Stonestreet Green Solar

Environmental Impact Assessment Scoping Report

Planning Inspectorate Reference EN010135

April 2022

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Environmental Impact Assessment Scoping Report
Planning Inspectorate Reference EN010135
Prepared on behalf of EPL 001 Limited

Project Ref:	33158/A5/Scoping	33158/A5/Scoping
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Date:	January 2022	April 2022
Prepared by:	AD, RD, LW	BL / RD / LW
Checked by:	BL	BL

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CONTENTS

FIGURES

APPENDICES (provided separately)

1. Introduction

1.1. Introduction to the Project

1.1.1. Stonestreet Green Solar ('the Proposed Development') comprises the proposed construction, operation and maintenance, and decommissioning of a renewable energy generating project on approximately 189 hectares ('ha') (467 acres) of land located to the north of the village of Aldington and predominantly within the administrative areas of Ashford Borough Council ('ABC') and Kent County Council ('KCC').

1.1.2. The Proposed Development will include solar photovoltaic ('PV') arrays and on-site energy storage, together with associated infrastructure and an underground cable connection to the existing National Grid ('NG') Substation at Sellindge[1]. The Proposed Development site (the 'Site') has been carefully selected to provide energy close to where it can be exported to the electricity grid, in a way that minimises local impact and maximises sustainability, environmental and social outcomes. The Proposed Development will generate green electricity and will have the capability to export and import (for storage on site) up to 99.9 Mega-Watts ('MW') of electricity at any time. Any stored energy can then be discharged when required to meet national grid demand profiles.

1.1.3. As the Proposed Development has an expected energy generating capacity in excess of the 50MW threshold for onshore generating stations in England, it constitutes a 'nationally significant infrastructure project' ('NSIP') under sections 14(1)(a) and 15(1) and (2) of the Planning Act 2008 (as amended) ('PA2008'). Accordingly, the Applicant intends to make an application for a Development Consent Order ('DCO') to authorise the Proposed Development. The DCO application will include a description of the development proposal and will be accompanied by an Environmental Statement ('ES') prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('EIA Regulations').

[1] The exact point of connection for the project is subject to final confirmation from UK Power Networks but will be confirmed prior to submission of the DCO application. The Scoping Report therefore includes two alternative options and presents a "worst-case" analysis.

1.2. Introduction to the Applicant

1.2.1. The Applicant for the Proposed Development is EPL 001 Limited[2] (hereafter referred to as the 'Applicant'), a wholly-owned subsidiary of Evolution Power Limited who is a UK-based independent solar developer established to develop affordable and sustainable renewable energy projects that will help the UK meet its legally binding 2050 net zero emissions target. The Directors of Evolution Power Limited have installed and/or financed more than 50 UK solar PV projects, including four of the five largest solar projects built in the UK during the renewable obligation certificate ('ROC') subsidy period.

1.2.2. The Applicant aims to work with local communities in connection with the Proposed Development and to maximise opportunities for community participation, create employment opportunities, and provide meaningful community benefits.

1.3. Request for Scoping Opinion

1.3.1. The Environmental Impact Assessment ('EIA') requirement for NSIPs is transposed into law through the EIA Regulations. The EIA Regulations specify which developments are required to undergo EIA and schemes relevant to the NSIP planning process are listed under either 'Schedule 1' or 'Schedule 2'. Those developments listed in Schedule 1 must be subject to EIA, while developments listed in 'Schedule 2' must only be subject to EIA if they are considered *'likely to have significant effects on the environment by virtue of factors such as its nature, size or location'* (Regulation 3(1) of the EIA Regulations). The selection criteria for Schedule 2 development are set out in Schedule 3 of the EIA Regulations.

1.3.2. The Proposed Development is a 'Schedule 2' development under paragraph 3(a) of Schedule 2 of the EIA Regulations as it constitutes an *'industrial installation for the production of electricity, steam and hot water'* and is not a project listed in Schedule 1.

[2] Company number 12444050, registered office at 2nd Floor, Regis House, 45 King William Street, London, United Kingdom, EC4R 9AN.

1.3.3. This EIA Scoping Report presents an initial analysis of the likely significant environmental effects of the construction, operation and maintenance, and decommissioning of the Proposed Development. This Scoping Report has been prepared by Barton Willmore, now Stantec, Institute of Environmental Management and Assessment ('IEMA')[3] qualified assessors, on behalf of the Applicant.

1.3.4. It is important to ensure that a proportionate EIA will be carried out. The benefits of delivering a proportionate EIA have been defined by IEMA as:

- driving collaborative action and understanding across the EIA community;
- focussing assessments so their findings are accessible to all stakeholders;
- reducing uncertainty and risk within project consenting;
- saving time and costs for developers, consenting authorities and consultees; and
- allowing more time to be spent exploring the delivery of environmental improvements.

1.3.5. One of the key aims of delivering a proportionate EIA is to allow scoping to be a core process running through the EIA. Therefore, an integral element of this report is to focus on aspects which the Applicant believes can be scoped out in the interest of proportionality, and to describe the proposed approach to EIA.

1.3.6. This Scoping Report is submitted in support of a request pursuant to Regulation 10 of the EIA Regulations for a Scoping Opinion from the Planning Inspectorate ('Inspectorate') on behalf of the Secretary of State ('SoS') on the scope and level of detail, of the information to be provided in the ES. It includes the information required by Regulation 10(3) as follows:

a) *a plan sufficient to identify the land* (see Figure 2);

b) *a description of the proposed development, including its location and technical capacity* (see this Section 1 and Section 4);

[3] Available at: https://www.iema.net/resources/reading-room/2017/07/18/delivering-proportionate-eia Accessed March 2022

c) *an explanation of the likely significant effects of the development on the environment* (see Sections 8 to 16); *and*

d) *such other information or representations as the person making the request may wish to provide or make* (see Figures 1 to 16 and Appendices 1 to 5).

1.3.7. Following the completion of the surveys, assessments and consultation processes outlined in this Scoping Report, an application for a DCO will be made to the Inspectorate on behalf of the SoS for determination in accordance with the PA2008. The application will include an ES prepared in accordance with the Scoping Opinion and informed by the feedback received from consultees.

1.4. Location and Surrounding Area

1.4.1. The Proposed Development (refer to Figure 1) is located approximately 2.4km to the south-east of Ashford and approximately 13.7km to the west of Folkestone town centre, in the county of Kent. It is situated on land located to the north of the village of Aldington that is currently predominantly used for arable cropping and grazing.

1.4.2. The High Speed 1/Channel Tunnel Rail Link (‘HS1’) is located to the north of the site boundary and is within 100m at its closest point. The M20 motorway carriageway lies approximately 45m further to the north of HS1. On the opposite side of the HS1 railway line to the site (between HS1 and the M20 motorway), there is a UK Power Networks (‘UKPN’) and NG substation, and a sewage treatment works.

1.4.3. There is an existing UKPN 11 kilovolt ('kV') substation and access track located within the cable route corridor north-eastern part of the site, but this will not be used for the Proposed Development, although the field surrounding forms part of the project site. There is also an existing c.11MW solar project located to the east of the main part of the site (lying to the south of the cable route corridor).

1.4.4. The site is irregularly shaped, comprising agricultural fields delineated by hedgerows and tree belts (further arboricultural assessment work will be undertaken prior to the completion of the ES). It extends to approximately 189ha (approximately 467 acres).

1.4.5. The East Stour River flows in an east to west direction within, and adjacent to, the northern part of the site. A large pond is located approximately 25m to the east (at its closest point to the site) of the part of the site that lies adjacent to Station Road, near Backhouse Wood.

1.4.6. Station Road / Calleywell Lane runs north-south within and adjacent to the central part of the site. Bank Road / Roman Road bisects the central and western parts of the site.

1.4.7. Residential dwellings of the village of Aldington are located predominantly to the south and east of the site. Residential dwellings within the village of Stonestreet Green are located adjacent to the east of the site.

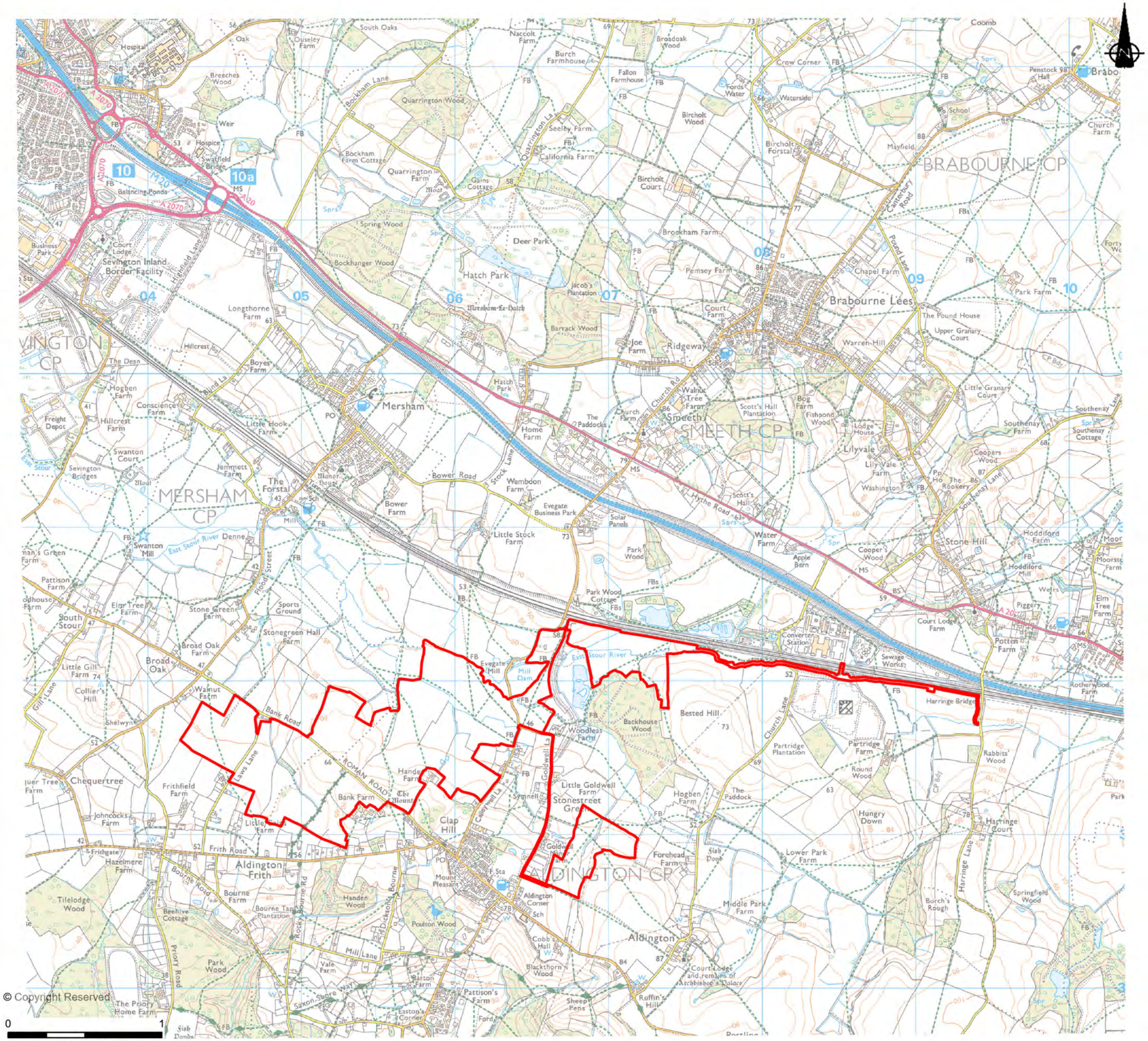
1.5. The Scoping Boundary

1.5.1. Figure 2 illustrates the scoping boundary that has been used to inform this Scoping Report. The scoping boundary is defined as the area within which the Proposed Development will be located.

1.5.2. Whilst a grid connection offer from UKPN has been accepted by the Applicant, at the time of writing, there are two potential connection points under review and the Applicant is waiting for confirmation of the final connection point from UKPN. Therefore, the scoping boundary includes the land required to deliver both options. The Applicant’s preferred route (the ‘Preferred Route') lies entirely within the administrative boundaries of ABC and KCC and connects directly into the Sellindge Substation, whereas the alternative route (the ‘Alternative Route’) connects into the Sellindge Substation via an existing nearby tower. The Alternative Route would require additional land, of which approximately 360m of cable route and 500m of access track would be located within the administrative boundary of Folkestone and Hythe District Council (‘FHDC’).

1.5.3. The final grid connection route will be confirmed prior to the submission of the DCO application, and the Order Limits will reflect this. For clarity, the land required for the two alternative grid connection options (the Preferred Route and the Alternative Route) is shown in Figure 3: Grid Connection Cable Route Options.

Figure 1: Location Plan



0 1
Kilometre

KEY

Site Boundary

Notes:

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

EPL 001 LIMITED

PROJECT

STONESTREET GREEN SOLAR

DRAWING TITLE

FIGURE 1: LOCATION PLAN

DRG No.		REV
GM12014-012		A
DRG SIZE A3	SCALE 1:25,000	DATE MARCH 2022
DRAWN BY CT	CHECKED BY SS	APPROVED BY JF

wardell armstrong

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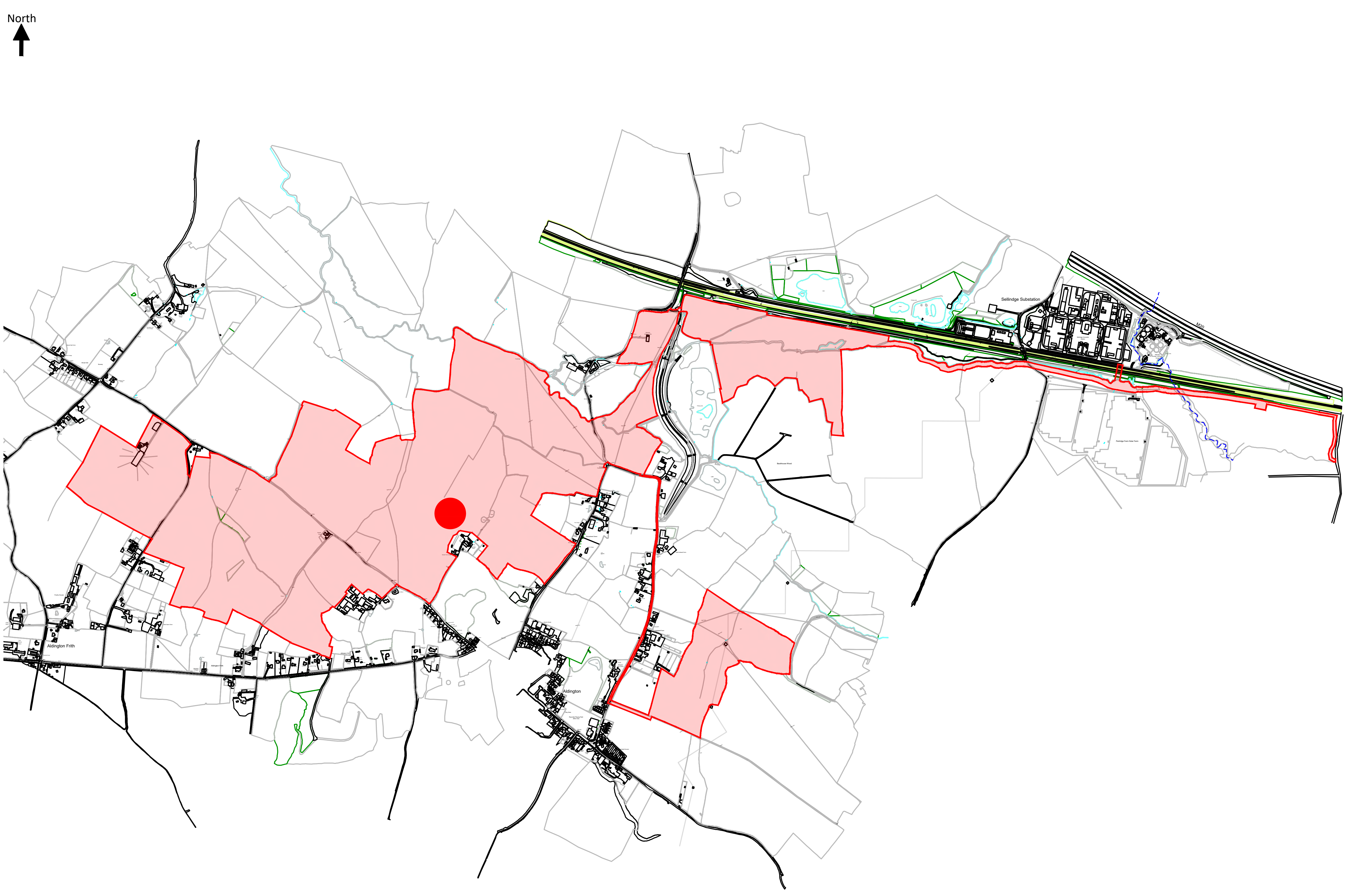
- GLASGOW
- LONDON
- MANCHESTER
- NEWCASTLE UPON TYNE
- SHEFFIELD
- STOKE ON TRENT

Figure 2: Boundary for EIA Scoping



Drawing not to scale,
For information purposes only.
Not for construction.

