carbon energy, also originally released in 2015, provides a list of planning considerations that relate to large scale ground mounted solar photovoltaic farms¹. These include:

“Encouraging the effective use of land by focussing large scale solar farms on previously developed and non-agricultural land, provided that it is not of high environmental value;

Where a proposal involves greenfield land, whether:

- *(i) the proposed use of any agricultural land has been shown to be necessary and poorer quality land has been used in preference to higher quality land; and*
- *(ii) the proposal allows for continued agricultural use where applicable and/or encourages biodiversity improvements around arrays. See also a speech by the Minister for Energy and Climate Change, the Rt Hon Gregory Barker MP, to the solar PV industry*

¹ Paragraph ID: 5-013-20150327

on 25 April 2013 and written ministerial statement on solar energy: protecting the local and global environment made on 25 March 2015.”

The NPPG passage refers to all agricultural land, not just BMV, and it also looks to whether there can be continued agricultural use and/or biodiversity improvements. The WMS indicates that the use of BMV for solar farms has to be justified by the most compelling evidence. However, a recent appeal decision (Ref: APP/C1570/W/23/3319421) recognised that this should be read in light of more recent policy updates and also be viewed against the increasing imperative to tackle climate change, and to meet the legally binding Net Zero targets. There has therefore been a significant change in the imperative placed by Government on the urgent need for the rapid deployment of renewables.

Additionally, the Inspector found in appeal ref: APP/G2713/W/23/3315877, that the local policy did not prevent the use of BMV land in Hambleton District Council for a solar farm, but required that the benefits need to justify its loss. If they do, then areas of the lowest grade available must be used except where other sustainability considerations outweigh agricultural land. Similarly, the national guidance outlined above *“not prevent the use of such land”*.

The National Policy Statement for renewable energy infrastructure (EN-3), which came into force in January 2024, is a material consideration in decision making at local level and confirms that while the preference should be to use lower grade agricultural land, this should not be the predominating factor in site selection.

The ALC survey conducted at this site demonstrates that 86% of the site is grade 3a, with the remaining 14% as grade 2. This is shown in figure 1. The soil classification has been carried out using the revised guidelines set out in the publication “Agricultural Land Classification of England and Wales” (MAFF , 1988).

In summary, planning policy does not preclude the development of solar farms on agricultural land or prevent the use of higher-grade land. Importantly, the NPPF confirms the importance in decision-making of the wider benefits from natural capital and ecosystem services, including the economic and other benefits of best and most versatile agricultural land. Such benefits include food growing, but also include control of climate, nutrient cycles, pollination, flood prevention, and energy – all of which can be provided by solar farms.

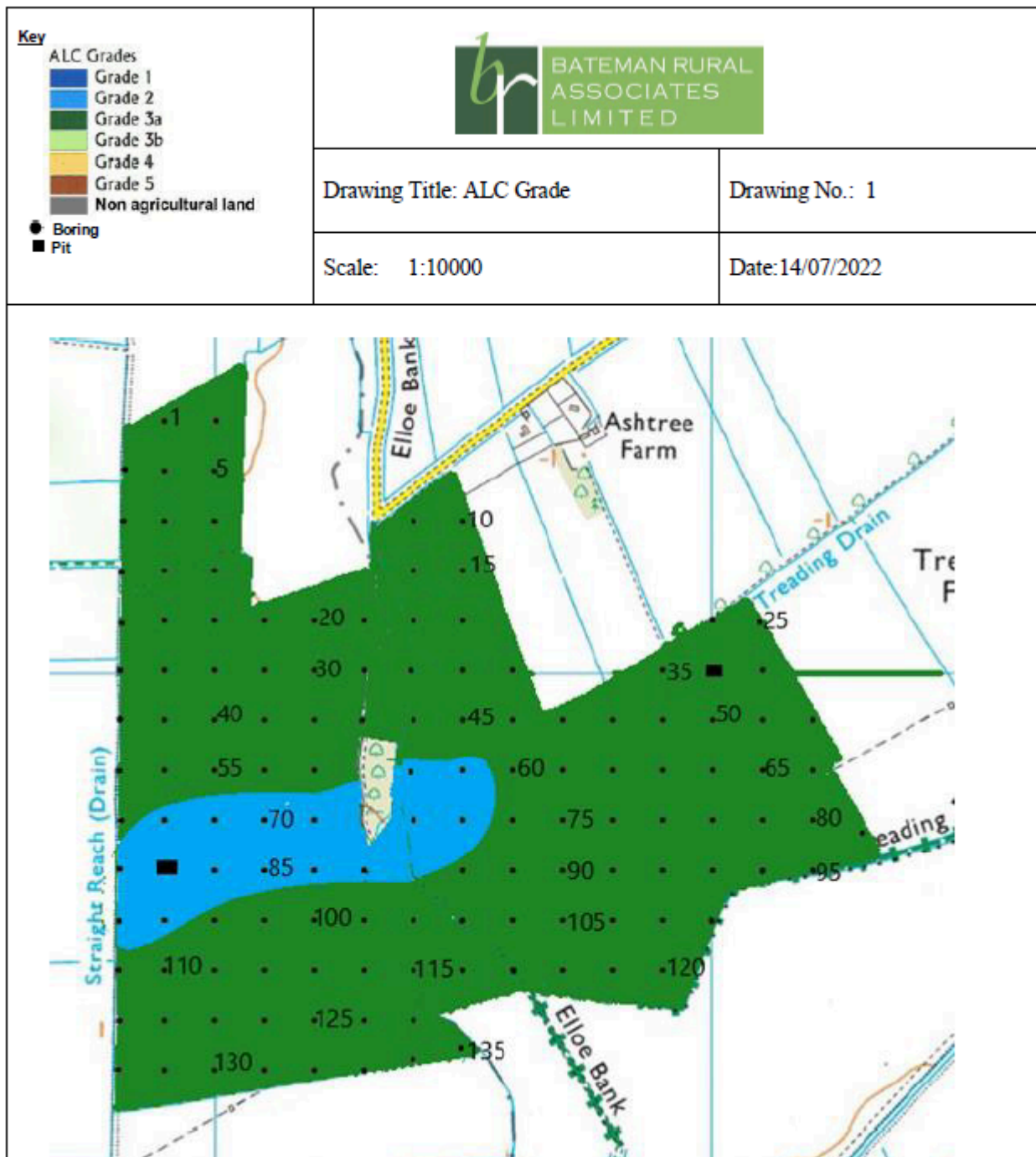


Figure 1 - Site map showing agricultural land grades

1.3 Overarching national need

Although Government policy is clear that developers are not required to demonstrate need (there is an unconstrained need for new capacity), it is useful to describe the increasingly urgent need for the proposed development in the context of the action on climate change as set out in South East Lincolnshire Councils Partnership (SELCP) Climate Change Strategy 2022 and FDC's Policy LP14. The latter sets out a specific objective in *"supporting a transition to a low carbon future."*

While both SHDC and FDC are committed to lowering the impact of climate change, the Climate Change Strategy 2022 sets out 'a framework for action' which sets out a number of focus areas and strategic themes including energy and renewables

In the 21st Century, climate change is a recognised phenomenon of international and global significance. The scientific evidence is overwhelming and has recently led to cross-party support for legislation that enshrines *"net-zero greenhouse gases emissions"* within the Climate Change Act 2008.

The NPPF is clear that *"the planning system should support the transition to a low carbon future... contribute to radical reductions in greenhouse gas emissions... and support renewable and low carbon energy and associated infrastructure."* (Paragraph 157).

However, financial incentives for most renewable technologies have been removed by the government and the Institution of Mechanical Engineers estimates a 40-55% electricity supply gap in the next decade. Ground mounted solar photovoltaics are currently the only onshore renewable technology that retains relatively unconstrained planning policy support and, due to significant cost reductions in recent years, is viable without financial subsidies. Along with off-shore wind, therefore, solar is critical to achieving these radical reductions. The Committee on Climate Change (CCC) – the Government's advisors on achieving net-zero – has identified a need to deploy 54GW of solar by 2035 to keep on track to deliver net zero. This equates to roughly 40GW of solar by 2030.

The proposed project will contribute significant renewable energy, directly addressing the climate emergency and supporting the transition away from fossil fuels.

1.4 Need for the development in this location

Demonstrating specific local needs is not possible since the responsibility for ensuring supply and demand is in balance, locally and nationally, falls to The National Grid as the electricity system operator. It does this by prescribing requirements for power capacity (megawatts of generation) and services (e.g. provision of capacity at peak times, balancing and frequency response). This is becoming more challenging as the traditional large centralised power stations become unviable and, supported by Government policy, the UK's last remaining coal-fired power station is due to close in 2024.

The UK's old centralised electricity network is being replaced, with Government support, by a decentralised one powered by renewable energy, such as solar and wind, supported by small flexible demand responsive facilities, such as battery energy storage. Apart from the largest power stations, which connect directly to the transmission network, most projects connect to the distribution network (in this case Western Power Distribution Network).