Notes:

Postcode: TN25 7HP W3W: paints.embodied.warp

Key:
Site Boundary
District Boundary
Site Centre

evolution power

Evolution Power Holdings Ltd
The Core
Gore Cross Business Park
Bridport
Dorset DT6 3FH
Email: energy@evolutionpower.co.uk
www.evolutionpower.co.uk

Project Name:
Stonestreet Green Solar

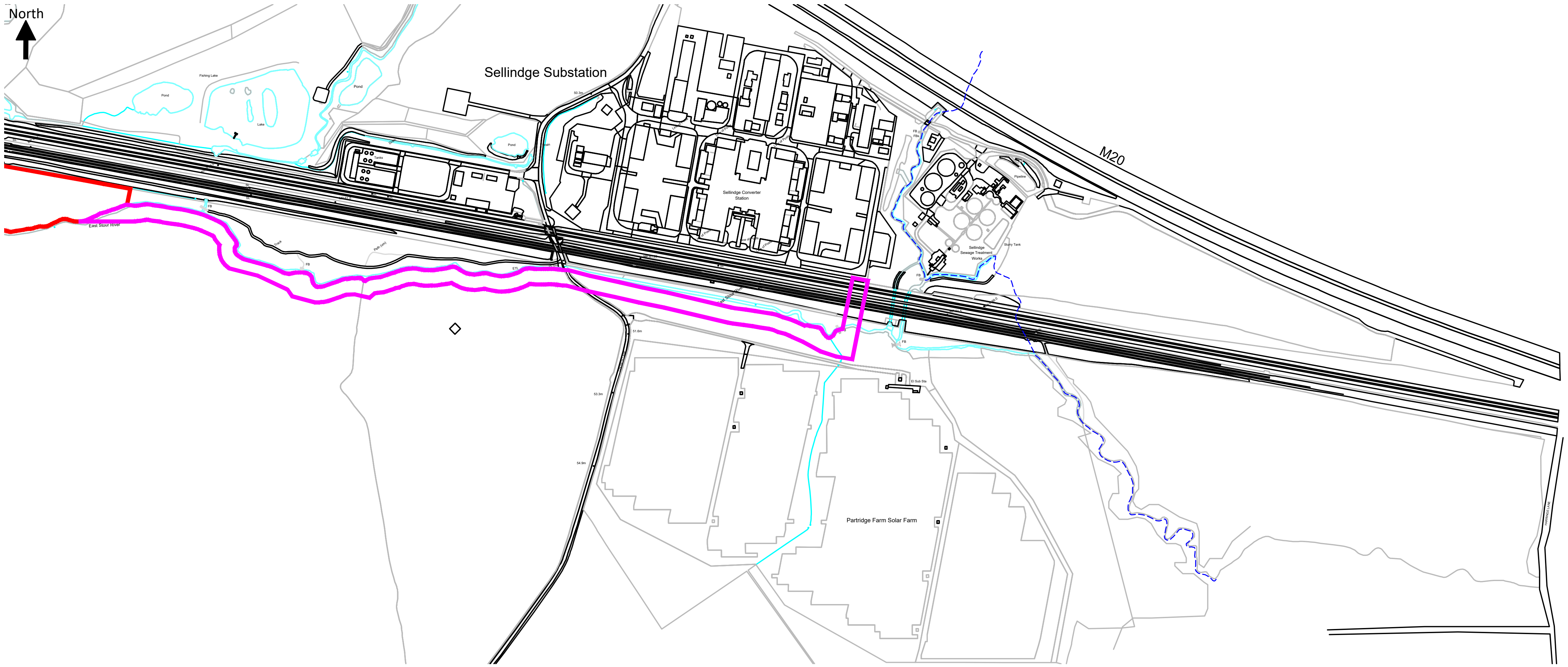
Document Name:
Figure 2: Boundary for EIA Scoping

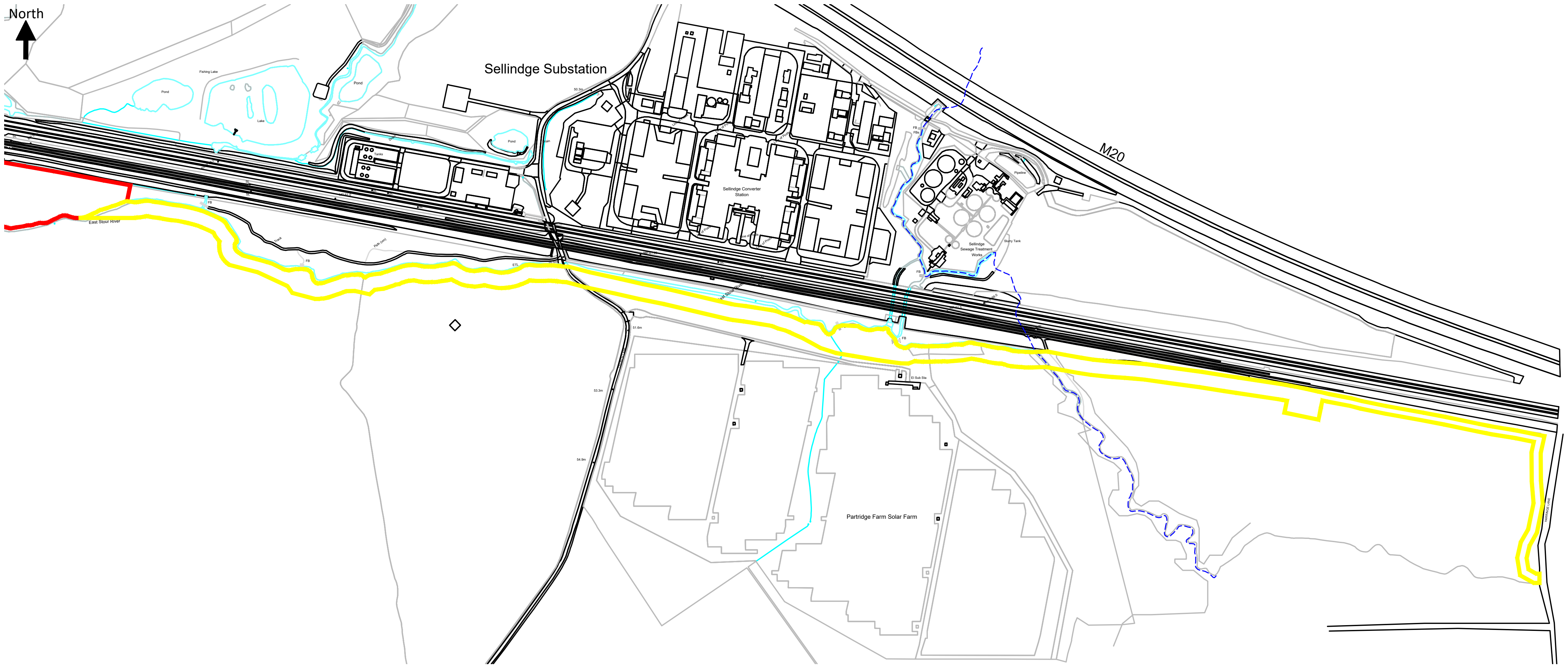
Document Reference #:
142-01-01

Scale: NTS@A3 Issue: SR1

Produced:	Checked:	Date:
RC	CC	March 2022

Figure 3: Grid Connection Cable Route Options





Drawing not to scale,
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Not for construction.

Notes:

Postcode: TN25 7HP W3W: paints.embodied.warp

Key:

- Main Solar Area *(Shown in part for reference)*
- District Boundary
- Cable Route - Preferred Route
- Cable Route - Alternative Route
- Waterway/ Pond

evolution power

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Email: energy@evolutionpower.co.uk
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Project Name:

Stonestreet Green Solar

Document Name:

Figure 3: Grid Connection Cable Route Options

Document Reference #:

142-01-14

Scale: NTS@A3		Issue: SR1
Produced: RC	Checked: CC	Date: March 2022

1.6. Notification that DCO Application will be Accompanied by an ES

1.6.1. The Applicant hereby gives notice, pursuant to Regulation 8(1)(b) of the EIA Regulations, that the application for a DCO will be accompanied by an ES. The ES will set out the methods and findings of the EIA undertaken in line with the requirements of the EIA Regulations and will include at least the information set out in Regulation 14(2)(a) – (e) and any additional information specified in Schedule 4 relevant to the specific characteristics of the Proposed Development and the environmental features likely to be significantly affected. It will include the information reasonably required for reaching a reasoned conclusion on the significant effects of the Proposed Development.

1.7. Stonestreet Green Solar Team

1.7.1. The preparation of the EIA is being led by Barton Willmore, now Stantec, working closely with Wardell Armstrong LLP ('Wardell Armstrong') and Lloyd Bore Ltd ('Lloyd Bore'). Pursuant to Regulation 14(4) of the EIA Regulations, the ES will be prepared by competent experts and the ES will outline the relevant expertise or qualifications of the experts.

Table 1.1 Stonestreet Green Solar Team

Topic	Author
Planning and Policy Context	Barton Willmore, now Stantec
Climate Change	Barton Willmore, now Stantec
Socio-economics	Barton Willmore, now Stantec
Landscape and Visual Impact	Barton Willmore, now Stantec
Biodiversity	Lloyd Bore
Cultural Heritage	Wardell Armstrong
Geology and Ground Conditions	Wardell Armstrong
Hydrology and Flood Risk Assessment	Wardell Armstrong
Traffic and Access	Wardell Armstrong

Topic	Author
Soils and Agricultural Land	Wardell Armstrong
Noise and Vibration	Wardell Armstrong
Air Quality	Wardell Armstrong
Human Health	Barton Willmore, now Stantec
Major Accidents and Disasters	Barton Willmore, now Stantec
Electric, Magnetic and Electromagnetic Fields	Barton Willmore, now Stantec
Telecommunications, Television Reception and Utilities	Barton Willmore, now Stantec
Wind Microclimate	Barton Willmore, now Stantec
Daylight, Sunlight and Overshadowing	Barton Willmore, now Stantec
Glint and Glare	Wardell Armstrong and Barton Willmore, now Stantec
Lighting	Barton Willmore, now Stantec
Minerals	Barton Willmore, now Stantec
Waste	Barton Willmore, now Stantec

1.7.2. Herbert Smith Freehills LLP has been instructed to provide legal advice throughout the Stonestreet Green Solar DCO application process.

1.8. General Approach to Scoping Matters In and Out

1.8.1. This Scoping Report has been produced in accordance with the EIA Regulations and relevant guidance documents. In particular, the Inspectorate's *Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information and Environmental Statements*[4] (2020) states that, although not a statutory requirement, the Scoping Opinion is an important document and the EIA Regulations require the ES to be based on the most recent one adopted. Section 5.7 of Advice Note Seven highlights that effective scoping allows for an early

[4] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/#1 Accessed: February 2022

identification of the likely significant effects applicable to the EIA Regulations and also provides the opportunity to agree where aspects and matters can be scoped out from further assessment. Section 5.8 notes that applicants may choose to undertake their own non-statutory consultation with the consultation bodies, or others, in advance of submitting a scoping request. It is also acknowledged in Section 5.9 that scoping requests can include design options that remain under consideration but that this should be avoided where possible.

1.8.2. Section 5.10 of Advice Note Seven states that it is essential that ESs are appropriately focused on aspects and matters where a likely significant effect may occur, and that the Inspectorate is keen to ensure that the scoping process is used effectively, ensuring that the EIA process is proportionate. This includes scoping out from the need for further assessment aspects and matters where it is appropriate to do so. Advice Note Seven goes on to state that to support the Inspectorate on its aim for proportionality, applicants should ensure that their scoping request includes sufficient justification for scoping aspects/matters out, and that this justification should be evidence-based and have reference to the assessment process.

1.8.3. The approach presented in this Scoping Report is consistent with the advice provided in Advice Note Seven.

2. The Consenting Process

2.1. Introduction

2.1.1. This section provides a summary of the DCO process, including the requirement for pre-application consultation, and completion of a broad range of surveys and studies in accordance with the EIA assessment process.

2.2. The DCO Process

2.2.1. The process for applying for a DCO is set out in the PA2008. This provides:

- the thresholds above which certain types of development are considered to be nationally significant and require development consent; and
- the statutory process for the consenting of NSIPs.

2.2.2. Section 31 of the PA2008 states that a DCO is required for development that is or forms part of an NSIP.

2.2.3. As explained in Section 1 of this report, the Proposed Development comprises an NSIP and therefore the Applicant intends to submit an application for a DCO for all elements of the Proposed Development.

2.2.4. The DCO application process is split into the following six stages:

- Pre-application;
- Acceptance;
- Pre-examination;
- Examination;
- Decision; and
- Post-decision.

2.2.5. The DCO application for the Proposed Development is currently at the first of these stages, being the pre-application stage.

2.2.6. During the pre-application phase, Part 5 of the PA2008 requires promoters of a DCO application to engage in pre-application consultation with statutory consultees under Section 42 of the PA2008 and the local community under Section 47 of the PA2008. The proposed application must also be publicised under Section 48 of the PA2008.

2.2.7. The EIA Regulations make provisions for various matters in connection with making a DCO application, including in respect of the pre-application consultation described above.

2.2.8. Details of the pre-application consultation with the local community that the Applicant is intending to carry out for the Proposed Development are included in the Statement of Community Consultation ('SoCC') found at www.stonestreetgreensolar.co.uk. This explains that the Applicant currently intends to carry out statutory consultation with the local community in summer 2022. In parallel, the Applicant also intends to carry out statutory consultation with the bodies identified as being statutory consultees in Section 42 of the PA2008 and will issue notices to publicise the proposed application in accordance with Section 48 of the PA2008.

2.2.9. The Applicant has already begun engaging with a range of local stakeholders about the project, including the Parish Council.

2.2.10. Following the completion of pre-application consultation, the DCO application for the Proposed Development will be prepared and submitted to the Inspectorate. The application will comply with the requirements of the PA2008, the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 ('APFP Regulations'), the EIA Regulations and applicable SoS and Inspectorate guidance, including the Inspectorate's *Advice Note Six: Preparation and submission of application documents*[5].

2.2.11. Regulation 5(2)(a) of the APFP Regulations requires that, where applicable, an application must be accompanied by 'the environmental statement required

[5] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-six-preparation-and-submission-of-application-documents/ Accessed: March 2022

pursuant to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and any scoping or screening opinions or directions'. The DCO application for the Proposed Development will include an ES.

2.3. The Environmental Impact Assessment (EIA) Process

2.3.1. As set out in Section 1 of this report, the EIA requirement for NSIPs is transposed into law through the EIA Regulations. The Proposed Development is a 'Schedule 2' development under paragraph 3(a) of Schedule 2 of the EIA Regulations as it constitutes an *'industrial installation for the production of electricity, steam and hot water'* and is not a project listed in Schedule 1.

2.3.2. The EIA Regulations set out the statutory process and minimum requirements for the provision of adequate environmental information to enable the EIA process. The EIA, activities, surveys and studies will be reported in the ES.

2.3.3. The EIA process can be broadly summarised as consisting of three main elements that take place prior to the submission of the DCO and ES:

- **Scoping**: The project applicant submits a Scoping Report in support of a request for a Scoping Opinion from the Inspectorate, who must consult defined consultation bodies before issuing the Scoping Opinion. This report comprises the Scoping Report for the Proposed Development.
- **Consultation**: The project applicant is required to conduct pre-application consultation in accordance with the PA2008 and associated guidance and Regulations, which includes the EIA Regulations. For EIA development, the applicant must consult on preliminary environmental information which is the information listed in Regulation 14(2) of the EIA Regulations which has been compiled by the applicant and is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development and any associated development. A Preliminary Environmental Information Report ('PEIR') will be produced for the Proposed Development which will build upon findings from this Scoping Report. It will incorporate the findings of the surveys and initial assessments and will enable

consultees to develop an informed view of any likely significant environmental effects of the Proposed Development. Feedback will be sought from the local communities and other stakeholders on the PEIR.

- **ES Preparation**: The ES is prepared taking into account the responses to the consultation process. The ES for the Proposed Development will advance the content of the PEIR and incorporate the responses from the consultation and results of the surveys undertaken. It will also describe any changes made to the project and any mitigation measures that need to be implemented. The ES will form part of the DCO application.

3. Planning and Energy Policy Context

3.1. Introduction

3.1.1. This section outlines the planning and energy policy framework of relevance to the Proposed Development.

3.2. National Policy on Climate Change, Sustainability and Renewable Energy

3.2.1. The United Nations Framework Convention on Climate Change ('UNFCCC')[6] is an international environmental treaty ratified by the UK. The stated objective of the UNFCCC is to combat '*dangerous interference with the climate system*'. The multilateral agreements to achieve the stated objective include the Kyoto Protocol (now superseded) and the Paris Agreement[7].

3.2.2. The current policy stance on climate change stemmed from the context set by the Kyoto Protocol, and the intervening legislation which followed it. In November 2021, at the COP26 UN climate talks, the Glasgow Climate Pact[8] was signed by all 197 countries to maintain the limit of a 1.5 degrees Celsius rise in mean global temperature set by the Paris Agreement.

3.2.3. The Committee on Climate Change ('CCC') published a report in May 2019, titled '*Net Zero – The UK's contribution to stopping global warming*'[9]. The report sets out a number of actions, including the transition to a net zero emissions economy and what is needed to underpin delivery of net zero emissions in the UK. In June 2019, in response to the report, the UK government declared a climate emergency.

3.2.4. The resultant legislation amended the Climate Change Act 2008 and introduced a legally binding target to achieve 'net zero' by 2050. Section 1 of

[6] Available at: https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf Accessed March 2022
[7] Available at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement Accessed March 2022
[8] Available at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact-key-outcomes-from-cop26 Accessed March 2022
[9] Available at: https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/ Accessed March 2022

the Climate Change Act 2008 (as amended) sets out the target to 2050 and states that:

> *'(1) It is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline.*
>
> *(2) The 1990 baseline" means the aggregate amount of —*
>
> *(a) net UK emissions of carbon dioxide for that year, and*
>
> *(b) net UK emissions of each of the other targeted greenhouse gases for the year that is the base year for that gas.'*

3.2.5. On 20 April 2021, the UK Government announced its commitment to reduce carbon emissions by 78% by 2035 compared to 1990 levels (including, for the first time, those from shipping and aviation). The new target was enshrined in law in the Carbon Budget Order 2021, which came into force on 24 June 2021.

3.2.6. In October 2021, the UK committed to decarbonise the electricity system by 2035 and secure a home-grown clean electricity supply. These commitments brought forward the government's original target of a fully decarbonised power system by 2050, as set out in the Energy White Paper and emphasised the role of green technologies to deliver cleaner, cheaper power and create thousands of new high-skilled jobs in new industries across the UK.

National Infrastructure Strategy – Fairer, Faster and Greener (November 2020)[10]

3.2.7. The Strategy sets out the UK Government's plans to fulfill its ambition to *'deliver an infrastructure revolution: a radical improvement in the quality of the UK's infrastructure to help level up the country, strengthen the Union, and put the UK on the path to net zero emissions by 2050'*. It states that at chapter three on page 50:

[10] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938539/NIS_Report_Web_Accessible.pdf Accessed March 2022

'To achieve net zero by 2050, the power system will need to be virtually carbon free and significantly larger to cope with the additional demand from electrification in transport, heating and some industrial processes. This expanded system will require increased investments in network infrastructure, sources of flexibility, such as interconnection, demand response and storage, together with enough low carbon generation capacity to provide the vast majority of the UK's electricity needs.'

3.2.8. The Strategy states in chapter three on page 51 that achieving net zero will require a dramatic increase in the share of generation from renewables, and that greater generation capacity will need to come from onshore wind and solar.

Energy White Paper (December 2020)[11]

3.2.9. The Energy White Paper '*Powering our Net Zero Future*' (2020) provides a long-term strategic vision for the UK's energy system, consistent with delivering net zero emissions by 2050.

3.2.10. The White Paper sets out the Government's goal of a decisive shift from fossil fuel to clean energy, in power, buildings and industry, whilst creating jobs, growing the economy and keeping energy bills affordable. It also explains that a four-fold increase in clean electricity generation could be required by 2050, due to the retiring of existing carbon intensive and nuclear capacity and the potential doubling of demand from increased electrification (e.g. vehicles and heating).

3.2.11. It does not target a particular mix of energy generation technologies to meet the 2050 target, stating that the market should determine the best solutions for very low emissions and reliable supply at a low cost to consumers. It states however that a low-cost, net zero consistent system is likely to be composed

[11] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf Accessed March 2022

predominantly of wind and solar. It further states at page 45 that:

> *'Onshore wind and solar will be key building blocks of the future generation mix, along with offshore wind. We will need sustained growth in the capacity of these sectors in the next decade to ensure that we are on a pathway that allows us to meet net zero emissions in all demand scenarios'.*

Net-zero Strategy: Build Back Greener (October 2021)[12]

3.2.12. First published in October 2021 by the Department for Business, Energy and Industrial Strategy, the net-zero strategy sets out policies and proposals which ensure the UK is in accordance with upcoming carbon budgets and Nationally Determined Contributions ('NDC'). NDCs provide a mechanism for countries to voluntarily impose national emission limits under the Paris Agreement. The strategy seeks to realise a decarbonised economy by 2050.

British Energy Security Strategy (April 2022)[13]

3.2.13. In April 2022, the UK Government published the British Energy Security Strategy. The strategy sets out the Government's vision to deliver clean, affordable, secure energy to the UK over the long term. It also reaffirms the Government's commitment for 95 per cent of British electricity to be low-carbon by 2030, and for the electricity system to be completely decarbonized by 2035.

3.2.14. With respect to energy provided by solar, the Government expects a five-fold increase from the current 14GW of capacity in the UK by 2035. The strategy supports the development of solar that is co-located with other uses (including energy storage) to maximise the efficiency of land use.

3.3. National Policy Statements

3.3.1. Under Section 104 of the PA2008, the SoS must have regard to any National

[12] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1033990/net-zero-strategy-beis.pdf Accessed March 2022

[13] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1067835/british-energy-security-strategy-web.pdf. Accessed April 2022.

Policy Statement ('NPS') which has effect in relation to development of the description to which the application relates (a 'relevant national policy statement') and the application must be determined in accordance with the relevant NPS. Other matters which the SoS must have regard to under Section 104 include any local impact report, any matters prescribed in relation to development of the description to which the application relates, and any other matters which the SoS thinks are both important and relevant to decision.

3.3.2. NPSs set out the government's objectives for the development of nationally significant infrastructure, and each NPS covers a different aspect of nationally significant infrastructure. There is no current NPS that explicitly deals with solar or energy storage of the nature proposed as part of the Proposed Development. As matters currently stand, therefore, the DCO application for the Proposed Development would need to be determined by the SoS under Section 105 of the PA2008. Section 105 provides that the SoS must, in cases where no NPS has effect, have regard to any local impact report, any matters prescribed in relation to development of the description to which the application relates, and any other matters which the SoS thinks are both important and relevant to the decision.

3.3.3. There are two current NPSs that, whilst they do not have effect for the Proposed Development, are important and relevant to the determination of the DCO application for the Proposed Development. These are:

- **Overarching NPS for Energy (EN-1) (July 2011)[14]:** Sets out a commitment for the UK to transition to a low carbon economy and establishes the national need for energy infrastructure, including energy storage. It also includes a series of Assessment Principles against which DCO applications for energy infrastructure should be determined.
- **NPS for Electricity Networks Infrastructure (EN-5) (July 2011)[15]:** Should be read in conjunction with NPS EN-1. This NPS sets out required

[14] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf Accessed February 2022
[15] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf Accessed March 2022

assessments and technology-specific matters for consideration. It covers above ground electricity lines whose nominal voltage is expected to be 132kV or above, however paragraph 1.8.2 states that any other kind of electricity infrastructure (including underground cables at any voltage and associated infrastructure such as substations and converter stations) will be covered by this NPS if it constitutes associated development for which consent is sought along with an NSIP such as a generating station.

3.3.4. The relevance of NPS EN-1 to the development of large-scale solar projects has been confirmed by the SoS's decision on the Cleve Hill Solar Park project (Ref: EN010085) (28 May 2020)[16]. Paragraphs 7.1 and 7.2 of the decision letter state:

> *'The Secretary of State notes … the absence of a type-specific National Policy Statement for solar power or for battery storage (although the general presumption in favour of all types of energy generation in National Policy Statement EN-1 is a relevant and important matter, even if the presumption of need and that the relative weight to be given to specified criteria in EN-1 does not directly apply in this case). In the absence of a type specific National Policy Statement, the Secretary of State is required to determine applications for development consent for nationally significant infrastructure projects against section 105 of the Planning Act 2008.*
>
> *…*
>
> *National Policy Statement EN-1 which gives support to renewable electricity generating nationally significant infrastructure projects is relevant and important to the consideration of the Application.'*

3.3.5. NPS for Renewable Energy (EN-3) (July 2011)[17] should be read in conjunction with NPS EN-1, and applies to the types of renewable energy infrastructure listed in paragraph 1.8.1. That list does not include solar, and paragraph 1.8.2

[16] Available at: https://infrastructure.planninginspectorate.gov.uk/projects/south-east/cleve-hill-solar-park/ Accessed March 2022
[17] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-nps-renewable-energy-en3.pdf Accessed February 2022

confirms that the NPS does not cover other types of renewable energy generation that were not, at that time in 2011, technically viable over 50MW. It goes on to state that: '*When it appears that other renewables technologies will be economically and technically viable over 50MW, the Government will further consider either revisions to this NPS or separate NPSs to cover such technologies.*'

3.3.6. The UK Government published for consultation a suite of draft revised energy NPSs (EN-1 to EN-5) in September 2021.

3.3.7. The following provisions of the draft NPSs are relevant to the Proposed Development:

- **Draft Overarching NPS for Energy (EN-1) (September 2021)**[18]: Recognises the UK's target to cut greenhouse gas emissions to net zero by 2050. Paragraph 3.3.20 confirms that there is an urgent need for new electricity generating capacity to meet the UK's energy objectives. Paragraphs 3.3.21 to 3.3.23 identify the role of solar (and wind) in meeting that need. The draft NPS states that solar is one of the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply. UK government analysis demonstrates that a secure, reliable, affordable and net zero consistent system in 2050 is likely to be composed predominantly of wind and solar. The draft NPS recognises that this will require sustained growth in the capacity of solar in the next decade. Alongside the development of wind and solar, paragraphs 3.3.24 to 3.3.25 of the draft NPS highlight the need for energy storage to maximise the usable output from intermittent low carbon generation (e.g. solar and wind), reduce the total amount of generation capacity needed on the system, provide a range of balancing services, and reduce constraints on the networks to help defer or avoid the need for costly network upgrades as demand increases;

[18] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf Accessed February 2022

- **Draft NPS for Renewable Energy Infrastructure (EN-3) (September 2021)[19]:** Covers renewable energy infrastructure comprising solar PV above 50MW in England. The draft NPS at paragraph 2.47.1 recognises solar farms as one of the most established renewable electricity technologies in the UK and the cheapest form of electricity generation worldwide. It provides clear support for large scale solar development, by stating that: *'the government has committed to sustained growth in solar capacity to ensure that we are on a pathway that allows us to meet net zero emissions. As such solar is a key part of the government's strategy for low cost decarbonization of the energy sector'*. The draft NPS outlines a number of factors that can influence the siting of a solar project including: irradiance and site topography; proximity of a site to dwellings; capacity of a site; grid connection; agricultural land classification and land type and accessibility. It also goes on to state at paragraph 2.48.15 that: *'the development of ground mounted solar arrays is not prohibited on sites of agricultural land classified 1, 2, 3a'* and at paragraph 2.48.13 that: *'land type should not be a predominating factor in determining the suitability of the site location'*. In terms of the matters to be considered in the decision-making process, these include (at sections 2.49 to 2.54):
    - Access tracks;
    - Site layout, design, and appearance (including any flood risk);
    - Security and lighting;
    - Project lifetimes;
    - Flexibility (to account for technology types and advancements);
    - Biodiversity and nature conservation;
    - Landscape, visual and residential amenity;
    - Glint and glare;
    - Cultural heritage; and
    - Construction impacts including traffic and transport noise and

[19] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf Accessed February 2022

vibration.

- **Draft NPS for Electricity Networks Infrastructure (EN-5) (September 2021)[20]:** The draft NPS covers above any above ground electricity line whose nominal voltage is expected to be 132kV or above with a length greater than 2km which is not a replacement line and not exempted. However, similar to NPS EN-5 (July 2011), paragraph 1.6.2 states that other kinds of electricity infrastructure (including underground cables at any voltage and associated infrastructure such as substations and converter stations) will be covered by this NPS if it constitutes associated development for which consent is sought along with an NSIP such as a generating station. The draft NPS discusses implications for solar photovoltaic generation, outlining factors that influence site selection in paragraph 2.48.2 to 2.48.16:
  - Proximity of a site to dwellings;
  - Capacity of a site;
  - Grid connection;
  - Agricultural land classification and land type; and
  - Accessibility.

3.3.8. The revised draft energy NPSs are expected to be designated in summer 2022 and will replace the existing NPSs EN-1 to EN-5. Paragraph 1.6.2 of the revised draft Overarching NPS for Energy (EN-1) states that: '*The 2021 amendments will…have effect only in relation to those applications for development consent accepted for examination after the designation of those amendments.*' Paragraph 1.6.3 goes on to state that any emerging draft NPSs (or those designated but not having effect) are potentially capable of being important and relevant considerations in the decision-making process. The DCO application for the Proposed Development is anticipated to be submitted in winter 2022, by which date it is currently expected that the draft NPSs will have been designated. If so, the new NPS EN-1, NPS EN-3 and NPS EN-5

[20] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015238/en-5-draft-for-consultation.pdf Accessed March 2022

will have effect for the Proposed Development and the DCO application should be determined pursuant to Section 104 of the PA2008.

3.3.9. Although that is the current expectation, it is acknowledged that the Government's timetable for designation of the draft NPSs might change, or that the final version of the revised NPSs might differ from that consulted on through the revised drafts issued in September 2021. The topic chapters of this Scoping Report make reference to the national policy contained within the emerging NPSs where relevant. The ES will be drafted in autumn 2022 and will make reference to new NPSs (if designated) or, if it appears that the new NPSs will not have been designated by the time the DCO application is submitted, then the ES will make appropriate references to the existing relevant NPSs and the emerging drafts.

3.4. Local Policy

Ashford Borough Council Draft Carbon Neutral Action Plan[21]

3.4.1. ABC passed the following motions on 18 July 2019[22]:

> *'The Five Year Corporate Plan is now in its fifth and final year, and is therefore being revised. It is proposed that a key element of the new Five Year Plan commencing in 2020, will be that Ashford will be over 80% Carbon Neutral before the end of this plan in 2025. It is further proposed that Ashford will be Completely Carbon Neutral before the end of the next five year plan in 2030. This will reinforce the status of Ashford Borough being the Garden of England Borough right in the very heart of Kent. In addition this objective will also be the number one priority for delivery in the new emerging Big Eight Projects for the Ashford Strategic Delivery Board.'*

> *'That the Council undertake a review of its current use of single use plastics and further agrees to end its use of these by 2021 and that*

[21] Available at: https://www.ashford.gov.uk/environmental-concerns/carbon-neutral-agenda/carbon-neutral-action-plan-consultation/ Accessed March 2022
[22] Minutes of a meeting of ABC held on 18 July 2019. Available at: (Public Pack) Minutes Document for Council, 18/07/2019 19:00 (moderngov.co.uk) Accessed March 2022

the Environment, Climate Change and Conservation Advisory Committee be tasked to regularly report back on progress towards this end'.

3.4.2. In May 2021, ABC's Cabinet approved the draft Carbon Neutral Action Plan for consultation. The plan aims to achieve carbon neutrality within the council's own estate and operations by 2030 and emphasizes the need for the whole community's involvement in achieving Ashford wide carbon neutrality before 2050.

Ashford Local Plan 2030[23]

3.4.3. The Ashford Local Plan 2030 (the 'ABC Local Plan') was adopted in February 2019 and outlines a policy and delivery framework that provides guidance to ensure that ABC's aims for the Borough are achieved where they relate to issues of planning and land use. The plan covers the period 2011 to 2030. The plan states that its policies *'... go to the heart of what sustainable development is and how good place making can be achieved'*.

3.4.4. The plan states that a presumption in favour of sustainable development lies at its heart, and it seeks to achieve each of the economic, social and environmental dimensions of sustainable development in a way which avoids significant adverse impacts by mitigation compensatory measures.

3.4.5. *Policy ENV10 – Renewable and Low Carbon Energy* of the ABC Local Plan states that renewable energy generation development will be permitted provided that:

- the development, either individually or cumulatively does not result in significant adverse impacts on the landscape, natural assets or historic assets, having special regard to nationally recognised designations and their setting, such as Areas of Outstanding Natural Beauty, Conservation Areas and Listed Buildings;
- the development does not generate an unacceptable level of traffic or

[23] Available at: https://www.ashford.gov.uk/media/jw3nbvq1/adopted-ashford-local-plan-2030.pdf Accessed March 2022

loss of amenity to nearby residents (visual impact, noise, disturbance, odour);

- provision is made for the decommissioning of the infrastructure once operation has ceased, including the restoration of the site to its previous use; and
- evidence is provided to demonstrate effective engagement with the local community and local authority.