The electricity network was designed for centralised generation and as a result, large parts of the network do not have the capacity to accommodate new connections. Therefore, project locations are determined in relation to available grid connection capacity rather than by locally specified needs. Due to the unconstrained national need, it is reasonable to assume that all substations and circuits with capacity should be expected to accommodate some form of generation unless material planning policy reasons indicate otherwise.



Figure 2 - England's and Wales' distribution networks

1.5 Identifying the study area

The previous section established that each local substation or circuit should be considered for whether it can accommodate some form of generating or balancing facility. Therefore, grid capacity maps are first consulted to determine those that may be suitable.

There are 6 DNO operating over 12 territories in England and Wales. PACE's process involves consulting the data released by relevant DNOs and finding suitable grid paths. Once a territory has been identified, the publicly available information relating to the grid is consulted.

The 132kV line connecting to the Eaton Socon Circuit was identified as having some capacity to connect a generation project.

This does not mean that it would be feasible or viable to connect every location near to the electricity line because it will depend on factors such as the intervening presence of development and infrastructure, electrical constraints, and the type of terrain. For example, laying a cable across a field directly to a connection is significantly cheaper than if it must cross a river, road, railway or pass through a settlement, and does not require additional rights to be secured.

Grid connections are expensive and the development site needs to be at a close enough distance from the substation and grid line to ensure a viable connection can be made. These distances vary, depending on the connection costs and substation/circuit voltage. PACE has adopted a 1 km study area either side of the 132kV line .

To help determine areas where potential sites can be considered 'deliverable' (the term deliverable is defined in the NPPF glossary, PACE has developed a 'fatal planning flaw' map to rule out areas where planning permission is unlikely to be granted. The 'fatal planning flaw' list within the search area comprises higher grade land with classification Grade 1 (excellent), Scheduled Monuments, Ramsar sites, Special Protection Areas (SPAs), Special Area of Conservation (SACs), RSPB Nature Reserves, SSSI. Critically, most of these designations protect the Nene Washes SPA/SSSI/Ramsar site located approximately 9 km east of Peterborough. The study area and the fatal planning flaws are shown in figure 3.

Figure 4 shows the site study area superimposed over a map of ALC land grade data. This map places the site in the context of agricultural land grade estimates using a combination of data derived from site surveys (post 1988), provisional ALC map data, climatic data and published Soil Survey and Land Research Centre (now National Soil Resources Institute) information.

Figure 5 shows the site study area superimposed over the flood risk for planning map. This places the site in the context of flood risk in the surrounding area and also contributes to the sequential flood risk analysis.

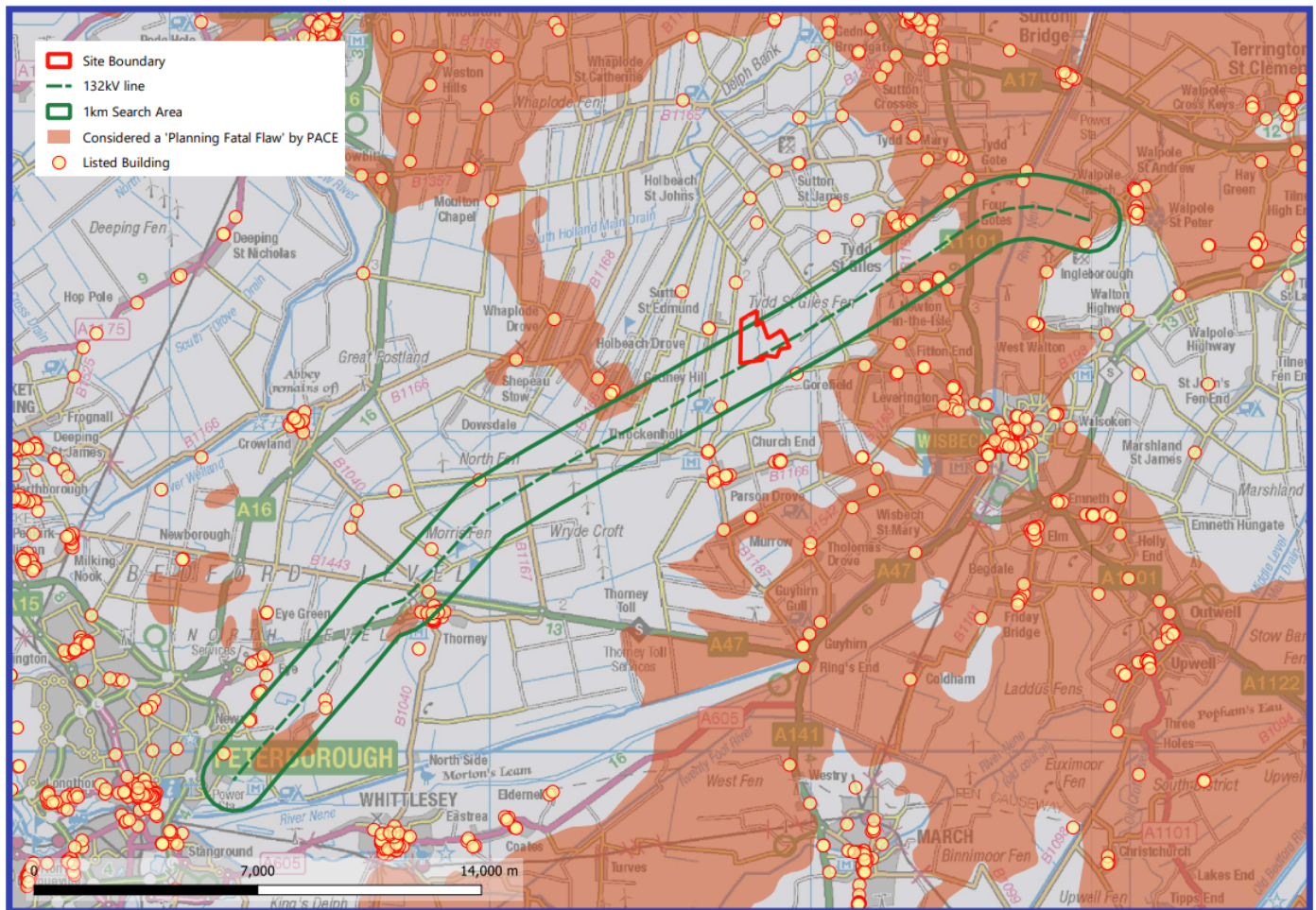


Figure 3 - Image showing the 132kV line, 1km study area, and critical planning designations (fatal planning flaws)

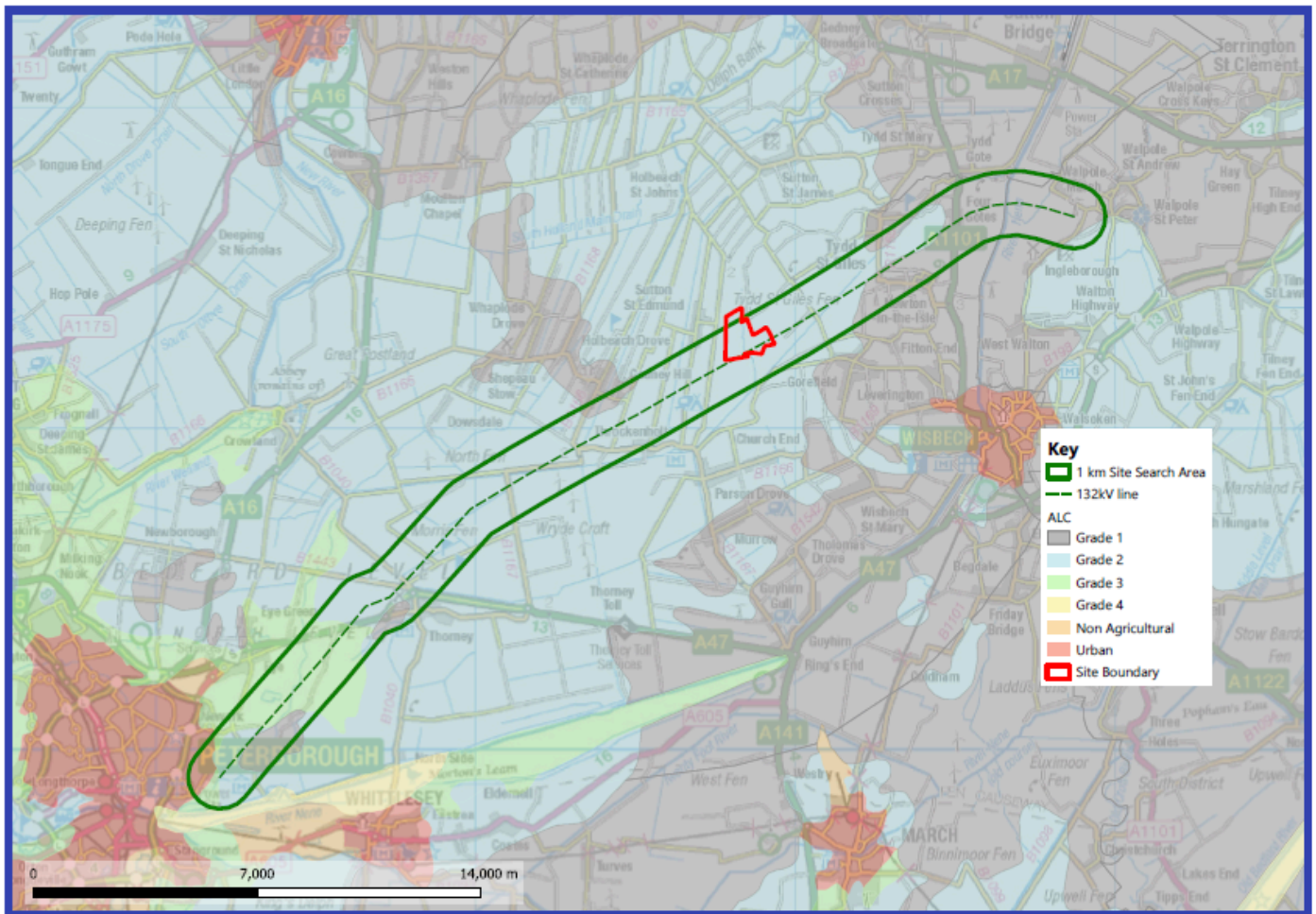


Figure 4 - Image showing the 132kV line, 1km study area, and agricultural land classification (ALC) of the surrounding area. Data sourced from DEFRA, 2010.

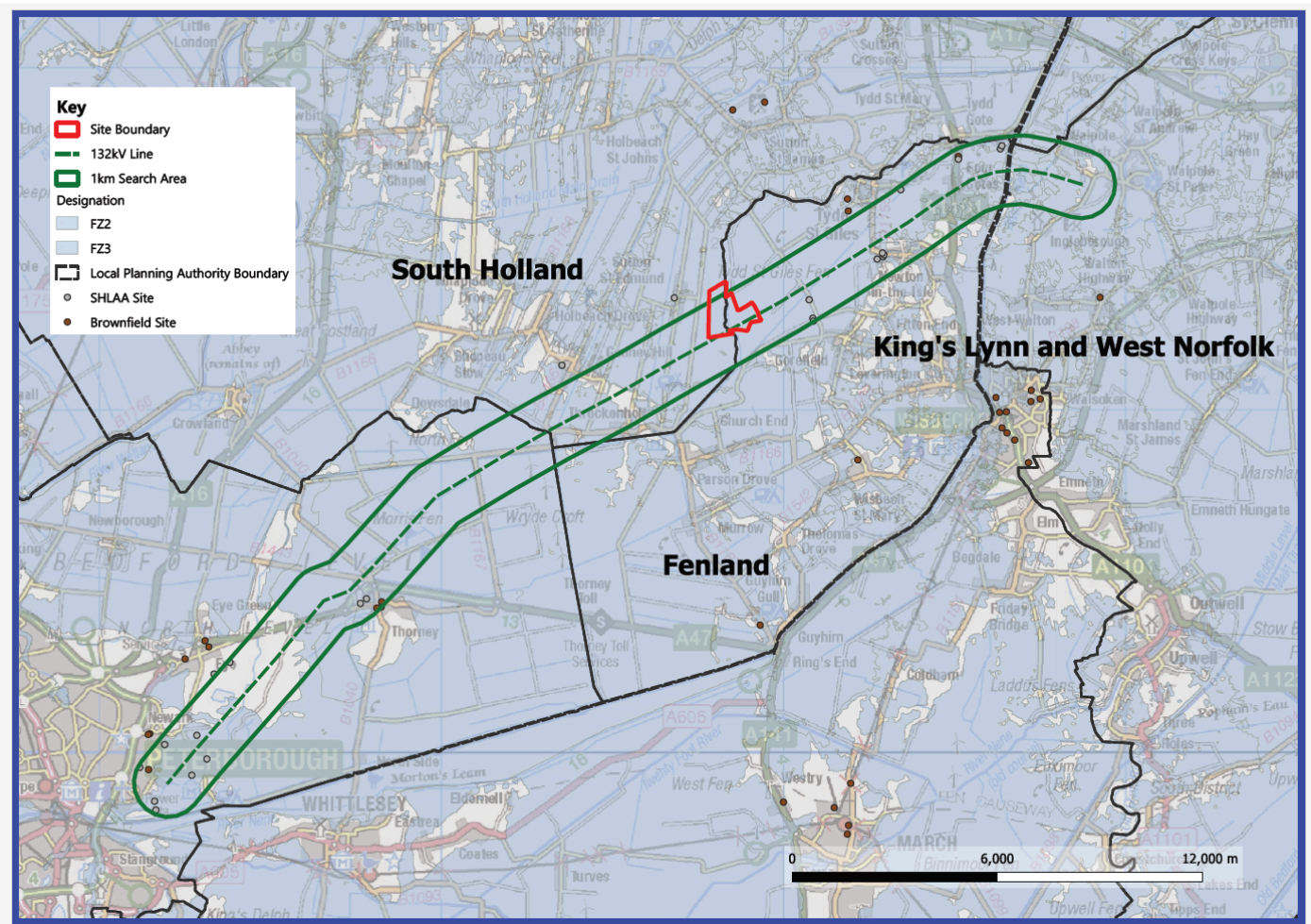


Figure 5 - Map showing the Flood Zones around and within the site search area

1.6 Identifying suitable sites

1.6.1 Methodology for identifying sites

The term deliverable, as defined in the glossary of the NPPF, has been adapted for use as the basis for identifying suitable sites that are suitable in terms of the use of agricultural land and land at risk of flooding.

To be considered deliverable sites should be:

- Available now; and
- Offer a suitable location for development now.

PACE considers a site to be suitable by applying the following criteria:

- Minimum site area of approximately 50 hectares. For the available grid connection, sites could not be significantly smaller than this as there will be insufficient space to accommodate a solar farm without making the project unviable on a cost per megawatt basis. Potentially sites can be combined if they are not too far from one another.
- Avoid locating the development within the following key designations:
 - Ancient Woodland
 - National, European and International environmental designations: Areas of Outstanding Natural Beauty, Biospheric/Biogenetic Reserves, Environmental Sensitive Areas, RAMSAR sites, Sites of Special Scientific Interest, National Parks, Special Area of Conservations and Special Protection Areas
 - Heritage Coast
 - Country Parks
 - Historic Battlefields
 - National Heritage Future Zones
 - Nature Reserves
 - Registered Park or Gardens
 - Royal Society for the Protection of Birds reserves
 - Scheduled Monuments
- Be able to overcome physical, environmental and policy constraints, including planning policy or other designations and on-site or connection route infrastructure or features (such as trees, pylons, drains, railway lines and buildings).
- Be able to overcome amenity constraints, such as noise and visual impacts.
- The anticipated cost of connection. The cost to connect to the grid increases with distance.
- Rent levels payable to the landowner can vary considerably.

In summary, this section has demonstrated a clear need for solar farms to be located where there is the capacity to connect to the electricity grid. It has also illustrated the approach PACE has taken to identifying capacity across the country. Government policy presents an unconstrained need for new renewable energy capacity and so available capacity in one location

is not a reason to preclude development in other areas. Grid analysis by PACE has identified capacity on the 132kV line connecting to the Eaton Socon circuit and has established a point of connection along this route. A 1 km study area has been established and landowners sought within this study area.

1.6.2 Analysis of potentially available and brownfield sites

Previously developed sites (were any to be deliverable for solar) are typically better retained for development such as housing, employment, leisure and town centre uses. Rooftops can be an ideal place to install solar, but is not a market sector that PACE is involved with and, ultimately, such installations will be needed *in addition* to ground mounted solar farms to meet local climate change targets and the Government's commitment to decarbonising the electricity grid by 2035. To establish whether non-agricultural sites are available, firstly the assessment started by considering sites identified in FDC's Strategic Housing and Economic Land Availability Assessment (SHELAA, September 2020) and Brownfield Register where land is identified as available. Sites identified in SHDC as per the South East Lincolnshire Strategic Housing Land Availability Assessment (SHLAA, January 2016) and the council's Brownfield Register were also considered to ensure there were no viable brownfield sites.

Sites that have planning permission or have a proposed use in the development plan for either local authority that would conflict with the proposed use are discounted. Sites that were identified in the Brownfield Register across both FDC and SHDC were considered unsuitable for development due to the proposal requiring a minimum of 50 hectares of land and the fact that this land was identified as being suitable for housing by both FDC and SHDC. The largest brownfield site located within the search area was 7.3 ha and combining sites in close proximity did not yield sites of sufficient size. In this regard all of these sites fell below the threshold required and were subsequently discounted. Therefore, the use of agricultural land is necessary.