3.4.6. The following policies may also be of relevance to the detailed aspects of the Proposed Development:

- Policy ENV1 – Biodiversity;
- Policy ENV3a – Landscape Character and Design;
- Policy ENV4 – Light Pollution and Promoting Dark;
- Policy ENV5 – Protecting Important Rural Features;
- Policy ENV6 – Flood Risk;
- Policy ENV9 – Sustainable Drainage;
- Policy ENV13 – Conservation and Enhancement of Heritage Assets; and
- Policy ENV15 – Archaeology.

3.4.7. In addition to the above, the following may also be of relevance:

- ABC Dark Skies Supplementary Planning Document ('SPD') (July 2014)[24];
- Kent County Council Strategic Delivery Plan (2020 – 2023)[25];
- Kent Minerals and Waste Local Plan (September 2020)[26]; and
- Kent Minerals and Waste Safeguarding SPD (April 2017)27.

[24] Available at: https://www.ashford.gov.uk/media/kconpxdj/dark-skies-spd_adopted-july-2014.pdf Accessed March 2022
[25] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0003/93711/Strategic-Delivery-Plan-summary.pdf Accessed March 2022
[26] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0004/112585/Kent-Minerals-and-Waste-Local-Plan-2013-2030.pdf Accessed March 2022
[27] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0019/69310/Supplementary-Planning-Document-SPD-on-Minerals-and-Waste-Safeguarding.pdf Accessed March 2022

4. The Proposed Development

4.1. Introduction

4.1.1. The Proposed Development comprises ground-mounted solar PV arrays and on-site energy storage, together with associated infrastructure and an underground cable connection to the existing National Grid Substation at Sellindge. The Proposed Development will have the capability to export and import up to 99.9MW of electricity at any time.

4.1.2. This section provides a summary of the Proposed Development, including the key infrastructure components, construction/decommissioning activities and a description of the operational aspects.

4.2. Project Overview

4.2.1. The design is expected to evolve throughout the EIA process to avoid or minimise any likely significant effects on any specific designations or assets and, where appropriate, to respond to feedback from consultees.

4.2.2. The technologies proposed (solar PV and energy storage) are rapidly evolving and the application will propose that certain flexibility is maintained to ensure the latest technology can be utilised at the point of construction to maximise the Proposed Development's benefits. Any flexibility sought will be defined within the DCO. The ES will set out the design parameters that will be used for the Proposed Development and it will adopt a parameter-led assessment that considers the 'worst case', having regard to the Inspectorate's *Advice Note Nine: Rochdale Envelope* (July 2018)[28] and paragraph 4.2.8 of NPS EN-1.

4.2.3. The Proposed Development will include the following key infrastructure:

- Solar PV modules;
- PV module mounting structures;

[28] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/ Accessed March 2022.

- On-site electrical stations including inverters, transformers and switchgear;
- On-site and grid connection cabling with a maximum voltage of 132kV;
- Project substation, including high voltage switchgear and control equipment;
- An energy storage system;
- A spare parts storage building or enclosure;
- Boundary fencing and closed-circuit television ('CCTV') security measures; and
- Access tracks.

4.2.4. During the construction and decommissioning phases, one or more temporary compounds will be required, as well as temporary access tracks, to allow access to all land within the site. The compounds will be located within the site, adjacent to the site entrances, to limit the distance travelled by delivery vehicles after arriving at the site. All compounds and temporary access tracks will be removed once the construction or decommissioning (as relevant) is complete.

4.3. Development Components

Solar PV Infrastructure

4.3.1. Solar PV modules convert sunlight into direct electrical current ('DC'). Individual modules are typically up to 2.5m long and 1.5m wide, with cells located below a layer of toughened glass. Each panel is enclosed in a module frame, typically built from anodised aluminium or steel.

4.3.2. Modules are fixed to a mounting structure in groups known as 'strings'. The exact number and arrangement of modules in each string is impacted by a number of factors, including the generating capacity and electrical characteristics of the module used. As this is changing rapidly and is expected to continue to do so, some flexibility will be required to accommodate technology advances.

4.3.3. Modules are mounted individually on a metal frame which is attached to galvanised steel piles that are driven up to 3m into the ground. The distance between each row of frames is typically 3.2m to limit the impact of inter-row shading and to allow for movement of maintenance vehicles. The maximum height of the modules from the ground is expected to be approximately 3m. The mounting frame elevates the panels to approximately 800mm.

4.3.4. It is possible to install the modules as ‘fixed’ tilt or to use single axis trackers which adjust the position of the PV modules to track the sun throughout the day. The ES will provide a detailed summary of the proposed approach and present a worst-case analysis for the approach selected.

4.3.5. The electrical output from a defined number of strings is exported by low voltage cabling to a dedicated station that includes an inverter, transformer and switchgear, mounted on concrete foundations. The function of each of the components is as follows:

- **Inverters**: convert the DC electricity produced by the solar PV modules into alternating current (‘AC’) that can be exported to the National Grid. For a project of this size, it is anticipated that approximately 25 central inverters will be required, located at regular intervals amongst the solar PV modules. The unit is typically containerised with associated control and switchgear equipment;
- **Transformers**: increase and control the voltage of the electricity produced before it reaches the substation. These will be located adjacent to the inverters within the site; and
- **Switchgear**: include electrical disconnect switches, fuses and circuit breakers to control, protect and isolate electrical circuits and equipment. As noted above, these are typically containerized with the inverter infrastructure.

4.3.6. Electrical output from each of the inverter stations will be exported to intermediate on-site substations and then finally to the main project transformer substation. From there, it will be exported from the site at 132kV via the UKPN substation to the electricity grid at Sellindge.

Energy Storage Infrastructure

4.3.7. The energy storage will be provided within the site to allow the project to load-shift generation from periods of low demand to high demand (to enable the maximum benefit to be obtained from the renewable energy produced) and can also provide grid balancing services to the electricity grid. It is expected that it will typically be charged using electricity generated by the solar PV modules but it will also be possible to import electricity to charge the storage facilities using grid supplied power when the solar PV modules are not generating sufficient power (for example, during the night).

4.3.8. The location of the energy storage within the site will depend on how it is charged:

- If the storage is AC-coupled (charged using alternating current) then several storage systems (including the associated inverter, transformer and switchgear required in each case) will be mounted on concrete foundations located in a large single compound;
- If the storage is DC-coupled (charged using direct current) then it will be distributed throughout the site, adjacent to the inverter stations; and
- In each case a heating, ventilation, and cooling (‘HVAC’) system will be integrated into the containers to ensure efficiency and safe performance.

4.3.9. The technical approach and design will depend on a number of factors, including technology advances, grid conditions and commercial opportunities. The energy storage configuration will be finalised prior to the submission of the DCO application and assessed accordingly.

Grid Connection

4.3.10. The site will connect to the National Grid via underground cabling. The voltage for the cable connection will be up to 132kV. The grid connection route will be included in the DCO application and the ES will consider the likely significant environmental effects of the entire Proposed Development, including the grid connection.

4.3.11. It is likely that some horizontal directional drilling will be required to cross the East Stour River, and to avoid any sensitive areas, and this will be fully assessed as part of the ES.

4.3.12. The Applicant has accepted a grid offer from UKPN. UKPN has indicated that, subject to NG confirmation, the Applicant will be able to connect to the grid directly through the existing UKPN 132kV substation (‘UKPN substation’) located at Sellindge, Kent (the Applicant’s Preferred Route on Figure 3). The UKPN substation is located to the north-east of the site. UKPN owns and controls a number of existing ducts under HS1 and has confirmed that these can be utilised for the Proposed Development.

4.3.13. In the event that NG is unable to confirm that the Preferred Route is possible, the site will instead connect into the UKPN substation via an existing 132kV tower on the south side of HS1 (the Alternative Route).

4.3.14. In either case, there will be no requirement to put in place new access over/under HS1.

4.3.15. At the time of writing, the final grid connection arrangement has yet to be confirmed. Therefore, the Boundary for Scoping (Figure 2) includes the land required for two alternative grid connection options: the Preferred Route and the Alternative Route (see Figure 3). The final grid connection route will be confirmed prior to the submission of the DCO application, and the Order Limits will reflect this.

4.4. Construction Programme

4.4.1. The construction of the Proposed Development is anticipated to commence in 2025 and span a period of approximately 12 months. During the construction phase, one or more temporary construction compounds will serve the Proposed Development, as well as temporary access tracks. The compounds will be located within the site adjacent to the site entrances, thus reducing the distance delivery vehicles will need to travel within the site. All compounds and temporary access tracks will be removed once construction is complete.

4.4.2. The activities on-site during the construction phase are expected to include the following:

- Ground clearance;
- Construction of the access route and laydown area;
- Compound and panel testing area creation;
- Setting out the positions for the inverters, substations, cable trenches and panel rows;
- Installation of solar PV frames (steel legs are driven into ground using pile driver machinery) and panels;
- Trenching for cable routes;
- Fitting of string cabling between PV arrays;
- Laying and connection of DC cables;
- Installation of combiner boxes/ string inverters;
- Substation building activities including ground clearance and foundation pouring;
- Point of Connection (‘POC') cable groundworks;
- Inverter groundworks, including foundation pouring and/or piling;
- Inverter build and associated high voltage, low voltage and communication system electrical works;
- POC electrical works;
- Pathway clearance and re-directions;
- Fencing installations;
- Installation of communications cabling and equipment;
- CCTV installation and connection; and
- Installation of temporary security and safety equipment.

4.4.3. The ES will provide detail on the following:

- Outline Construction Environmental Management Plan (‘CEMP’);

- Outline Construction Traffic Management Plan (‘CTMP’);
- Location and design of temporary construction compounds and access tracks; and
- Proposed reinstatement and habitat creation to mitigate impacts and provide enhancement opportunities.

4.5. Operation and Maintenance Phase

4.5.1. The Proposed Development comprises a temporary structure with a modelled operational lifespan of up to 40 years, being the expected operational life of the solar PV modules, for the purposes of the assessments in the ES.

4.5.2. During the operational phase the activities on-site are expected to amount to limited maintenance activities, including servicing of plant and equipment and vegetation management.

4.6. Decommissioning Phase

4.6.1. Following cessation of energy generation and exportation at the site, all PV modules, mounting structure, cabling, inverters and transformers will be removed and recycled or disposed of in accordance with good practice and market conditions at that time.

4.6.2. The decommissioning of the Proposed Development is anticipated to take approximately 12 months. During the decommissioning phase, one or more temporary compounds will be required, as well as temporary access tracks. The compounds will be located within the site adjacent to the site entrances. All compounds and temporary access tracks will be removed once decommissioning is complete.

4.6.3. The ES will provide details of an Outline Decommissioning Environmental Management Plan ('DEMP'). The DEMP will be secured by DCO requirement and will need to be agreed with ABC (and FHDC if the Alternative Route is implemented) in advance of the commencement of decommissioning.

5. EIA Methodology

5.1. Introduction

5.1.1. This section describes the broad principles of the methodology that will be adopted in the ES, including the approach that will be used to identify, evaluate and mitigate likely significant environmental effects. It also sets out the proposed structure of the ES.

5.2. Overall ES Structure

5.2.1. The ES will contain three main volumes as set out in Table 5.1 below.

Table 5.1: Environmental Statement Structure

Volume 1: ES Non-Technical Summary
Summary of the ES in non-technical language.

Volume 2: ES Main Text and Figures		
Chapter No.	**Chapter Title**	**Description**
1.	Introduction	Introduction to the ES, EIA requirements, details of project team, ES organisation and availability of information.
2.	EIA Methodology	Methods used to prepare each chapter, description of ES structure and content, generic significance criteria, assumptions, limitations, scoping and consultation.
3.	Site & Development Description	Site description and details of the Proposed Development.
4.	Alternatives & Design	Describes the reasonable alternatives studied by the Applicant, provides a comparison of the

Volume 2: ES Main Text and Figures		
Chapter No.	**Chapter Title**	**Description**
	Evolution	environmental effects of those alternatives and identifies the reasoning for the selection the Proposed Development based on environmental constraints.
5.	Construction Methodology & Phasing	Details of anticipated programme for development and construction methodology.
6.	Cultural Heritage	Effects of the Proposed Development on built heritage and below-ground archaeology.
7.	Landscape & Views	Effects of the Proposed Development on landscape and visual amenity.
8.	Biodiversity	Effects of the Proposed Development on biodiversity and ecology.
9.	Water Environment	Effects of the Proposed Development on water quality, including effects relating to drainage and flood risk.
10.	Socio-economics	Effects of the Proposed Development on the socio-economic environment.
11.	Traffic & Access	Effects of the Proposed Development on traffic and access, including relating to driver severance and delay, pedestrian severance and delay, pedestrian amenity, accidents and safety and hazardous and dangerous loads.
12.	Noise	Effects of the Proposed Development on noise.
13.	Climate Change	Effects of the Proposed Development on climate change.
14.	Cumulative	Summary of the cumulative effects of the

Volume 2: ES Main Text and Figures		
Chapter No.	**Chapter Title**	**Description**
	Effects	Proposed Development
15.	Summary & Residual Effects	Summary of the residual and interactive effects of the Proposed Development.

Volume 3: Technical Appendices
Technical data, figures, plans and reports to support the chapters in Volume 2.

5.3. EIA Methodology

5.3.1. The ES will set out the methodology used in the EIA, state the assumptions applicable to all disciplines, and summarise the EIA scoping process undertaken and the public consultation process. Bespoke methodologies, limitations and assumptions will be contained in the technical chapters of the ES where required.

5.3.2. The significance of an environmental effect is determined by the interaction of magnitude and sensitivity, whereby the effects can be positive (beneficial) or negative (adverse). Generic criteria to be used in carrying out this process are detailed below. Some technical chapters may use discipline-specific criteria with their own terms for magnitude, sensitivity and significance and, where used, this will be explained in the relevant chapter.

5.3.3. An environmental effect can be categorized as either permanent or temporary. A permanent effect is irreversible or lasting for the foreseeable future, whereas a temporary effect is short-term, medium-term or long-term.

5.3.4. The duration of temporary effects comprises:

- Short-term (a period of up to 1 year);

- Medium-term (a period of between 1 year and up to 5 years); and
- Long-term (a period of more than 5 years).

The Assessment of Magnitude

- The methodology for determining the scale or magnitude of impact is set out Table 5.2 below.

Table 5.2: Methodology for Assessing Magnitude

Magnitude of Impact	Criteria for Assessing Magnitude of Impact
High	Total loss or large-scale alteration over the whole development area and potentially beyond (such as off-site) to key elements or features of the particular environmental aspect's character, composition or attributes.
Medium	Medium-scale loss or alteration over the majority of the development area and potentially beyond to key elements or features of the particular environmental aspect's character, composition or attributes.
Low	Noticeable but small-scale changes over part of the development area and potentially beyond to key characteristics or features of the particular environmental aspect's character, composition or attributes.
Very Low	Very small-scale or barely discernible changes over a small part of the development area and potentially beyond to key characteristics or features of the particular environmental aspect’s character, composition or attributes, approximating to a 'no change' situation.

The Assessment of Sensitivity

5.3.5. The sensitivity of a receptor is based on the relative importance of the receptor/resource using the scale set out in Table 5.3 below.

Table 5.3: Methodology for Assessing Sensitivity

Sensitivity	Criteria for Assessing Sensitivity of Receptor/Resource
High	The receptor/resource has very little ability to absorb change without fundamentally altering its present character, or possesses key characteristics which contribute significantly to the distinctiveness, rarity and character of the site (for example designated features of international or national importance).
Medium	The receptor/resource has low capacity to absorb change without significantly altering its present character, or contributes significantly to the distinctiveness and character of the site (for example designated features of regional or county importance).
Low	The receptor/resource has some tolerance of change without detriment to its character, or only possesses characteristics which are locally significant, not designated or only designated at a district or local level.
Very Low	The receptor/resource is tolerant of change without detriment to its character, or does not make a significant contribution to local character or distinctiveness and is not designated.

Classification of Effect

5.3.6. After the magnitude of the impact and the sensitivity of the receptor/resource have been determined, the effect will be classified using the matrix in Table 5.4. This illustrates the interaction between impact magnitude and receptor sensitivity.