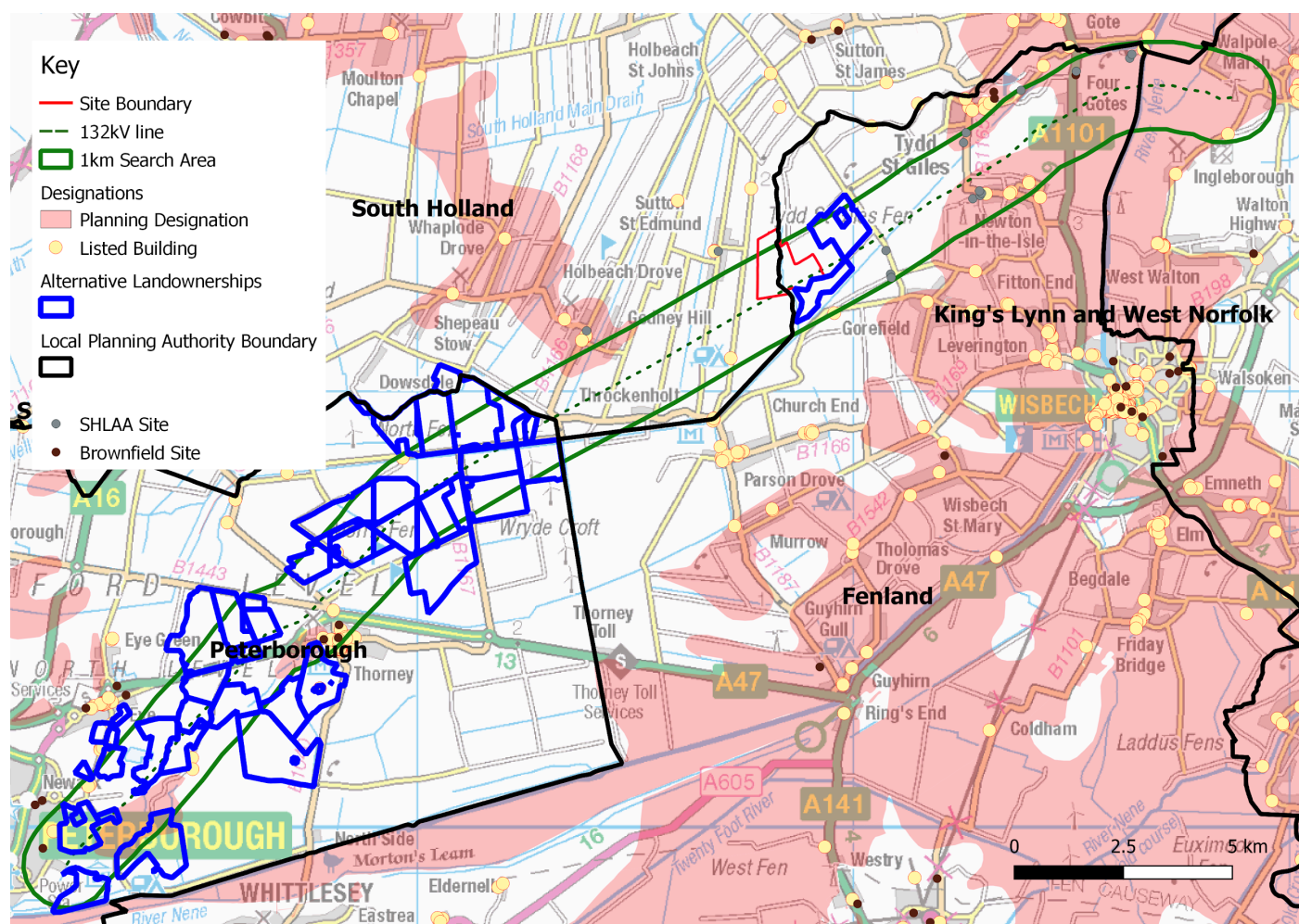


Figure 6 - Alternative sites found within the Fenland, Peterborough and South Holland Districts and within the study area.

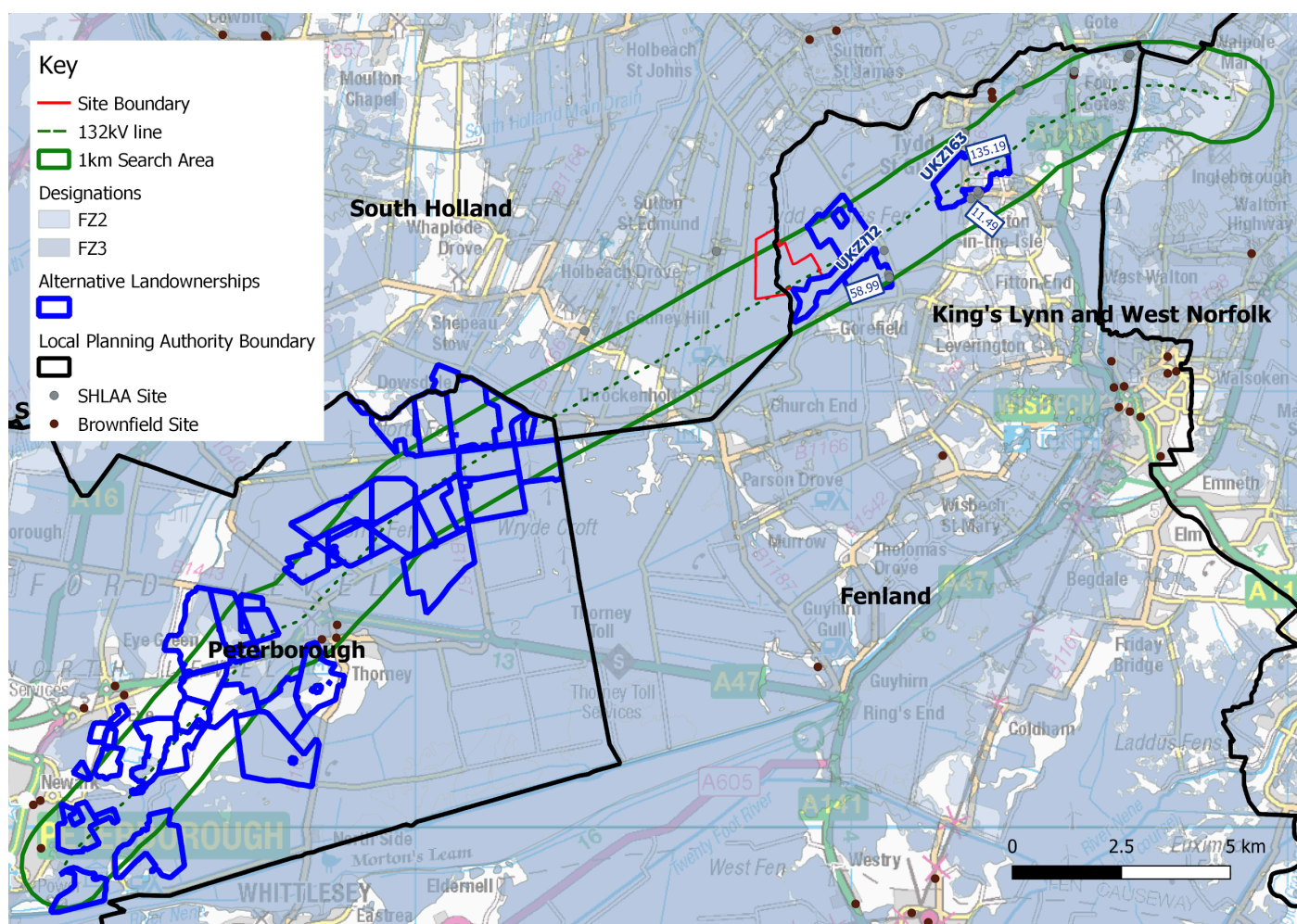


Figure 7 - Alternative sites found within the Fenland, Peterborough and South Holland Districts and within the study area superimposed on the flood zones of the regions.

After using the methodology in section 1.6.1 to rule large portions of the search area, PACE identified alternative sites within the search area. Large portions of these were able to be ruled out. Sites north of the A47 in figure 6 were able to be discounted on flood risk and agricultural land grounds. Sites south of the A47 were subject to additional analysis of their potential to receive planning permission. The sites analysed are shown in Figure 8. Table 1 provides an overview of the planning constraints relevant for each site.