Table 5.4: Classification of Effect Matrix

Magnitude	Sensitivity			
	High	**Medium**	**Low**	**Very Low**
High	Major Adverse / Beneficial	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor
Medium	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible
Low	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

Generic Effect Definitions

5.3.7. Table 5.5 below provides generic definitions of the terminology used to categorise effects.

Table 5.5: Generic Effect Definitions

Effect	Description
Major	An effect that is likely to be an important consideration at a national to regional level because it will contribute to achieving national/regional objectives or is likely to result in exceedance of statutory objectives or breaches of legislation.
Moderate	An effect that is likely to be an important consideration at a

Effect	Description
	regional level.
Minor	An effect that is likely to be an important consideration at a local level.
Negligible	An effect that is likely to have a negligible or neutral influence, irrespective of other effects.

Significance

5.3.8. Significance of effect will be clearly identified in the ES. As a general rule, major and moderate effects will be considered to be significant whilst minor and negligible effects will be considered to be not significant. However, professional judgment will also be applied and may moderate the significance of an effect where necessary, taking into account the professional's understanding of the balance between the magnitude of an impact and the sensitivity of the receptor/resource and whether the effect is permanent or temporary, its frequency, whether it is reversible, and its likelihood of occurrence.

5.4. Construction and Decommissioning Methodology and Phasing

5.4.1. The ES will outline the anticipated construction and decommissioning programme, phasing and methodology and explain the assumptions made. This chapter will form the basis of the construction and decommissioning phase assumptions documented in each of the technical chapters of the ES.

5.5. Technical Assessments

5.5.1. Each ES chapter will follow the headings set out below to ensure the final document is transparent, consistent and accessible.

- Introduction;
- Planning Policy Context;
- Assessment Methodology;

- Baseline Conditions;
- Likely Significant Effects;
- Mitigation Measures;
- Residual Effects;
- Cumulative Effects; and
- Summary.

5.5.2. Each chapter sub-heading is explained in further detail in Table 5.6 below.

Table 5.6: Technical Chapter Format and Content

Sub-Heading	Content
Introduction	This section will introduce the assessment discipline and the purpose for which it is being undertaken.
Planning Policy Context	This section will include a summary of national, regional and local policies of relevance to the environmental discipline and assessment. Where applicable, relevant technical legislation will also be summarised.
Assessment Methodology	This section will provide an explanation of methods used in undertaking the technical assessment with reference to published standards, guidelines and best practice. The application of significance criteria will also be discussed. It will also outline any difficulties encountered in compiling the required information.
Baseline Conditions	This section will include a description of the environment as it is currently (at the time of writing the ES or at another appropriate point in time) and as it is expected to change if the project were not to proceed (i.e. ‘do-nothing’ scenario). The method used to obtain baseline information will be clearly identified. Baseline data will be collected in such a way that the importance of the particular subject area to be

Sub-Heading	Content
	affected can be placed in its context and surroundings so that the effects of the proposed changes can be predicted.
Likely Significant Effects	This section will identify the likely significant effects on the environment resulting from the construction, operation and decommissioning phases of the Proposed Development.
Mitigation Measures	Adverse effects will be considered for mitigation and specific mitigation measures put forward, where practicable, to reduce, avoid or offset the potential adverse effects. Mitigation measures considered may be: ▪ **Primary (embedded):** modifications to the location or design of the project made during the pre-application phase that are an inherent part of the project, with no further actions required, such as ensuring that a key habitat or archaeological feature will be unaffected by the development's layout and operation. The first assessment of magnitude, sensitivity and significance of effect takes all embedded mitigation measures into account as an integral part of the Proposed Development; ▪ **Secondary:** actions that require further activity to achieve a particular outcome, secured for example through development consent requirements or section 106 obligations, such as lighting limits that will be subject to the submission of a detailed lighting layout for approval; or ▪ **Tertiary:** actions that would occur regardless of the EIA, including those undertaken to meet other existing legislative requirements, or actions that are standard practice to manage commonly occurring environmental effects.

Sub-Heading	Content
	The extent of the mitigation measures and how these will be effective will be discussed. Where the effectiveness is uncertain or depends upon assumptions about operating procedures, data will be provided to justify these assumptions and monitoring programmes will be proposed to enable subsequent adjustment of mitigation measures, as necessary.
Residual Effects	The residual effects, i.e. the effects of the Proposed Development assuming implementation of proposed secondary and tertiary mitigation, will be determined. The residual effects represent the overall likely significant effect of the Proposed Development on the environment having taken account of practicable/available mitigation measures.
Cumulative Effects	The inter-project cumulative effects of the Proposed Development and the identified committed developments will be assessed.
Summary	A summary of the assessment and conclusions will be provided at the end of each technical chapter.

5.6. Mitigation Measures

5.6.1. The ES will include a Schedule of Mitigation summarising the measures proposed under each technical chapter to reduce, avoid or offset the potential adverse effects of the Proposed Development. The schedule will set out the mechanisms that will be used to secure any mitigation that may be required.

5.7. Cumulative Effects

5.7.1. The approach to the assessment of the likely significant cumulative effects of the Proposed Development is set out in Section 16 (Cumulative Effects) of this report.

5.8. Summary and Residual Effects

5.8.1. The residual effects of the Proposed Development will be summarised in one table at the end of the ES setting out the overall beneficial and adverse likely significant effects of the Proposed Development.

6. Topics to be Scoped Out

6.1. Introduction

6.1.1. This scoping exercise has been informed by desk-based research, professional judgement and other information available for the site, including information obtained from initial on-site surveys.

6.1.2. This section sets out those environmental topic areas that have been identified to be 'scoped out' of the ES, together with the reasoned justification for the approach proposed, on the basis that the Proposed Development's construction, operational and decommissioning phases are not anticipated to result in likely significant effects on the environmental topics.

6.1.3. These topics are:

- Agricultural Land and Soils;
- Air Quality;
- Land Contamination;
- Human Health;
- Vibration;
- Major Accidents and Disasters;
- Electric, Magnetic and Electromagnetic Fields;
- Telecommunications, Television Reception and Utilities;
- Wind Microclimate;
- Daylight, Sunlight and Overshadowing;
- Glint and Glare;
- Lighting;
- Minerals; and
- Waste.

6.1.4. Given the site's location, the Proposed Development is not anticipated to result in transboundary effects, and an assessment of these effects is therefore proposed to be scoped out of the ES.

6.2. Agricultural Land and Soils

6.2.1. A detailed Agricultural Land Classification ('ALC') survey was undertaken in November/December 2021 for the agricultural land identified within the site boundary, in accordance with Natural England guidance[29]. The results of this survey have been prepared as a standalone technical report (included in Appendix 1).

6.2.2. The total site area is 189.12ha. The survey confirmed that 148.53ha of land (78.54% of the total site area) falls outside the Best and Most Versatile ('BMV') agricultural land classification ('ALC'). This comprises 142.01ha of ALC Subgrade 3b land and 6.52ha of non-agricultural land. Of the remaining surveyed land, 1.95ha (1.03%) is ALC Grade 2 and 34.47ha (18.23%) is ALC Subgrade 3a.

6.2.3. A small part of the site area (4.17ha, 2.20%) was not surveyed, comprising the cable route area. This land is currently in agricultural use which will be able to continue once the cable is installed. As such, this area of land will not be affected by the Proposed Development, except for a short number of weeks during the subsoil cable installation during construction and its removal at decommissioning.

6.2.4. The total area of BMV land on the site is 36.42ha, representing 19.26% of the total site area. The remaining site area of 148.53ha (excluding the cable route) is non-BMV or non-agricultural use, representing 78.54% of the total site area.

6.2.5. The areas of agricultural land at the site are summarised in Table 6.1 below and shown on Figure 4: Agricultural Land Classification.

[29] Available at: http://publications.naturalengland.org.uk/publication/35012 Accessed March 2022

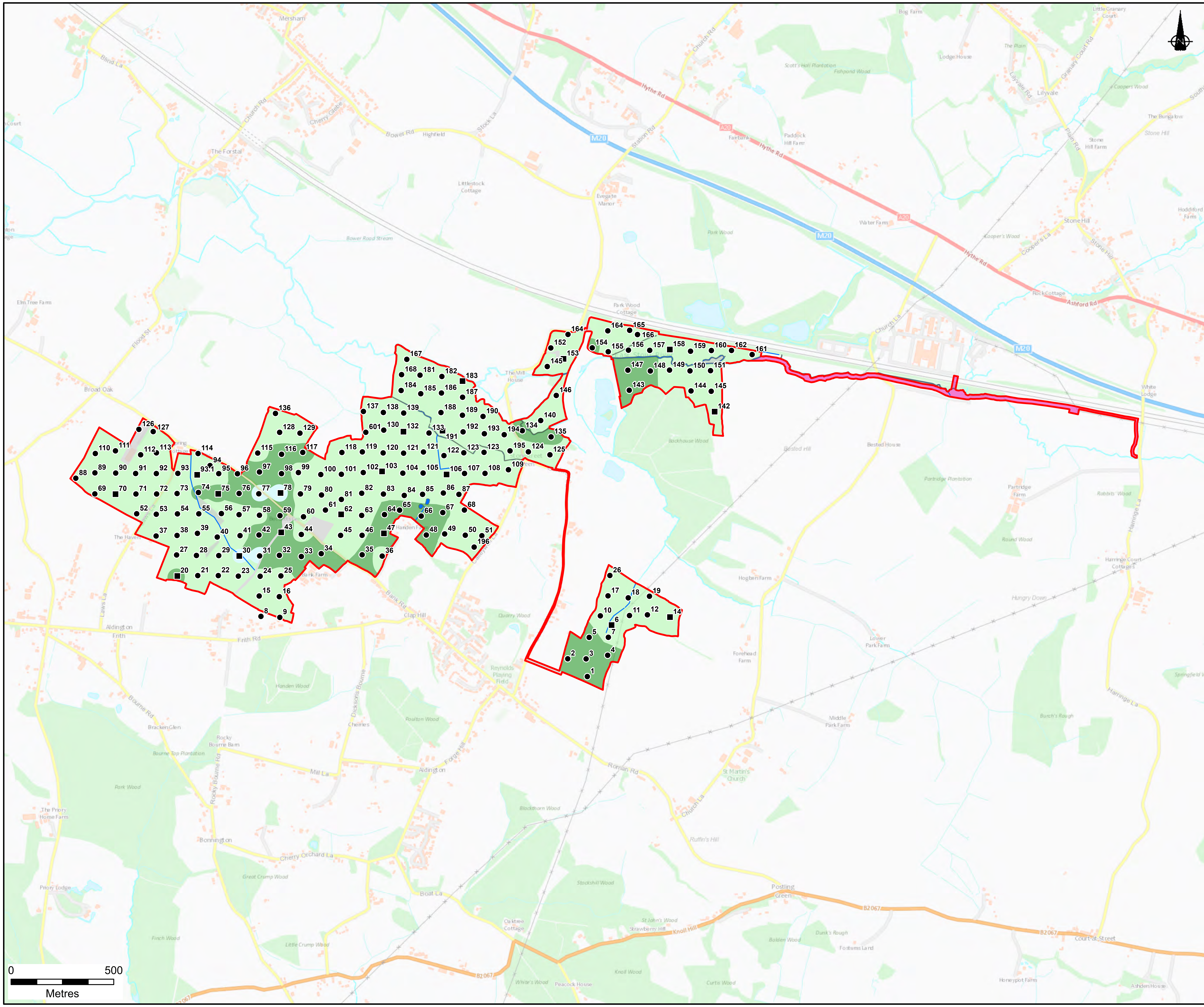
Table 6.1: Summary of ALC within the Site Boundary

ALC or Other Land Category	Area (ha)	Percentage of Site Area (%)
Grade 2 (very good)	1.95	1.03
Subgrade 3a (good)	34.47	18.23
Subgrade 3b (moderate)	142.01	75.09
Non-agricultural	6.52	3.45
Not Surveyed (cable route area)	4.17	2.20
Total	**189.12**	**100**

6.2.6. The soil survey found the soils within the site to be dominated by heavy and medium clay soils. Topsoils were generally stoneless to slightly stony in isolated regions. The upper subsoil and lower subsoil displayed mottling throughout the site with the consistency becoming firmer at depth.

6.2.7. As part of the assessment of socio-economic impact, a "Farm Impact Questionnaire" will be undertaken to establish the scale of various uses and landownerships on the site. This will consider factors such as the current agricultural management practices, agricultural yields and the end-use of any crop production. This will be reported in the Socio-economic chapter of the ES.

Figure 4: Agricultural Land Classification



KEY

- Site Boundary
- Survey Point
  - Auger Core
  - Profile Pit
- Watercourses
- Agricultural Land Classification
  - Grade 2
  - Non Agricultural
  - Subgrade 3a
  - Subgrade 3b
  - Not Surveyed

Notes:

Boundaries are indicative.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
D	KEY AMENDMENTS	03/22	SRW	KE	HK
C	TITLEBLOCK AMENDMENTS	03/22	SRW	KE	HK
B	AMENDMENTS TO SITE BOUNDARY	02/22	SRW	KE	HK
A	FIRST ISSUE	02/22	SRW	KE	HK

CLIENT

EVOLUTION POWER LTD

PROJECT

STONESTREET GREEN SOLAR

DRAWING TITLE

FIGURE 4: AGRICULTURAL LAND CLASSIFICATION

DRG No GM12014/002		REV D
DRG SIZE A2	SCALE 1:12,500	DATE March 2022
DRAWN BY SW	CHECKED BY KE	APPROVED BY HK

wardell armstrong

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CARLISLE
EDINBURGH
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LONDON
MANCHESTER
SHEFFIELD
STOKE ON TRENT

Policy Context

6.2.8. Paragraph 2.48.13 of Draft NPS EN-3[30] (2021) states that solar projects should avoid the use of BMV land where possible but that *'land type should not be a predominating factor in determining the suitability of the site location'.* Paragraph 2.48.15 states that solar development is *'not prohibited on sites of agricultural land classified 1, 2 and 3a'* and that *'at this scale, it is likely that applicants' developments may use some agricultural land, however applicants should explain their choice of site, noting the preference for development to be on brownfield and non-agricultural land*.'

6.2.9. Paragraph 5.11.8 of Draft NPS EN-1[31] (2021) encourages developers to develop and implement a Soil Management Plan ('SMP') which could help to minimise potential land contamination.

6.2.10. The current planning policy for Ashford Borough is set out in the ABC Local Plan[32], which was adopted in 2019. The plan seeks to monitor the amount of Grade 1 and 2 agricultural land lost to major residential development. It is noted that this is a different approach to the Draft NPS, which identifies Grades 1, 2, and Subgrade 3a as BMV land rather than Grades 1 and 2 only. It is assumed this is due to the prevalence of Subgrade 3a land within the Ashford Borough area, the avoidance of which would hamper the development proposed by the ABC Local Plan.

Summary of Soils and Agricultural Land Baseline at the Site

6.2.11. The IEMA issued a new guidance document, *'A New Perspective on Land and Soil in Environmental Impact Assessment'*[33], ('the IEMA Land and Soil in EIA Guidance') on 17 February 2022. This document comprises the first published guidance on the consideration of soils and land in EIA but does not include a detailed methodology for how such assessment should be undertaken. The aims of the guidance are to advocate *'a broader approach that involves assessing the natural capital and functional ecosystem services provided by land and soils'*. The IEMA Land and Soil

[30] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf Accessed March 202
[31] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf Accessed March 2022
[32] Available at: https://firstbarton.sharepoint.com/sites/SGSDCO/Shared%20Documents/General/:%20https:/www.ashford.gov.uk/media/jw3nbvq1/adopted-ashford-local-plan-2030.pdf Accessed March 2022
[33] Available at: https://www.iema.net/resources/blog/2022/02/17/launch-of-new-eia-guidance-on-land-and-soils Accessed March 2022

in EIA Guidance provides a framework for the assessment of the receptor sensitivity of soils based on *'soil resource and soil functions'*, and for the assessment of the likely magnitude of change based on the *'impacts restricting proposed land use'*. It is noted that all soil surveys for the project had been completed prior to the issue of the guidance.

6.2.12. Table 6.2 below sets out the IEMA Land and Soil in EIA Guidance's guidance on identifying magnitude of impact on soil resource and soil function.