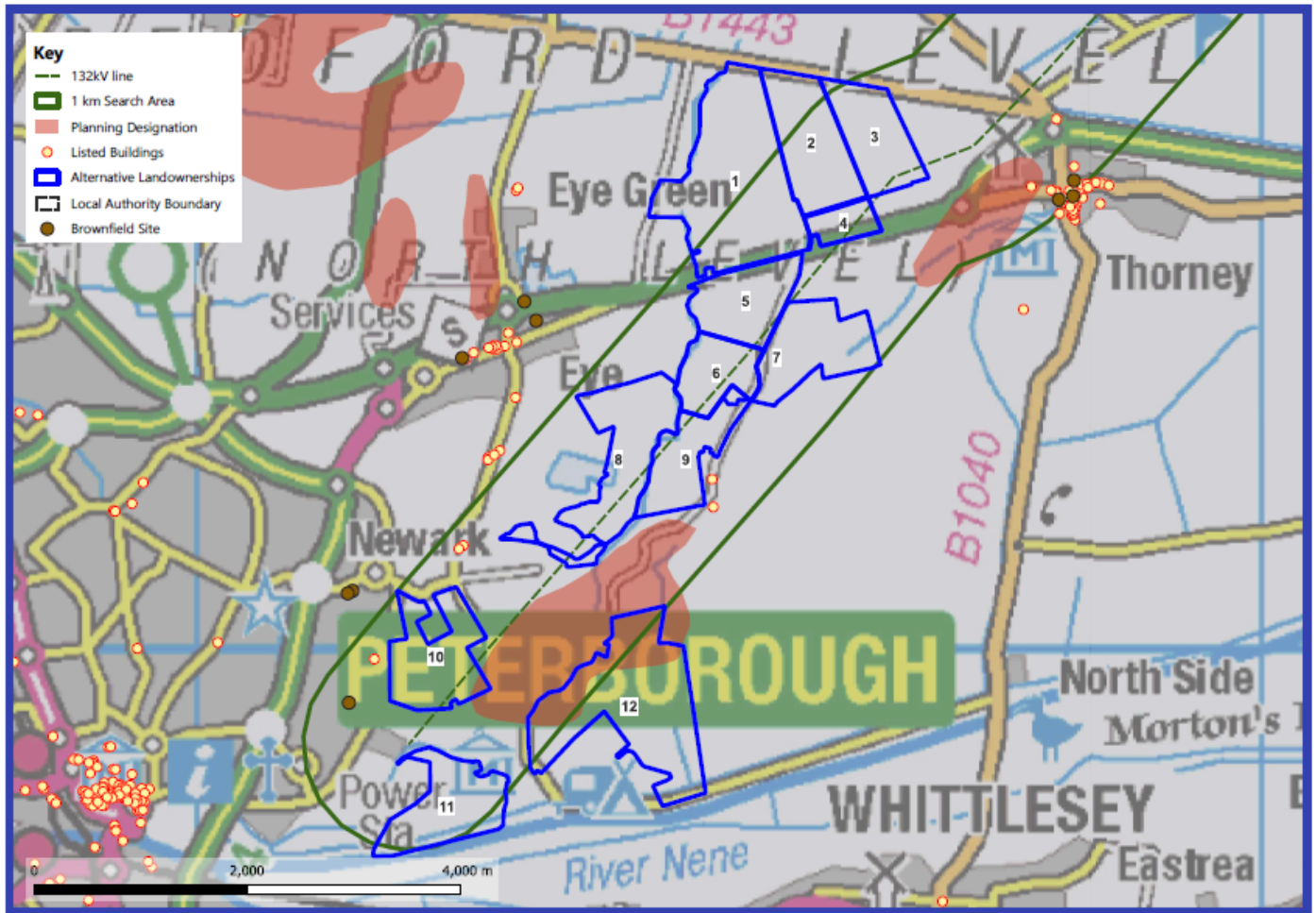


Figure 8 - Map inset of area and alternative sites to the south of the A47 and west of Peterborough that fall within the search area.

Table 1 - Analysis of planning constraints for potential solar farm development

Colour Key

Site potentially meets sequential analysis. Further research required.	Site has potential but further research is required. Potential problems.	Site unsuitable. No further research required.
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Site Ref	Address	Ecology	Flood	Heritage	ALC	Landscape and visual	Availability and site area	Site Assessment
1	Land at Cat's Water Farm, The Causeway, Thorney, Peterborough PE6 0QH	Located 1.5km east Eye Green SSSI/LNR, 3.2km from Dogsthorpe Star SSSI/LNR, and 4.7km north of Nene Washes Ramsar site	Approximately 30% of the site is in Flood Zone 3, the remainder is in flood zone 1	Located 695m northwest of the Scheduled Ancient Monument (SAM) Roman field system and drove at	Grade 2 and 3 with high likelihood of BMV land (>60%). Appears to be >14% presence	The landscape surrounding the site is very flat with few trees or other interruptions. The development would be highly visible from the A47 and Bukehorn road.	Unavailable, 157ha	This site is considered more acceptable in terms of flood risk compared to the proposed site. This site does not comprise lower grade agricultural land. There are also additional heritage

				Pode Hole Farm. Further specialist input into impact on the SAM is required	of Grade 2 land	High voltage transmission line cross the landscape, reducing its quality. No PProWs within the vicinity of the site		considerations that come from this site. The landowner of this site was contacted and did not respond, rendering this site unavailable. Because of these considerations this site is not considered preferable to the proposed site.
2	Land at Middle West Farm, The Causeway, Thorney PE6 0QH	Located 2.5km east of Eye Green SSSI/LNR, 4.2km east of Dogsthorpe Star Pit LNR/SSSI, and 5km north of Nene Washes Ramsar Site	Appx 95% of the site is located in Flood Zone 3 with the rest in Flood Zone 1 or 2	Located 465m north of the Scheduled Ancient Monument (SAM) Roman field system and drove at	Grade 2 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions. The development would be highly visible from the A47 and B1443.	Unavailable, 96.5ha	This site is considered slightly more acceptable in terms of flood risk compared to the proposed site. However, this site comprises a higher grade of agricultural land

				Pode Hole Farm. Further specialist input into impact on the SAM is required		High voltage transmission line cross the landscape, reducing its quality. No PRowS within the vicinity of the site		and has additional potential impacts to a scheduled ancient monument. The landowner of this site was contacted and did not respond, rendering this site unavailable. Because of this, this is considered less suitable than the proposed site for solar farm development.
3	Land at Rose Farm, Bukehorn Road, Thorney PE6 0QH	Located 3.4km east of Eye Green SSSI/LNR, 5.2km east of Dogsthorpe Star Pit LNR/SSSI, and 5km north of	Flood zone 3 only	Located 770m northeast of Scheduled Ancient Monument (SAM)	Grade 2 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions. The development	51ha	This site is considered equivalently difficult in terms of flood risk to the proposed site. However, this site

		Nene Washes Ramsar Site		Roman field system and drove at Pode Hole Farm. Further specialist input into impact on the SAM is required		would be highly visible from the A47 and B1443. High voltage transmission line cross the landscape, reducing its quality. No PRowS are within the vicinity of the site		comprises grade 2 agricultural land which is of a higher grade than the proposed site. There are also potential impacts to the scheduled ancient monument that creates additional risk Therefore, the proposed site was considered more suitable for solar farm development.
4	Land north of Pode Hole Farm, The Causeway, Thorney PE6 0QH	Located 2.5km east of Eye Green SSSI/LNR, 4.2km east of Dogsthorpe Star Pit LNR/SSSI, and 4.8km north of	Approximately 30% flood zone 3 and 60% flood zone 2	Located immediately opposite Scheduled Ancient Monument (SAM) Roman field	Grade 2 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions. The development would be highly	19.1ha	This site is considered more acceptable in terms of flood. However, this site comprises higher grade agricultural land and does not

		Nene Washes Ramsar site		system and drove at Pode Hole Farm. Further specialist input into impact on the SAM is required		visible from the A47 and surrounding homes at Pode Hole Farm, Middle East and Middle West Farm, and Lime Cottages.		meet minimum size requirements for the proposed development. Therefore, the proposed site is considered more suitable for solar farm development.
5	Pasture House Farm Quarry, Willow Hall Ln, Thorney PE6 0QN	Located 1.2km east of Eye Green SSSI/LNR, 2.9km east of Dogsthorpe Star SSSI/LNR, and 3.9km north of Nene Washes Ramsar site	Flood zone 1	Located 388m north of SAM Iron Age Settlement at Bar Pastures, 850m west of SAM Pode Hole Farm, and 785m northwest	Grade 3 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions. The development would be highly visible from the A47 and Willow Hall Lane. The presence of high voltage transmission lines	The site is 56.3ha but 22.3ha of land is occupied by a gravel quarry	This site is considered more acceptable than the proposed site in terms of flood risk. This site also comprises grade 3 agricultural land which could be equivalent or worse than the proposed site. However, the site is 56.3ha and