Table 6.2: Guidance on Identifying Magnitude of Impact on Soil Resource and Soil Function

Magnitude of Impact (Change)	Description of Impacts Restricting Proposed Land Use
Major	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading), over an area of more than 20ha or loss of soil-related features (set out in Table 2 of the IEMA Land and Soil in EIA Guidance), as advised by other topic specialists in EIA team (including effects from 'temporary developments'*) or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20ha, or gain in soil-related features (as set out in Table 2 of the IEMA Land and Soil in EIA Guidance), as advised by other topic specialists in EIA team (including effects from 'temporary developments'*)
Moderate	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 and 20ha or loss of soil-related features set out (as set out in Table 2 of the IEMA Land and Soil in EIA Guidance), as advised by other topic specialists in EIA team (including effects from 'Temporary Developments'*)

Magnitude of Impact (Change)	Description of Impacts Restricting Proposed Land Use
	or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 and 20ha, or gain in soil-related features (as set out in Table 2 of the IEMA Land and Soil in EIA Guidance), as advised by other topic specialists in EIA team
Minor	Permanent, irreversible loss over less than 5ha or a temporary, reversible loss of one or more soil functions or soil volumes), or temporary, reversible loss of soil-related features (as set out in Table 2 of the IEMA Land and Soil in EIA Guidance), as advised by other topic specialists in EIA team or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5ha or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement, or temporary gain in soil-related features (as set out in Table 2 of the IEMA Land and Soil in EIA Guidance), as advised by other topic specialists in EIA team
Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use

*Temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils

6.2.13. The IEMA Land and Soil in EIA Guidance would broadly assign the following sensitivities to land within the site: land of ALC grades 1 and 2 would likely be assigned a very high sensitivity; land of ALC Subgrade 3a would likely be assigned a high sensitivity; and land of ALC Subgrade 3b would likely be assigned a medium sensitivity. These assumptions are based on the soil resource's ability to produce biomass for animal feed being its current primary function, and have not considered other factors.

6.2.14. Table 6.3 below sets out the IEMA Land and Soil in EIA Guidance's significance of effect matrix.

Table 6.3: Significance of Effect Matrix

Nature of Receptor (sensitivity/value/ importance)	Nature of impact (magnitude/probability/reversibility)				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate or large	Large or very large	Very large
High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
Negligible	Neutral	Slight	Neutral or slight	Neutral or slight	Slight

6.2.15. In accordance with relevant policy and guidance, the Applicant has sought to avoid the use of BMV land where possible, with preference given to the use of land in areas of poorer quality. Whilst land type has not been a predominating factor in determining the suitability of the site, it has taken into account ALC as part of the site selection process. Most land within Ashford Borough is provisionally mapped as Grade 3 (potential of BMV) with areas of "high grade" Grade 1 and Grade 2 BMV land. Locating the project elsewhere in the Borough is likely to incur a similar, if not greater, impact on BMV land.

6.2.16. The Proposed Development comprises rows of solar PV panels mounted on metal frames together with on-site energy storage and associated infrastructure and underground cable connection.

6.2.17. Modules are mounted on a metal frame which is attached to galvanised steel piles that are driven up to 3m into the ground. The distance between each row of frames is typically 3.2m to limit the impact of inter-row shading and to allow for movement of maintenance vehicles. Sufficient light passes through panels and between panel rows to maintain a grass sward which promotes rainfall infiltration and protects the soil surface from erosion.

6.2.18. The mounting frame elevates the panels approximately 800mm above the ground allowing vegetation to grow and smaller livestock such as sheep to pass below and between rows. Whilst the production of arable crops will cease as a result of the Proposed Development, the ability to continue to use the land for sheep grazing retains the agricultural use of the land throughout the duration of the project. Some areas of the site will be converted to flower-rich grassland providing the opportunity for soils to ‘rest’ from intensive arable cropping and resulting in improvements in soil condition, increased carbon sequestration and storage, habitat improvements for a range of wildlife and biodiversity net gain. As such, the majority of impacts on agricultural land will constitute short-term, temporary loss, with negligible to minor magnitude of change, and therefore likely slight to moderate significance (during the construction and decommissioning phases only), when the land will not be available for agricultural uses. These impacts are therefore not likely to be significant.

6.2.19. The Proposed Development also includes on-site energy storage and associated infrastructure, which will require concrete bases, together with a limited amount of access tracks within the site. However, the combined area of these will be a small fraction (<5%) of the total area occupied by the project and, at the end of the project, all concrete bases and access tracks will be removed as part of the decommissioning process. However, based on a ‘worst case scenario’, these long-term temporary losses are assumed to constitute a permanent loss for the purposes of the assessment. An appropriate SMP implemented during construction and decommissioning can ensure that the quality of the agricultural land at the site can be preserved. Under a worst case scenario, assuming that all long-term temporary development (i.e. on-site energy storage, associated infrastructure and access tracks) is on BMV land, this would equate to less than 5% of the total site area (c.5.67ha) 'lost'. This would likely constitute a minor to moderate magnitude of change, due to a small loss of soil volume and biomass production in these areas. This magnitude will be reduced if BMV is avoided by design for development that may result in 'permanent' loss, thereby resulting in a slight to moderate impact. These impacts are therefore not likely to be significant.

6.2.20. As noted above, the area of land required for the underground cable connection will not be affected by the Proposed Development, except for a short number of weeks during the subsoil cable installation during construction and its removal at decommissioning. Other short term temporary losses of land from agricultural use will occur during construction and decommissioning, including temporary compounds and access tracks. These works may involve the stripping and stockpiling of soil resources and/or the use of ground protective matting. If all best practice guidance is followed, which comprises standard mitigation measures, the likelihood of long-term detrimental change to soil functioning is greatly reduced, and the impact is likely to be minor, resulting in a likely impact of slight to moderate significance. These impacts are therefore not likely to be significant.

6.2.21. Overall, based on the IEMA Land and Soil in EIA Guidance, and given that the Proposed Development will cause a long-term temporary loss of soil volume and a change in soil functioning due to land use change, the receptor sensitivity (in-situ soil resources) would likely be predominantly medium, and the magnitude of change is likely to be predominantly minor. This would result in a likely impact of slight significance from the Proposed Development which would therefore be considered not significant.

6.2.22. Although significant effects from the Proposed Development are not anticipated, standard mitigation measures would be implemented, in line with current industry best practice guidance, such as DEFRA's 2009 Construction Code of Practice for the Sustainable Use of Soils[34] and the updated Institute of Quarrying's Good Practice Guide for Handling Soils in Mineral Workings (2021)[35]. These provide guidance on soil management, handling, storage, replacement and mitigation for soil works on construction sites. As industry best practice, these will be implemented for the Proposed Development as standard tertiary mitigation measures that will reduce the risk of likely significant adverse effects on the soil resources within the Site. As part of the CEMP that will be prepared for the Proposed Development, a site-specific SMP will be prepared based upon the findings of the soil survey. It is proposed that the approval and implementation of this will be secured by DCO requirement.

6.2.23. By following best practice guidance and implementing a site-specific SMP, it is anticipated that the impacts to soil resources would be minimal and that the Proposed Development will not result in a significant effect on soil resources.

Summary

6.2.24. In summary:

- The ALC survey confirms that 78.54% of the site is non-BMV land (Subgrade 3b and non-agricultural areas) (2.20% of the site has not been surveyed).
- During the operational phase under worst-case assumptions, over 95% of the land will remain available for agricultural use as grazing pasture. There will be a temporary loss of agricultural land during the construction and decommissioning phases, but this is short term and likely to be of a negligible significance.
- The maximum area of BMV land that is potentially long-term temporarily lost (or permanently lost, as a 'worst case' scenario) as a result of the Proposed Development is less than 5% of the total site area, the magnitude of change due to loss of agricultural land is likely to be minor, resulting in an impact of slight to moderate significance, which is not a significant effect. This is very much a 'worst case' scenario, as it assumes all concrete bases and access

[34] Available at: https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites Accessed March 2022
[35] Available at: https://f.hubspotusercontent30.net/hubfs/885685/Soils%20Guidance/IQ%20Soil%20Guidance%20Part%201.pdf Accessed March 2022

tracks would be situated on BMV land, which the site layout for the Proposed Development will seek to avoid.

- Most land within Ashford Borough is provisionally mapped as Grade 3 (potential of BMV) with areas of “high grade” Grade 1 and Grade 2 BMV land. Locating the project elsewhere in the Borough is likely to incur a similar if not greater impact on BMV land.
- With embedded mitigation in place, where access tracks, on-site energy storage, and electrical infrastructure (i.e. inverters, transformers and switchgear) will be located away from BMV land where possible, secondary mitigation through the implementation of a site-specific SMP, and tertiary mitigation by following industry best practice guidance, it is likely that the Proposed Development would not have a significant effect on soil resources.

6.2.25. As a result of the above, it is proposed to scope out this topic from the ES.

6.3. Air Quality

6.3.1. ABC undertakes routine ongoing monitoring of ambient air quality monitoring as part of its Local Air Quality Management responsibilities under Part IV of the Environment Act 1995 at 34 monitoring locations within the Borough.

6.3.2. ABC has not declared any Air Quality Management Areas (‘AQMA’) within the entire Borough. This means that the site is not located in an area where concentrations of nitrogen dioxide (‘NO_2’) or fine particulate matter (‘PM_{10}’) exceed their annual mean air quality target.

6.3.3. Concentrations of NO_2 and PM_{10} across the Borough are all below the relevant annual mean objective of 40 micrograms per cubic metre (‘$\mu g/m^3$’). The nearest AQMA to the site is located approximately 30km to the north-west in Maidstone, and this will not be impacted by the Proposed Development.

6.3.4. Given the nature of the Proposed Development (comprising a solar project and on-site energy storage), significant effects on the environment with respect to air quality are considered unlikely for the reasons detailed below.

Construction Phase

Dust

6.3.5. The potential impact from dust emissions arising from construction activities has been assessed by reference to the Institute of Air Quality Management's ('IAQM') guidance (2016)[36]. The IAQM approach is a screening assessment and risk-based qualitative assessment approach used for air quality assessments throughout the UK.

Step 1 – Screening

6.3.6. Step 1 is to screen the requirement for a more detailed assessment. The guidance states that an assessment will normally be required where there are existing sensitive human receptors within 350m of the site boundary and/or within 100m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

6.3.7. With regards to ecological receptors, the guidance states that an assessment will normally be required where there are existing receptors within 50m of the site boundary and/or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s). As these criteria are met, it is necessary to proceed to Step 2.

Step 2 – Impact Assessment

6.3.8. In accordance with the IAQM guidance, the main activities to be considered during the construction phase of the Proposed Development are demolition, earthworks, construction and trackout.

6.3.9. There are no demolition activities associated with the construction of the Proposed Development and so these have not been considered further within this impact assessment. Earthworks covers the processes of soil-stripping, ground-levelling, excavation, and landscaping. Construction activities will focus on the installation of

[36] Available at: Guidance on the Assessment of Dust from Demolition and Construction Accessed March 2022

solar panels and associated infrastructure.

6.3.10. Trackout is defined as the transport of dust and dirt by vehicles travelling from a construction site on to the public road network. This may occur through the spillage of dusty materials onto road surfaces or through the transportation of dirt by vehicles that have travelled over muddy ground on the site. This dust and dirt can then be deposited and re-suspended by other vehicles.

Step 2A

6.3.11. Step 2A of the impact assessment defines the potential dust emission magnitude from earthworks, construction and trackout in the absence of site-specific mitigation.

6.3.12. Examples of the criteria for the dust emission classes are detailed in the IAQM guidance. The results of this step are detailed in Table 6.4.

Step 2B

6.3.13. Step 2B of the construction phase dust impact assessment defines the sensitivity of the area, considering the significance criteria detailed in IAQM guidance, earthworks, construction and trackout. The sensitivity of the area to each activity is assessed for potential dust soiling and human health effects.

6.3.14. For earthworks and construction, there are currently between 10 and 100 residential receptor locations within 50m of where these activities may take place, which is assumed to be the site boundary for the purposes of this impact assessment.

6.3.15. For trackout, there are between 10 and 100 receptors within 50m of where trackout may occur for a distance of up to 500m from the site entrance.

Step 2C

6.3.16. Step 2C of the construction phase dust impact assessment defines the risk of impacts from each activity, by combining the dust emission magnitude with the sensitivity of the surrounding area.

6.3.17. The risk of dust impacts from each activity, with no mitigation in place, has been assessed in accordance with the criteria detailed in IAQM guidance. The results of this step are detailed in Table 6.2.

Summary of Step 2

6.3.18. Table 6.4 details the results of Step 2 of the construction phase assessment for human receptors.

Table 6.4: Step 2 of the Construction Phase Assessment for Human Receptors

	Activity			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Step 2A				
Dust Emission Magnitude	N/A	Large[a]	Large[b]	Medium[c]
Step 2B				
Sensitivity of Closest Receptors	N/A	High	High	High
Sensitivity of Area to Dust Soiling Effects	N/A	Medium	Medium	Medium
Sensitivity of Area to Human Health Effects	N/A	Low[d]	Low[d]	Low[d]
Step 2C				
Dust Risk: Dust Soiling	N/A	Medium Risk	Medium Risk	Low Risk
Dust Risk: Human Health	N/A	Low Risk	Low Risk	Low Risk

	Activity			
	Demolition	Earthworks	Construction	Trackout

a. The total individual site area is estimated to be greater than 10,000m^2.
b. Classed as large where the total building volume to be constructed is estimated to be more than 100,000m^3.
c. Classed as medium where the number of HDV movements in an average day is estimated to be between 10 and 50 AADT.
d. Background annual mean PM_{10} concentration is less than 24µg/m^3 for 2022 (based on data obtained from the 2018-based DEFRA Background Maps,).

Step 3 – Mitigation

6.3.19. During the construction phase, the implementation of effective mitigation measures will substantially reduce the potential for nuisance dust and fine particulate matter to be generated.

6.3.20. Step 2C of this impact assessment has identified that the risk of dust soiling and human health effects is not negligible for all activities and therefore site-specific mitigation will need to be implemented to ensure dust effects from these activities will be not significant.

Recommendations for Site-Specific Mitigation

6.3.21. Specific mitigation relating to dust control may be in the form of construction best practices or could include a dust management plan (as part of the CEMP or CTMP). Recommendations for mitigation within the IAQM guidance include:

- Revegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Protect surfaces and exposed material from winds until disturbed areas are sealed and stable;
- Dampen down exposed stored materials, which are to be stored as far from sensitive receptors as possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;

- Avoid activities that generate large amounts of dust during windy conditions;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- Avoid dry sweeping of large areas;
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;
- Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- Minimise vehicle movements and limit vehicle speeds – the slower the vehicle speeds, the lower the dust generation;
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever the site size and layout permits; and
- Access gates to be located at least 10m from receptors, where possible.

6.3.22. All dust and air quality complaints should be recorded, and appropriate measures be taken to identify causes and reduce emissions in a timely manner. Exceptional incidents which cause dust emissions, and the action taken to resolve the situation, should be recorded in a logbook.

6.3.23. It is recognised that the final design solutions will be developed with the input of the Contractor to maximise construction efficiencies, to use modern construction techniques and sustainable materials and to incorporate the particular skills and experience offered by the appointed contractor.

Step 4 – Residual Effects

6.3.24. Step 4 of the construction phase dust assessment has been undertaken to determine the significance of the dust effects arising from earthworks, construction and trackout associated with the Proposed Development.

6.3.25. The implementation of effective mitigation measures during the construction phase, such as those detailed in Step 3, will substantially reduce the potential for nuisance dust and fine particulate matter to be generated and any residual impact should be not significant.

6.3.26. Standard mitigation measures to control dust generation impacts associated with the construction activities will be described in the outline CEMP (to be provided as an Appendix to the ES) and the approval and implementation of the detailed CEMP will be secured by requirement in the DCO. The CEMP will ensure construction practice is carried out to minimise impact on existing sensitive receptors and the environment in terms of air quality and dust impact such that there should be no significant air quality effects.

Vehicle Emissions

6.3.27. Construction vehicles on the road network will represent only a temporary change in vehicle flows. Effects from vehicle movements will be considered in the Traffic and Access chapter of the ES. The proposed routing of construction phase vehicles is shown in Figure 5: Construction Traffic Access Route. Given the size, scale and nature of the Proposed Development, construction vehicle movements are not expected to exceed 50 annual average daily traffic ('AADT') heavy goods vehicle ('HGV') movements (25 deliveries per day). This falls well below the criteria within guidance[37] (100 AADT for HGVs) which would indicate a possibility of a significant effect on local air quality such that a detailed air quality survey should be completed.

6.3.28. An Outline CTMP will be submitted as a supporting appendix to the Traffic and Access ES chapter. Its implementation will ensure that impacts on existing

[37] Available at: https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf Accessed March 2022

sensitive receptors and the environment in terms of air quality as a result of construction traffic movements are minimised and ensure there are no likely significant effects.

Operational Phase

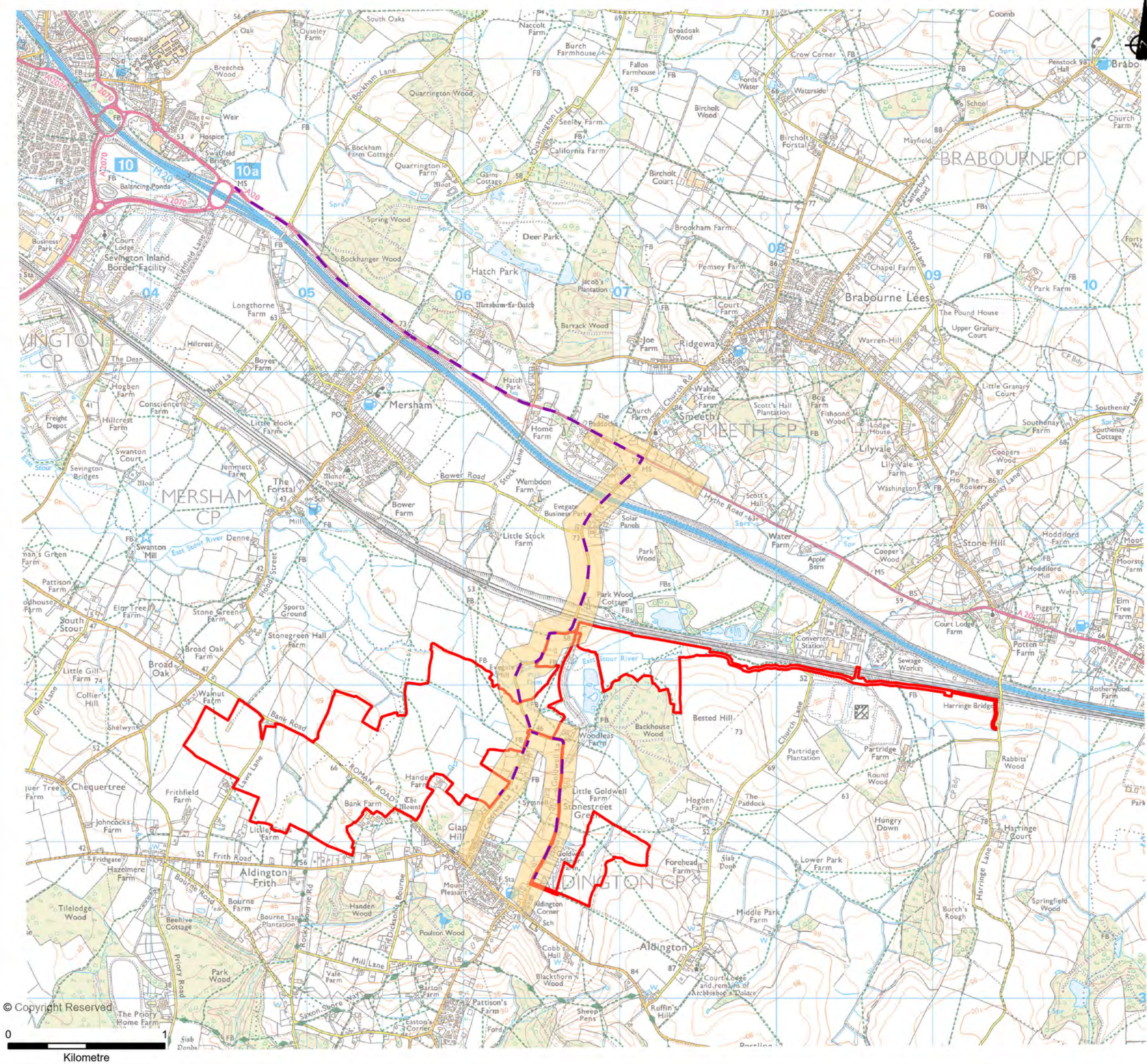
6.3.29. Once construction is complete, the Proposed Development should result in a negligible change to air quality.

6.3.30. The project will not introduce a new pollutant or dust source to the area and there will be no direct point sources of emissions to the atmosphere.

6.3.31. No effects from vehicle emissions are anticipated due to the low number of anticipated vehicles movements. The Proposed Development is expected to generate a maximum of 2 (two-way) AADT vehicle movements per day for maintenance purposes, which falls well below the criteria within guidance[38] to undertake a more detailed assessment (500 AADT for light goods vehicles (‘LGV’) vehicles and 100 AADT for HGVs). The effect is therefore considered likely to be negligible and not significant.

[38] Available at: https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf Accessed January 2022

Figure 5: Construction Traffic Access Route



KEY

- Site Boundary
- Proposed Extent of Transport Assessment Study Area
- Proposed Construction Access Route

Notes:

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

EPL 001 LIMITED

PROJECT

STONESTREET GREEN SOLAR

DRAWING TITLE

FIGURE 5: CONSTRUCTION TRAFFIC AND ACCESS ROUTES

DRG No.		REV
GM12014-008		A
DRG SIZE: A3	SCALE: 1:25,000	DATE: MARCH 2022
DRAWN BY: CT	CHECKED BY: SS	APPROVED BY: JF

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Decommissioning Phase

6.3.32. Dust impacts during the decommissioning phase of the Proposed Development will be similar to, or less than, those of the construction phase. Standard mitigation measures to control dust generation impacts will be agreed prior to decommissioning to ensure the process is carried out to minimise impact on existing sensitive receptors and the environment in terms of air quality and dust impact such that there should be no significant air quality effects.

6.3.33. HGV movements associated with the decommissioning phase of the Proposed Development are not expected to be greater than those associated with the construction phase, i.e. no greater than 50 AADT. This falls well below the criteria in guidance[7] to undertake a more detailed assessment (100 AADT).

Air Quality Summary

6.3.34. The implementation of effective mitigation measures during the construction and decommissioning phases will substantially reduce the potential for nuisance dust and fine particulate matter to be generated and any residual impact should be not significant.

6.3.35. Standard mitigation measures to control dust emissions will be described in the outline CEMP appended to the ES, with approval and implementation of a detailed CEMP secured by a requirement in the DCO. Vehicle movements are not expected to exceed 50 AADT and therefore in line with the guidance a more detailed assessment is not required.

6.3.36. During the operational phase, the Proposed Development will not introduce any pollutant sources and vehicle movements will be minimal (associated with maintenance activities).

6.3.37. As no significant effects are anticipated during any of the construction, operational or decommissioning phases, it is proposed to incorporate air quality management measures into the CEMP/CTMP and scope out air quality as a topic from the ES.

6.4. Land Contamination

6.4.1. A Phase 1 Geo-environmental and Geotechnical Desk Study Report is provided at Appendix 2. A summary of its findings is provided below.

Baseline Conditions

6.4.2. The site is currently predominantly used as agricultural fields and pastureland. There is a small area in the south-west of the site which is currently used to temporarily store small volumes of farm waste prior to recycling.

6.4.3. There is no recorded history of contamination on the site, nor has there been recorded activities undertaken at the site which would be a high risk source of soil contamination, as the site has always been predominantly in agricultural land use with 6.52 hectares of non-agricultural land use.

Historical Context

6.4.4. A review of historical map extracts does not record any significant previous development on-site. An 11kv substation was installed within the north-eastern part of the site in 1975, along with an access track. This remains in place and is owned and managed by UKPN.

6.4.5. The site’s surrounding land uses include the HS1 railway line immediately adjacent to the north of the site boundary, the M20 slightly further to the north and a substation and sewage treatment works to the north of the site, on the opposite side of the HS1 railway line.

6.4.6. Two disused quarries, located immediately adjacent to the south and approximately 250m south-east of the site boundary, respectively, are recorded as operational from 1939 to 1975 and 1896 to 1975, respectively.

Geological Context

6.4.7. Records associated with a British Geological Survey ('BGS')[39] borehole located within the north-eastern part of the site identify Made Ground (reworked natural material). This was noted across the site during the site walkover survey undertaken in November/December 2021.

6.4.8. Superficial deposits in the form of alluvial clay, silt sands and gravel are shown to be underlying the north-east and northern parts of the site.

6.4.9. Bedrock underlying the site comprises the following:

- Weald Clay Formation – mudstone (south-west, north, north-east and east);
- Hythe Formation – interbedded sandstone and limestone (centre, very small section of the north-east and east); and
- Atherfield Clay Formation – sandy mudstone (centre, south-east, north-east and east).

Hydrogeological Context

6.4.10. The Groundsure report (included in Appendix 2) identifies superficial deposits within the north and north-eastern parts of the site, which have been classified by the Environment Agency as 'Secondary A' aquifer[40].

6.4.11. The bedrock beneath most of the site has been classified by the Environment Agency as 'Unproductive' aquifer, except for the areas within the centre, east and north-east, which have been classified by the Environment Agency as a 'Principal' aquifer[41].

Geo-environmental Context

6.4.12. Potential contaminant sources include agricultural land fertilisers, historical landfill on-site, Made Ground materials and a sub-station. However, based on the findings

[39] Available at: https://www.bgs.ac.uk/ Accessed March 2022
[40] Groundsure Report, Enviro + Geo Insight, Appendix 2, dated 17th December 2021.
[41] Ibid.

of the Phase 1 Geo-environmental and Geotechnical Desk Study Report, these are not considered to be significant sources of contamination.

6.4.13. Within the vicinity of the site (immediately south and approximately 250m south-east of the site boundary, respectively), there are two records of historical landfills, outlined to include inert, household and/or commercial waste. There is also a small area located within the south-west of the site which is currently being used for temporary farm waste storage.

6.4.14. A UXO Desk Study and Risk Assessment will be undertaken in respect of the protected crash site of a Second World War aircraft located within the site boundary to confirm this conclusion. Further details on this crash site are included in Section 8 (Cultural Heritage).

Summary

6.4.15. Based on the findings of the Phase 1 Geo-environmental and Geotechnical Desk Study Report, and the identified low potential for significant contamination to be present at the site, likely significant effects in respect of contamination resulting from the construction, operation and decommissioning of the Proposed Development are not anticipated.

6.4.16. Standard mitigation measures, to be set out in the CEMP and secured by a requirement in the DCO, will be implemented to mitigate effects during the construction phase to ensure that the Proposed Development will not significantly impact ground conditions, including the creation of new contamination pathways or worsening of existing contamination pathways. Should any contamination be found on-site during the construction phase, appropriate standard mitigation measures will be implemented as part of a remediation strategy.

6.4.17. Once construction is complete, there should be no further effects during the operational phase. Impacts during the decommissioning phase of the Proposed Development will be similar to, or less than, those of the construction phase.

6.4.18. As no significant effects are anticipated during either the construction, operational or decommissioning phases, it is proposed to scope out land contamination as a topic from the ES.

6.5. Human Health

6.5.1. The design, including buffer zones between the Proposed Development and sensitive receptors, will minimise any impact to human health as a result of the project. The effects of the Proposed Development on human health will be assessed in the Traffic and Access and Noise ES chapters. As set out in this Scoping Report, likely significant effects from the Proposed Development on human health in respect of air quality and land contamination are not anticipated.

6.5.2. A separate topic chapter on Human Health is proposed to be scoped out of the ES.

6.6. Vibration

6.6.1. Vibration during the construction phase will be limited to piling solar panel frame structures and movement of mobile plant that could have an impact on sensitive receptors.

6.6.2. The piles needed for the framing are small and typically limited to less than 3m depth using a small piling rig that will only result in a minor perceptible vibration impact within 30m of the piling area. Mitigation measures will be included in the CEMP (to be secured by DCO requirement) to ensure that a low vibration piling rig will be used at any location identified as within 30m of a sensitive receptor. These types of piling rigs have very low vibration emissions when measured within 3m of the rig location and therefore there should be no vibration impacts felt by any receptor as a result.

6.6.3. Large, tracked excavators can cause vibration when moving. Depending on ground conditions, this is generally when moving within approximately 50m of a sensitive receptor. An appropriate construction methodology would be incorporated into the CEMP to avoid the use of large, tracked excavators within 50m of residential properties, and where this cannot be avoided, appropriate monitoring and communication would be undertaken to avoid giving rise to significant adverse impacts.

6.6.4. Vibration from vehicle movements on roads and access tracks is generally only noticeable where they are poorly maintained and therefore are not considered likely to result in significant effects.

6.6.5. Due to the nature of the Proposed Development, significant vibration effects during operations are not anticipated. The decommissioning phase impacts would be similar to and no greater than the construction phase.

6.6.6. As a result of the above, it is proposed to scope out vibration effects during construction, operation and decommissioning of the Proposed Development from the ES.

6.7. Major Accidents and Disasters

6.7.1. There is no definition of "major accidents or disasters" provided in the EIA Regulations. However, the IEMA Quality Mark Article on 'Assessing Risks of Major Accidents / Disasters in EIA'[42] produced by WSP in 2016 provides the following definition: *'man-made and natural risks which are considered to be likely, and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with/rectify i.e. a significant effect.'*

6.7.2. The UK Government Risk Register of Civil Emergencies ('Risk Register')[43] provides a list of key risks that have the potential to cause significant disruption in the UK and therefore could result in a potential major accident or disaster.

6.7.3. The nature, scale and location of the Proposed Development is not considered to be vulnerable to the majority of risks identified in the Risk Register.

6.7.4. A number of potential risks have been identified that require further consideration to identify both the impact and potential receptors. However, it should be noted that it is considered that certain workers, for example construction workers, can be

[42] Available at: https://www.iema.net/resources/blog/2020/09/23/iema-major-accidents-and-disasters-in-eia-primer#:~:text=What%20is%20a%20Major%20Accidents,major%20accidents%20and%2For%20disasters. Accessed March 2022

[43] Available at: https://www.gov.uk/government/collections/national-risk-register-of-civil-emergencies Accessed March 2022

excluded from the assessment because existing legislation is considered sufficient to minimise any risk to these receptors from major accidents or disasters to a reasonable level (for example, the Health and Safety at Work etc. Act 1974 and the Construction (Design and Management) (CDM) Regulations 2015).

6.7.5. The following risks will be further considered and reported on within the relevant chapters of the ES:

- **Flooding** - a Flood Risk Assessment ('FRA') will be prepared and appended to the Water Environment ES chapter to assess effects on surface water flooding which could increase flood risk for nearby property and people;
- **Climate Change** - the Proposed Development's effects on, and vulnerability to, climate change will be assessed in the Climate Change ES chapter;
- **Fire** - there is some limited potential for fire as a result of the energy storage element of the project. However, the energy storage system will include cooling systems which will ensure that temperatures remain within safe conditions at all times to minimise the risk of fire. An Outline Energy Storage Safety Management Plan will be appended to ES Chapter 3 Site and Proposed Development and will set out fire risk mitigation measures that will be implemented, including ensuring that there is adequate separation between storage units such that, in the unlikely event of a fire, this would remain isolated from other infrastructure and is not able to spread and lead to a major incident;
- **Road Accidents** – the Traffic and Access ES chapter will assess the Proposed Development's likely significant effects on traffic-related accidents and safety during the construction and decommissioning phases, including abnormal load movements;
- **Glint and Glare** – the potential for glint and glare effects on rail, road users and aircraft will be assessed in the Glint (and Glare) Assessment to be appended to the ES; and
- **Plant Disease** – mitigation measures, such as the use of a wide species mix, will be incorporated into the planting strategy for the Proposed Development (to be secured within an Outline Landscape and Environmental Management

Plan ('LEMP')) to account for susceptibility to plant pests and diseases in light of climate change.

6.7.6. At all times, the Proposed Development will be progressed in accordance with the relevant health and safety legislation, regulations and industry guidance to control and manage any potential risks.

6.7.7. As the potential impact on receptors resulting from major accidents or disasters will be reported in the relevant chapter topic, it is proposed that a separate topic chapter on major accidents and disasters is scoped out of the ES. The relevant ES chapters will include clear signposting of major accident or disaster impacts to enable these to be identified.

6.8. Electric, Magnetic and Electromagnetic Fields

6.8.1. The use, generation, transmission and distribution of electricity can create power frequency electric, magnetic and electromagnetic fields ('EMF'). EMFs arise around electrical infrastructure such as electric cables and power lines, as well as equipment that uses electricity in domestic, industrial, and commercial settings.

6.8.2. Magnetic fields are not blocked by the majority of materials, however, buildings, structures (such as fences) and vegetation can block electric fields. The strength of both magnetic and electric fields reduces as the distance from their source increases.

6.8.3. Magnetic fields are affected by the electrical currents flowing. In comparison to overhead lines, ground-level magnetic fields from underground cables typically reduce more quickly with distance but can be greater at small distances from the cable.

6.8.4. There is no statutory provision in the planning system regarding protection from electric, magnetic, and electromagnetic fields. The Department for Energy and Climate Change ('DECC') in 2012[44] suggested that guidelines published by the

[44] Available at: https://www.gov.uk/government/publications/demonstrating-compliance-with-emf-public-exposure-guidelines-voluntary-code-of-practice\\\ Accessed March 2022

International Commission on Non – Ionizing Radiation Protection ('ICNIRP') in 1998[45] for both occupational and public exposure should be considered.

6.8.5. Page 5 of these guidelines state that 'overhead power lines at voltages up to and including 132 kV, underground cables at voltages up to and including 132 kV and substations at and beyond the publicly accessible perimeter' are not capable of exceeding the ICNIRP exposure guidelines for electromagnetic fields. These guidelines are considered to constitute best practice guidance. The Proposed Development proposes to use cables and infrastructure with a maximum voltage up to and including 132kV. In light of this, it is proposed that this topic is scoped out of the ES.