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				of SAM bowl barrow at Bar Pasture Farm		and the active quarry significantly diminish the quality of the landscape		22.3 ha of that is occupied by a gravel quarry leaving only 34ha of land available for solar development. This does not meet the minimum 50ha site size threshold for viability. Therefore, the proposed site is considered more suitable.
6	Land at Bar Pasture Farm, Willow Hall Lane, Thorney PE6 0QN	Located 1.3km east of Eye Green SSSI/LNR, 3km from Dogsthorpe Star SSSI/LNR, and 3.4km north of Nene Washes Ramsar site	Flood zone 1	Located within Scheduled Ancient Monument Iron Age and Roman Settlement	Grade 3 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions, though there would be minimal intervisibility from	41.6ha	This site is in flood zone 1 so is considered more suitable in terms of flood risk than the proposed site. This site is also located on grade 3 agricultural land which is either

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				at Bar Pastures.		the public realm aside from willow lane and long-range views from Hayne's Farm and the caravan park on the edge of the village of Eye.		equivalent or worse than the proposed site. However, this site is 41.6ha in size which is less than the 50ha minimum requirement for site viability. Therefore, this site is considered less suitable for solar farm development than the proposed site.
7	Land at Pode Hole Farm, Thorney PE6 0QH	Located 2km southeast of Eye Green SSSI/LNR, 3.6km east of Dogsthorpe Star SSSI/LNR, and 3.3km north of	Appx. 60% flood zone 1 and 30% flood zone 3 with the remainder as flood zone 2	100m from SAM Roman Settlement at Bar Pastures, 100m from SAM Bowl Barrow at	Grade 3 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions, though there would be minimal	Site is 68.1ha but approximately 95% of the land is occupied by Pode Hole Quarry	The site is predominantly located in flood zone 1 so has lower risk of flooding than the proposed site. This site also comprises grade 3 land which is of

		Nene Washes Ramsar site		Bar Pastures		intervisibility from the public realm		equivalent or worse quality than the proposed site. However, this site is predominantly occupied by Pode Hole Quarry leaving minimal site area for solar farm development. Therefore, this site is considered less suitable than the proposed site for solar farm development.
8	Land at Tanholt Farm, Eyebury Rd, Eye PE6 7TH	Located 955m south of Eye Green SSSI/LNR, 1.8km east of Dogsthorpe Star SSSI/LNR, and 3km north of	Flood Zone 1	420m from SAM Roman Settlement at Bar Pastures. Further specialist	Grade 3 with a high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions, with limited potential for	Unavailable, 57.2ha of available land	This site is located in flood zone 1 indicating it is more suitable than the proposed site in terms of flood risk. This site also comprises grade 3

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		Nene Washes Ramsar site		input into impact upon SAM site required		intervisibility from Hayne's farm and the caravan park on edge of Eye. Permissive footpath Thorney 6 crosses the site through the quarry. The presence of high voltage transmission lines and multiple quarries in the immediate vicinity lessens the quality of the landscape		agricultural land indicating that it is of equivalent or worse quality than the proposed site. However, this site is in closer proximity to the scheduled ancient monument at Bar Pastures than the proposed site. The landowner of this site was contacted and did not respond, rendering this site unavailable. These heritage impacts indicate that this site is considered less suitable for solar farm development than the proposed site.
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9	Land at Willow Hall Farm, Willow Hall Lane, Peterborough PE6 0QN	Located 1.6km southeast of Eye Green SSSI/LNR, 2.6km east of Dogsthorpe Star SSSI/LNR, and 3.3km north of Nene Washes Ramsar site	Flood Zone 1	Located 585m south of SAM Bar Pastures, 180m west of grade II listed Willow Hall, and 100m west of the grade II listed Priors Farmhouse	Grade 3 with high likelihood of BMV (>60%)	The landscape surrounding the site is very flat with few trees or other interruptions, with limited potential for intervisibility from Hayne's farm and the caravan park on edge of Eye. Permissive footpath Thorney 6 crosses the site through the quarry. The presence of high voltage transmission lines and multiple quarries in the immediate vicinity lessens	39.2ha	The site is considered more suitable in terms of flood risk due to being in flood zone 1 while the proposed development is in flood zone 3. This site comprises grade 3 agricultural land which is of equivalent or worse quality than the land at the proposed site. However, this site is 39.2ha which is less than the minimum site size requirement of 50ha for viability. Therefore, the proposed site is considered more suitable than this
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						the quality of the landscape		site for solar farm development.
10	Land south of Oxney Road, Peterborough PE1 5EX	Located 1.2km north of Nene Washes SSSI. The solar development could have significant impact on water fowl that nest in the area	Flood Zone 3	Located approximately 400m south of the grade II* listed Oxney Farmhouse and associated barn. Also located 350m from the bronze age scheduled ancient monument at Flag Fen	Grade 1 and 2 with a high likelihood of BMV (>60%)	The landscape is very flat and there are few interruptions or screening from trees or hedges. The site lies adjacent to Peterborough and as a result would be highly visible from the public realm though the views are currently of low value due to existing development.	73.5ha	The site is considered to have equivalent flood risk as the proposed site. This site comprises higher grade 1 and 2 agricultural land whereas the proposed site comprises primarily grade 3a land. Therefore, this site is considered less suitable for solar farm development than the proposed site.

11	Land north of Third Drove, Peterborough PE1 5QR	Located directly adjacent to the River Nene and Nene Washes Ramsar site. Solar farms are considered to have unacceptable impact to water fowl that nest there	Flood zone 3	Located immediately south of the bronze age scheduled ancient monument at Flag Fen	Grade 1 and Grade 2	The landscape is very flat and there are minimal screening features such as hedges or trees. The development would be highly visible from the PRoW along the River Nene and Nene Washes Ramsar Site though the presence of a power plant lessens the quality of views somewhat	Usable area of fewer than 50ha due to presence of power plant	The site is considered unacceptable on multiple planning grounds including flood risk, agricultural land quality, size, proximity to ecological features, and impact to public amenity.
12	Land at Northey Farm, Peterborough PE6 7YZ	The site is immediately adjacent to the River Nene and	Flood zone 3	Part of the site is occupied the Flag	Grade 2	The landscape is very flat and there are minimal screening	163ha	The site is considered unacceptable on multiple planning

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		Nene Washes Ramsar Site and it is considered that solar farms would have an unacceptable impact on water fowl that nest there		Fen Archaeological site that comprises the bronze age scheduled ancient monument		features such as hedges or trees. The development would be highly visible from the PRoW along the River Nene and Nene Washes Ramsar Site.		grounds including flood risk, impact to ecological sites, impact to heritage assets, and the presence of grade 2 agricultural land
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Following this analysis, PACE conducted a narrower search of sites not on the respective SHLAAs that could have the potential for a solar development and contacted the landowners of these sites. Only three additional potential sites were identified, all within Fenland District Council. Figure 7 shows these alternative sites within the FDC boundary and within the study area. Only the landowner of the proposed site responded to the applicant's request to develop a solar farm.

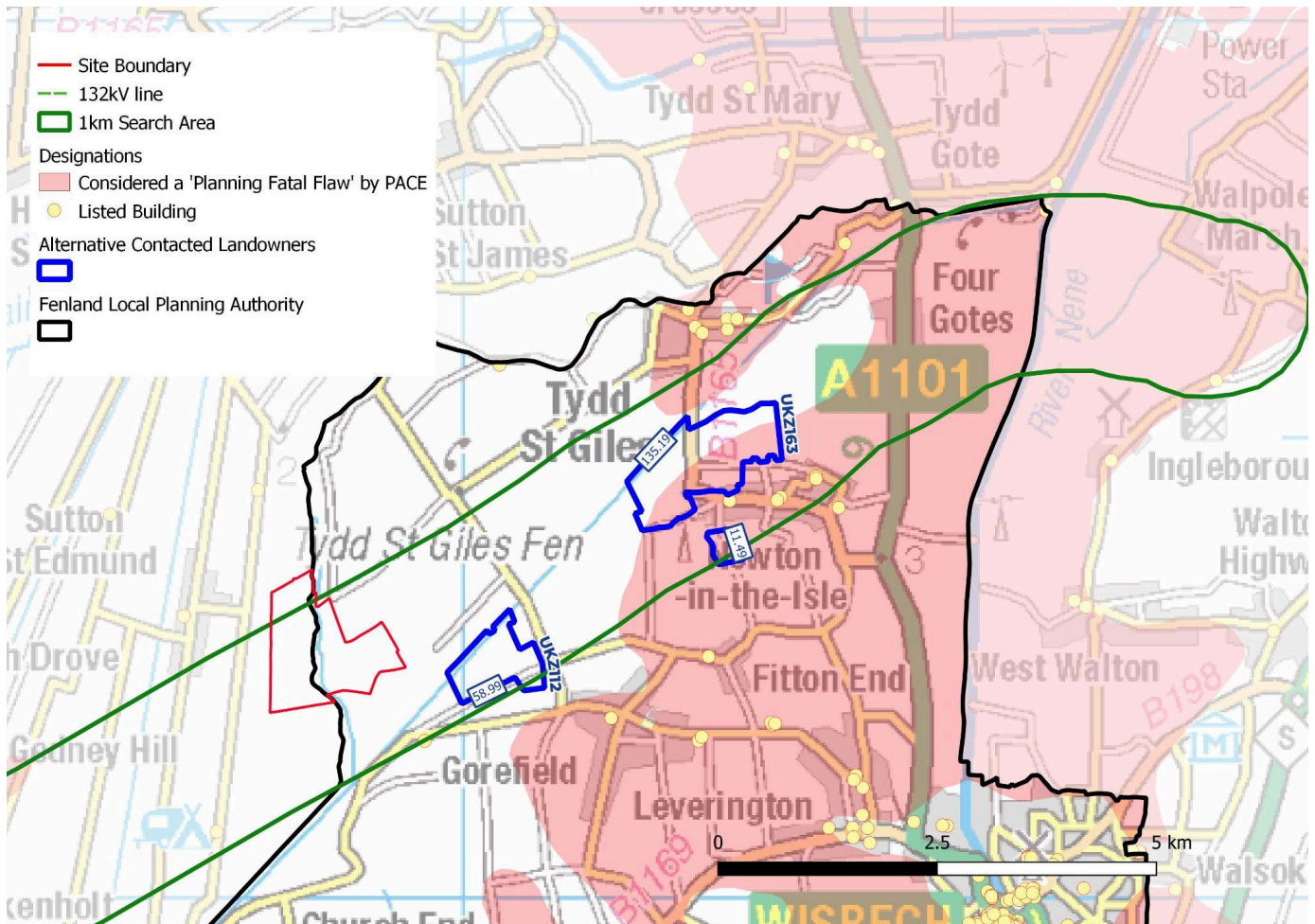


Figure 7 - Alternative (non-SHLAA) sites found within Fenland District and site study are

1.7 Impacts and conclusion

1.7.1 The proposal allows for continued agricultural use and encourages biodiversity improvements around arrays

The scheme allows for continued agricultural use by allowing sheep to graze underneath and around the solar panels. The Inspector on appeal ref: APP/L3245/W/23/33314982 confirmed this is an acceptable form of continued agricultural use and recognised the change from arable to pasture from sheep grazing between and the associated change from arable to pasture would improve soil health. Appeal ref APP/B3030/W/21/3279533 also recognised that sheep grazing is an accepted part of solar farm developments as a means of naturally managing the pasture.

At the end of the development's life, all equipment will be removed and the site restored to its current use. Therefore, there will be no loss of agricultural land and agriculture can continue throughout operation. Additionally, the project brings a very substantial net gain in biodiversity.

The current land use for intensive agriculture provides a limited range of ecosystem services. The proposed solar farm retains a food provisioning function but make significant additional contributions towards ecosystem services, as referenced in NPPF paragraph 180(b):

- Supporting services-
 - Responding to NPPF paragraph 174(d), the project will deliver significant biodiversity net gain of 70.26% for habitat units and a 103.61% gain for hedgerows and 0% river units due to the absence of rivers on site, compared with the existing site, as confirmed in the Biodiversity Net Gain report. These will include wildflower meadows, hedge and tree planting, installations of bird/bat boxes and solitary bee hotels. These measures can be secured via a Management Plan planning condition.
 - The creation of over 100% in new hedgerows, more biodiverse field margins and new grasslands will provide a considerable benefit for pollinators and for supporting prey species.
- Regulating services-
 - The importance of the development in regulating the climate by reducing carbon emissions carries very significant weight in planning decisions and described in the submitted Planning Statement.
 - Pollution by reducing emissions to air or water from other forms of energy generation.
- Provisioning services-
 - The site can be grazed with sheep throughout operation. This will benefit both food production and biodiversity. As the development will be removed at the end of its life, this does not prevent the option of a more intensive agricultural use in the future, should national or local priorities change, and so the solar farm will not have a negative impact on food security (see Section 1.7.2).

- Energy generation is a major benefit from this project.

Therefore, the proposal allows for continued agricultural use and encourages biodiversity improvements around arrays. In accordance with policy, the development will secure far greater benefits from natural capital and ecosystem services than the current use solely for agriculture.

1.7.2 Effect of development on food security

Other than footnote 62 of the NPPF, there are no national or local policies, guidance or strategies that relate to food security and production.

There is no planning policy that prevents use of agricultural land of any grade for solar farms. NPPF Footnote 62 notes that *“where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality. The availability of agricultural land used for food production should be considered, alongside other policies in this Framework, when deciding what sites are most appropriate for development”*.

Ground mounted solar currently uses 0.1% of all UK land, according to Carbon Brief. The Government's stated five-fold increase will require just 0.5% of the land currently used for farming (0.29% of total land area) – roughly half of the space taken up by golf courses.

The UK Government Food Security Report, published in December 2021, is explicit: *“The biggest medium to long term risk to the UK's domestic production comes from climate change and other environmental pressures like soil degradation, water quality and biodiversity.”*

It says that climate change could reduce the UK's stock of high-grade agricultural land by nearly three-quarters by 2050, while solar farms are not cited as a risk. Because solar farms generate near zero-carbon electricity, they help address climate change. This means they are helping to improve the UK's food security.

Solar preserves agricultural land. Planning permission for the solar farm will be time limited and will be completely dismantled at the end of their operation. Solar does not take agricultural land, it borrows it, and because agricultural land under a solar farm is in effect left fallow, soil health can recover.

Planning permission for the solar farm will be time limited. It will be fully removed at the end of its operational life and so this land will only be borrowed from intensive agriculture. In the meantime, the lower intensity use allows soils to rest. The use does not prevent the option of a more intensive agricultural use in the future, should national or local priorities change, and so the solar farm will not have a negative impact on food security.

The Inspector on Appeal ref: APP/C1570/W/23/3319421 concluded that there was no compelling evidence that taking out of production almost 55ha of BMV for a 40-year duration, would have a significant negative impact on food security either on its own or cumulatively with other BMV losses, nor that it would be likely to increase imports from other countries. The Government

Food Strategy, published in 2022, stated that the UK is largely self-sufficient in wheat, most meats, eggs, and some sectors of vegetable production.

On a recent solar appeal on BMV land ref: APP/G2713/W/23/3315877, the Inspector noted at Paragraph 22 of their decision letter that *“the specific way agricultural land is used is not a matter that is subject to planning controls...Given this, the fact that the proposal would limit the ability to carry out any arable farming does not, in my opinion, mean that it results in the loss of agricultural land when it can still be used for other agricultural uses. Furthermore, current government schemes actually encourage farmers to take land out of production and put it to grass, meadows, or trees for carbon capture”*. As such, the Inspector was satisfied that the proposed use of the land on that appeal case would not be detrimental to the nation’s food security.

It is also noted that the Inspector on appeal ref APP/B3030/W/21/3279533 considered that value of the proposed solar farm measurement in terms of national energy production and security against the net value of arable crop production in the UK is not an assessment that an individual appellant or LPA could realistically undertake for any one proposal.

In summary, the use of a small area of BMV land for a solar farm, which will be removed at the end of its life, will have a negligible effect on food production. Indeed, the impacts that climate change is already having on food production on the site illustrates how important tackling this issue is.

1.7.3 Most compelling evidence/significant benefits

The significant benefits create a compelling case for using a relatively small amount of higher-grade land.

The **reversibility** of effects is a compelling argument in favour of the solar energy development because any harm associated with it should be removed after 40 years, with the exception of the substation. The duration of the proposal is relatively short compared to the enduring nature of the rural landscape.

Climate Change - Whilst the Government, FDC, and SHDC seek to urgently tackle climate change, it is essential to locate and develop suitable sites for renewable energy generation. Solar is critical to achieving the required increase in clean energy supply. This is evidenced by the March 2023 Powering up Britain strategy that includes an ambition for a five-fold increase in new solar power by 2035, from 14,000MW today to around 70,000MW. This has been translated into a planning policy expectation in the NPS for Renewable Energy Infrastructure (EN-3, January 2024), which is a material consideration in local decision-making.

The proposed project will contribute significant renewable energy, directly addressing the climate emergency and supporting the UK’s transition away from fossil fuels, and contribution to global commitments made at COP26.

Farm Diversification - In the case of the proposed development, the regular income from the solar farm will make an important contribution to the continued viability of the farm holding, including investment in farming activities and protecting themselves during years of low agricultural yield. This is becoming increasingly important as a changing climate affects agricultural yields and the Government is committed to reducing agricultural subsidies to enable farmers in England. The previous section has confirmed that there will be no significant effect on **food security**. The lower intensity use created by the proposed solar panels allows soils to rest. The use does not prevent the option of a more intensive agricultural use in the future, should national or local priorities change, and so the solar farm will not have a negative impact on food security.

Ecosystem Services - The solar farm will deliver a range of ecosystem services that significantly outweigh those existing on the current farm. The planting of new trees, hedges and meadow around the solar farm to deliver an increase in habitats. The proposals will provide a **significant BNG of 173%** for habitat units. This will support the diversity and abundance of flora and fauna, and in accordance with policy, will secure wider benefits from the natural capital and ecosystem services.

Strong Economy - As part of its social objective, the NPPF aims to *“support strong, vibrant and healthy communities”*. The proposed development would bring important local community benefits. According to ONS data, over 5,000 households were fuel poor in South Holland (13%) and Fenland (13.9%) in 2021, which is well above the UK averages. Sharp increases in energy bills since these figures were gathered risk pushing many more into fuel poverty.

Businesses are not protected by the current energy price cap and are being subjected to significant inflationary pressures, which is dampening confidence in business growth and is seeing businesses increasingly plan for job cuts or even closure and there are comparable impacts on schools and other parts of important social infrastructure. Therefore, the social and economic benefits to the area of feeding low-cost secure energy supplies into the local distribution network should carry significant weight.

The development will provide significant and ongoing business rates contributions, which support delivery of local services. It will also employ people during construction and operation. It is difficult to be definitive but during construction it is expected to employ the equivalent of 16-20 full time employees plus around 100 sub-contractors over the expected 20-week construction period. This brings value to the local area in the form of accommodation and other living expenditures for construction staff.

National planning policies encourage developments that support the local economy and enable rural diversification. An economic objective of the NPPF is to *“help build a strong, responsive and competitive economy, by ensuring that land of the right types is available in the right places and at the right time to support growth, innovation, and improved productivity.”* Paragraph 85 directs that *“Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider*

opportunities for development.” It goes on at Paragraph 86c to “seek to address potential barriers to investment, such as inadequate infrastructure, services or housing, or a poor environment;” Paragraph 88b notes that decisions should enable “the development and diversification of agricultural and other land-based rural businesses” and Paragraph 87 goes on to state that “Planning policies and decisions should recognise that sites to meet local business and community needs in rural areas may have to be found adjacent to or beyond existing settlements...”

The proposed development will provide essential energy infrastructure to serve existing homes and the needs of local businesses. The need for electricity is only going to grow as society moves to electric heating and transportation, therefore economic growth, and the transition to a net zero economy could be severely constrained without enabling new renewable energy projects such as the proposed. The NPPF directs that the economic benefits of the proposals should carry significant weight.

In summary, compliance with policy and guidance, combined with significant benefits create a compelling case for using a portion of higher-grade land.

2. Flood risk sequential analysis

2.1 Policy context for flood risk

A sequential analysis is required because the site is within an area defined as being at risk of flooding. Solar farms are defined as “essential infrastructure” in the NPPG [Paragraph: 066 Reference ID: 7-066-20140306] and therefore a sequential assessment and exceptions test are required. The NPPF seeks to direct new development to areas of the lowest probability of flood risk. Therefore, this sequential analysis has been prepared to ascertain whether there are other reasonably available sites for the proposed development in areas with a lower probability of flooding.

Paragraph 168 of the NPPF states that the aim of the sequential analysis is to:

“Steer new development to areas with the lowest risk of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding from any source. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.”

In identifying the scope for the sequential analysis, the NPPG [Paragraph: 033 Reference ID: 7-033-20140306] states that the sequential analysis should apply to an area which will be defined by local circumstances relating to the study area for the type of development proposed.

Paragraph 169 of the NPPF states that: *“if it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied.”*

Table 2 (Flood risk vulnerability classification) of the NPPG [Paragraph: 066 Reference ID: 7-067-20140306] outlines the flood risk classification of each type of development and the proposed development falls within the “essential infrastructure” category.

Table 3 (Flood risk vulnerability and flood zone ‘compatibility’) of the NPPG states that essential infrastructure can be appropriate in FZ3 with an exception test. It also confirms in Paragraph 067 [Reference ID: 7-067-20140306] that such facilities should remain operational and safe for users in times of flood; result in no net loss of floodplain storage, not impede water flows, and not increase flood risk elsewhere.

The sequential analysis seeks reasonably available alternative sites within a reasonable study area, that is within FZ1 and 2 (i.e. lower risk of flooding than the application site) and are appropriate for the proposed development.

The application is accompanied by a site-specific Flood Risk Assessment (FRA) demonstrating that the site will be safe for its lifetime without increasing risk elsewhere, agreement of appropriate flood protection, resilience and warning measures and appropriately designed

drainage systems. Therefore, the proposed development will be acceptable in policy terms relating to flood risk.

The application is also accompanied by an exceptions test, which provides site specific details on how the applicant will manage flood risk should permission for the proposed development be granted in accordance with the NPPG. The exceptions test is part of the FRA and SWMP submitted with this application.

The study area has been demonstrated in Section 1.5 and the method used to identify suitable sites within the study area has been discussed in Section 1.6. Figure 9 below shows that the majority of the study area is located within Flood Zone 3 with only small portions of the area nearest to Peterborough being in Flood Zone 1.

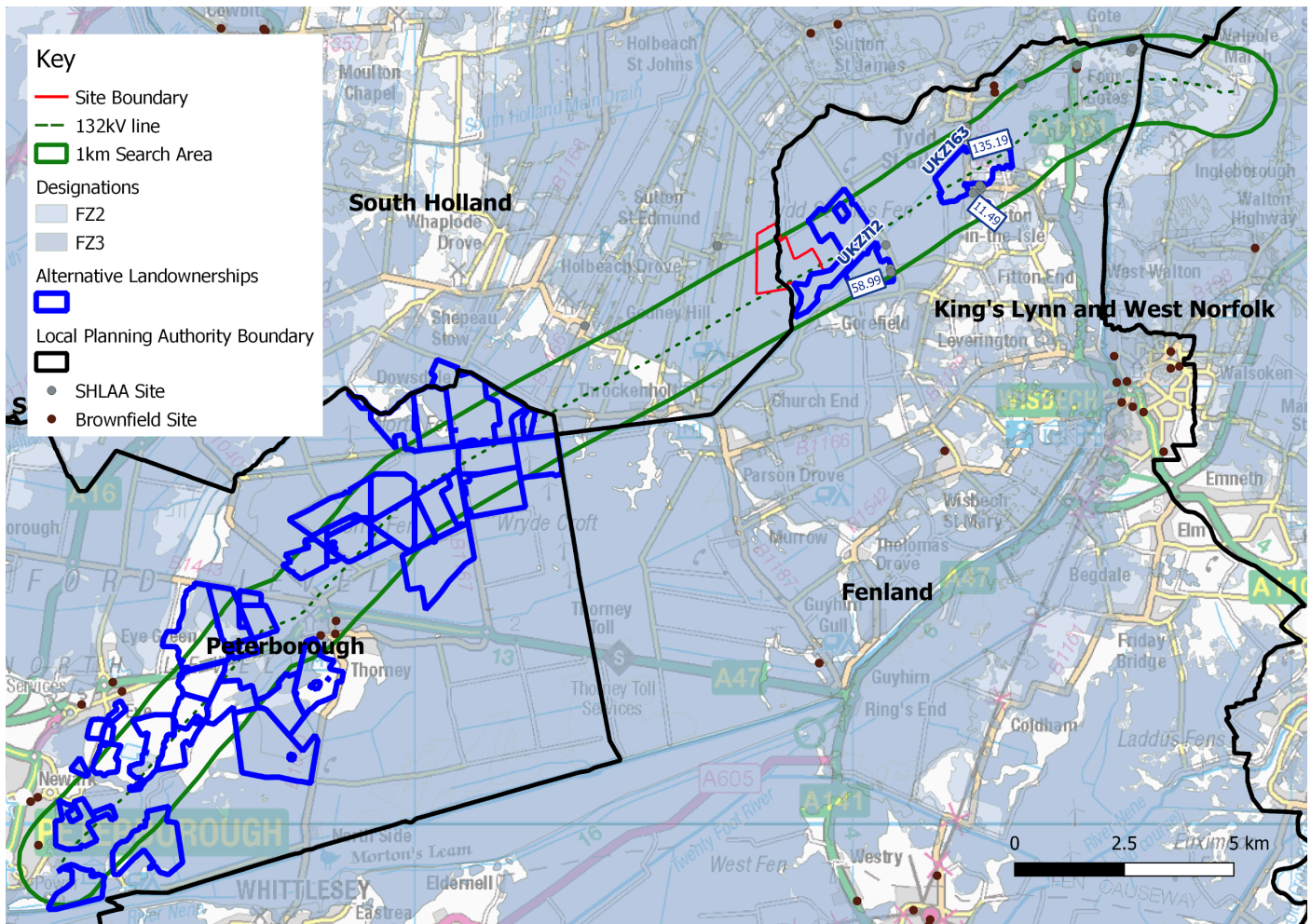


Figure 9 - Map showing the Flood Zones within the study area

These sites were assessed in table 1 and determined not to be suitable for development for various reasons. Therefore it is deemed that there are no areas of lower flood risk that are considered suitable for development.