6.9. Telecommunications, Television Reception and Utilities

6.9.1. A desk-based study was undertaken by the Applicant in February 2022 to identify whether any diversions are required with respect to existing below ground utility infrastructure, based on information provided by utilities providers.

6.9.2. The design of the Proposed Development will seek to avoid any diversions but should this be necessary the Applicant will consult with the relevant telecommunication or utility providers and provide evidence of agreement of such diversions in the ES. Utilities bodies defined as prescribed consultees will be consulted in line with the PA2008.

6.9.3. Given the nature of the Proposed Development, likely significant effects on television reception are not anticipated.

6.9.4. As a result, it is proposed that telecommunications, television reception and utilities is scoped out of the ES.

6.10. Wind Microclimate

6.10.1. Likely significant wind effects are not anticipated given that energy generation uses are proposed that will not include large areas of public realm and outdoor amenity

[45] Available at: https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf, Health Physics 74 (4): 494-522; 1998 Accessed March 2022

space where the public or site users will experience significant wind effects. The Proposed Development will not include any high-rise buildings or high-rise structures which could influence wind patterns. Therefore, likely significant wind effects are not anticipated, and it is proposed that this topic will be scoped out of the ES.

6.11. Daylight, Sunlight and Overshadowing

6.11.1. The scale and massing of the Proposed Development will not cause changes to daylight or sunlight availability or cause overshadowing of residents or amenity space. It is therefore proposed to scope this topic out of the ES.

6.12. Glint and Glare

6.12.1. A Glint (and Glare) Assessment will be prepared by Wardell Armstrong and will form a technical appendix to the ES. This will include an assessment of glint and glare effects on any relevant sensitive receptors, such as aviation and rail receptors. The Landscape and Visual Impact Assessment ('LVIA') will include reference to the findings of the Glint (and Glare) Assessment, and where appropriate will consider the impact of any reflectivity in the assessment of landscape and visual effects. Where relevant to landscape, any mitigation recommendations identified within the Glint (and Glare) Assessment will be indicated as part of the landscape mitigation strategy. Any impacts associated with glint and glare will therefore be considered within relevant chapters of the ES rather than in a specific chapter for glint and glare.

6.13. Lighting

6.13.1. During the construction and decommissioning phases of the Proposed Development, lighting will be operated in accordance with the relevant best practice guidance, including with regard to sensitive ecology. Construction and decommissioning phase lighting impacts on sensitive ecology will be assessed in the Biodiversity ES chapter. Construction and decommissioning phase lighting impacts on the existing character of the night-sky will be assessed in the Landscape and Views ES chapter.

6.13.2. The Proposed Development will not be permanently lit during the operational phase, with lighting limited to motion activated security lighting. Operational lighting will be installed for emergency purposes only. On this basis, the operational phase of the Proposed Development is not anticipated to produce a significant lighting impact on the existing character of the night-sky or sensitive ecology. Further details are provided in Section 9 (Landscape and Views) and Section 10 (Biodiversity) of this Scoping Report.

6.13.3. In light of the above, it is proposed that a separate topic chapter for lighting is scoped out of the ES.

6.14. Minerals

6.14.1. Parts of the site are located within a Mineral Safeguarding Area ('MSA'). MSAs cover areas of known mineral resource that are, or may in future be, of sufficient value to warrant protection for future generations and therefore should be taken into account in land use planning decisions to ensure that mineral resources are not unknowingly or needlessly sterilised.

6.14.2. The Proposed Development will not sterilise the mineral resource as minerals could be extracted if required following decommissioning of the Proposed Development. It is considered that this satisfies the Kent Minerals and Waste Local Plan Safeguarding requirements[46] and therefore it is proposed to scope out minerals as a topic in the ES. The Applicant will consult with the Kent Minerals and Waste Officers to confirm this position.

6.15. Waste

6.15.1. A description of the potential types of construction waste and estimated volumes will be described in the Site and Development Description chapter of the ES. The CEMP (incorporating a Site Waste Management Plan (‘SWMP’)) will detail the mitigation measures to be implemented during the construction phase to minimise waste and ensure that it is stored, managed, collected and disposed of

[46] Available at: https://www.kent.gov.uk/__data/assets/pdf_file/0011/120530/supplementary-planning-document.pdf Accessed March 2022

appropriately. It is noted that large scale earthworks are not anticipated, and construction phase waste is anticipated to be limited.

6.15.2. There will be no waste generated during the operational phase of the Proposed Development, except for limited volumes of general waste associated with maintenance activities.

6.15.3. During the decommissioning phase, site infrastructure, including any waste from the energy storage facility, will be removed and recycled or disposed of in accordance with good practice and market conditions at that time. It is anticipated that waste during decommissioning will be controlled via a DEMP which will be subject to a DCO requirement.

6.15.4. The Proposed Development will not result in significant waste effects on the environment during any of the construction, operation or decommissioning activity phases.

6.15.5. As a result, it is proposed to scope this discipline out of the ES. However, as required by the EIA Regulations, the ES will include an estimate, by type and quantity, of expected residues and emissions and quantities and types of waste produced during the construction, operational and decommissioning phases of the Proposed Development.

6.16. Conclusion

6.16.1. A summary of the topic areas proposed to be scoped out of the ES, together with the associated rationale, is provided in Table 6.5 below.

Table 6.5 - Summary of Topics to be Scoped Out

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
Agricultural Land and Soils (Based on IEMA Land and Soil EIA Guidance)	Negligible to Minor	Very High (ALC Grade 2), High (ALC Subgrade 3a), and Medium (ALC Subgrade 3b)	Slight (ALC Grade 3a and 3b) – Moderate (ALC Grade 2) and not significant	The ALC survey confirmed that 78.54% of the site is non-BMV land (Subgrade 3b and non-agricultural areas). During the operational phase under worst-case assumptions, over 95% of the land will remain functional. There will be a temporary loss of agricultural land during the construction and decommissioning phases but this is short term and likely of a negligible to minor significance and not significant. The maximum area of BMV land that is potentially long-term temporarily lost (or permanently lost, as a 'worst case' scenario) as a result of the Proposed Development is less than 5% of the total site area at 5.67ha constituting a likely slight significance if located on Subgrade 3b

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
				where possible, and not significant. By following industry best practice mitigation methods, the resulting change to soil function should be of negligible to minor significance, and not significant.
Air Quality	Very low	Very low	Negligible	During the operational phase, the Proposed Development will not introduce any pollutant sources and vehicle movements will be minimal. During construction and decommissioning any potential impacts from dust emissions will be not significant and standard mitigation measures to control dust emissions will be outlined in the CEMP and secured by requirement in the DCO. Potential effects from construction and decommissioning traffic movements will be controlled by the CTMP to minimise impacts.

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
Land Contamination	Very low	Very low	Negligible	Based on the findings of the Phase 1 Geo-environmental and Geotechnical Desk Study Report, and the identified low potential for significant contamination to be present at the site, likely significant effects in respect of contamination resulting from the construction, operation and decommissioning of the Proposed Development are not anticipated.
Human Health	Very low - Medium	Very low - High	Negligible - Minor	The Proposed Development will minimise any impact to human health. The effects on human health will be assessed in the Traffic and Access and Noise ES chapters. Likely significant effects on human health in respect of air quality and land contamination are not anticipated.
Vibration	Very low	Very low -	Negligible - Minor	The piles needed for the framing are small and typically

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
		High		limited to less than 3m depth using a small piling rig that will only result in a minor perceptible vibration impact within 30m of the piling area. Mitigation measures will be included in the CEMP (to be secured by DCO requirement) to ensure that a low vibration piling rig will be used at any location identified as within 30m of a sensitive receptor. The proposed piling rigs have very low vibration emissions when measured within 3m of the rig location and therefore there should be no vibration impacts felt by any receptor as a result. Unlikely that large excavator units would be required for any significant duration close to sensitive properties and therefore vibration from the use of these vehicles is not anticipated to be significant given the low number of

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
				properties located within 50m of the site boundary. Due to the nature of the Proposed Development, significant vibration effects during operation are not anticipated. The decommissioning phase impacts would be similar to and no greater than the construction phase.
Major Accidents and Disasters	Very low - Medium	Very low - High	Negligible - Minor	At all times, the Proposed Development will be progressed in accordance with the relevant health and safety legislation, regulations and industry guidance to control and manage any potential risks. The potential impact on receptors resulting from major accidents or disasters will be reported and appropriately signposted in the relevant topic chapters (Traffic and Access, Water Environment, Climate Change and Landscape and Views).

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
Electric, Magnetic and Electromagnetic Fields	Very low	Very low	Negligible	The Proposed Development will use cables and infrastructure with a maximum voltage up to and including 132kV.
Telecomms, Television Reception and Utilities	Very low - Medium	Very low	Negligible	The design of the Proposed Development will seek to avoid any diversions. Should the diversion of any infrastructure be required, the Applicant will consult with the relevant provider and submit evidence of agreement to any diversions in the ES. Given the nature of the Proposed Development, likely significant effects on television reception or not anticipated.
Wind Microclimate	Very low	Very low	Negligible	The Proposed Development will not include large areas of public realm and outdoor amenity space where the public or site users will experience significant wind

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
				effects or include any high-rise buildings or high-rise structures which could influence wind patterns.
Daylight, Sunlight and Overshadow-ing	Very low	Very low	Negligible	The Proposed Development will not cause changes to daylight or sunlight availability or cause overshadowing of residents or amenity space.
Glint and Glare	Very low - Low	Very low - Medium	Negligible - Minor	The potential for glint and glare effects on rail, road users and aircraft resulting from the Proposed will be assessed in the Glint (and Glare) Assessment to be appended to the ES. The Landscape and Views ES chapter will include reference to the findings of the Glint (and Glare) Assessment, and where appropriate will consider the impact of any reflectivity in the assessment of landscape and visual effects.

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
Lighting	Very low - Low	Very low - Medium	Negligible - Minor	Construction and decommissioning phase lighting impacts on sensitive ecology will be assessed in the Biodiversity ES chapter. Construction and decommissioning phase lighting impacts on the existing character of the night-sky will be assessed in the Landscape and Views ES chapter. The Proposed Development will not be permanently lit during the operational phase. Therefore, it is not anticipated to produce a significant lighting impact on either the existing character of the night-sky or on sensitive ecology.
Minerals	Very low	High	Minor	The Proposed Development will not sterilise the mineral resource, as minerals could be extracted if required following decommissioning.

Topic	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (post implementation of standard mitigation measures)	Justification for Scoping Out
Waste	Very low	Very low	Negligible	The mitigation measures to minimise waste will be controlled by the CEMP and DEMP. The Proposed Development will not result in significant waste effects on the environment during any of the construction, operation or decommissioning activity phases.

7. Topics to be Scoped In

7.1. Introduction

7.1.1. As set out in Section 6 (Topics to be Scoped Out) of this Scoping Report, this scoping exercise has been informed by desk-based research, professional judgement and other information available for the site. The Proposed Development is anticipated to result in likely significant environmental effects on the environmental topics considered in this section.

7.2. Overview of Topics to be Scoped In

7.2.1. Table 7.1 overleaf provides a summary of the environmental topics to be scoped in to the ES, and for which a topic-specific chapter will be prepared.

Table 7.1 Summary of Topics to be Scoped In

Topics	Potential Effects			Likely Significant Effects (Pre-Mitigation)	Comments
	Construction	Operation	Decommission-ing		
Cultural Heritage	✓ - S	✓ - L	✓ - S	✓	Chapter to be prepared
Landscape and Views	✓ - S	✓ - M	✓ - S	✓	Chapter to be prepared
Biodiversity	✓ - S/L	✓ - L	✓ - S	✓	Chapter to be prepared
Water Environment	✓ - S	✓ - L	✓ - S	✓	Chapter to be prepared
Socio-economics	✓ - S	✓ - L	✓ - S	✓	Chapter to be prepared
Traffic and Access	✓ - S	x	x	✓	Chapter to be prepared
Noise	✓ - S	✓ - L	✓ - S	✓	Chapter to be prepared
Climate Change	✓ -S	✓ - L	x	✓	Chapter to be prepared
Human Health	✓ - S	✓ - L	✓ - S	✓	Separate topic chapter scoped out of the ES (topic considered in Traffic and Access, and Noise ES chapters)
Major Accidents and	✓ - S	✓ - L	✓ - S	✓	Separate topic chapter

Topics	Potential Effects			Likely Significant Effects (Pre-Mitigation)	Comments
	Construction	Operation	Decommission-ing		
Disasters					scoped out of the ES (topic considered in Water Environment, Climate Change, Traffic and Access and Landscape and Views ES chapters)
Lighting	✓ - S	x	✓ - S	✓	Separate topic chapter scoped out of the ES (topic considered in Biodiversity and Landscape and Views ES chapters)

Key:

✓ Likely Significant Effect / x No Likely Significant Effect.

S – Short-Term Effect / M – Medium Term Effect / L – Long-Term Effect (refer to Section 5 (EIA Methodology) of this Scoping Report for definitions)

8. Cultural Heritage

8.1. Introduction

8.1.1. An assessment of the likely significant effects of the Proposed Development on the environment with respect to cultural heritage will be undertaken.

8.2. Planning Policy Context

8.2.1. Section 5.9 of Draft NPS EN-1 sets out the matters to be considered in the assessment of any likely significant heritage impacts of the Proposed Development. It states that the construction, operation and decommissioning of energy infrastructure has the potential to result in adverse impacts on the historic environment above, at, and below the surface of the ground (paragraph 5.9.1). The draft NPS states:

- *'As part of the ES the applicant should provide a description of the significance of the heritage assets affected by the proposed development, including any contribution made by their setting. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on their significance.'* (paragraph 5.9.11)
- *'Where a site on which development is proposed includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation.'* (paragraph 5.9.12)
- *'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. Studies will be required on those heritage assets affected by noise, vibration, light and indirect impacts, the extent and detail of these studies will be proportionate to the significance of the heritage asset affected.'* (paragraph 5.9.13)

- *'The applicant is encouraged, where opportunities exist, to prepare proposals which can make a positive contribution to the historic environment, and to consider how their scheme takes account of the significance of heritage assets affected.'* (paragraph 5.9.14)

8.2.2. Draft NPS EN-3 confirms that solar developments may affect heritage assets (sites, monuments, buildings, and landscape) both above and below ground, and their impacts will require expert assessment in most cases. The draft NPS recognises, however, that *'archaeological finds may be protected by a solar PV farm as the site is removed from regular ploughing and shoes or low-level piling is stipulated'* (paragraph 2.53.2).

8.2.3. The following ABC Local Plan policies may also be of relevance:

- Policy ENV3a – Landscape Character and Design;
- Policy ENV5 – Protecting Important Rural Features;
- Policy ENV10 – Renewable and Low Carbon Energy;
- Policy ENV13 – Conservation and Enhancement of Heritage Assets;
- Policy ENV14 – Conservation Areas; and
- Policy ENV15 – Archaeology.

8.2.4. The Heritage Statement ('HS') (which will be a supporting appendix to the ES) and the ES chapter will assess 'harm' to heritage assets to comply with national policy. The National Planning Policy Framework[47] ('NPPF') (which does not contain specific policies for nationally significant infrastructure projects but is still relevant) recognises at paragraph 199 that consideration should be given to the impact of a proposed development on the significance of a designated heritage asset, irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance. Similarly at paragraph 203, it notes that the effect of an application on the significance of a non-designated heritage asset should be taken into account when determining the application.

[47] Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2 Accessed March 2022

8.3. Study Area

8.3.1. The extent of the search area to identify designated and non-designated heritage assets has been informed by professional judgement, there being no specific guidance specifying what distances should be used. Where deemed appropriate, the search radius has been extended to identify any additional designated heritage assets which may be sensitive to change within the site.

8.3.2. Information on designated heritage assets (excluding Conservation Areas) has been obtained within a search area of 1km from the site boundary from GIS databases sourced from Historic England (2021). In addition, an initial Zone of Theoretical Visibility (‘ZTV’) for the Proposed Development (shown on Figure 8: Visual Appraisal Plan and further details are provided in Section 9 (Landscape and Views) of this Scoping Report) has highlighted designated heritage assets (including Conservation Areas) located within 5km of the site boundary which hold visibility with the site, and which will be considered as part of the baseline collection and review process undertaken as part of the preparation of the HS. The maximum height of the modules from the ground is expected to be approximately 3m. Designated assets are shown on Figure 6: Designated Heritage Assets.

8.3.3. With regards to the non-designated archaeological resource, the Kent Historic Environment Record (‘HER’) contains records of all known archaeological sites and findspots[48] within the county. In respect of non-designated historic assets, a search was undertaken for all entries within 1km of the site boundary. Information on Conservation Areas was also provided. In addition to identifying heritage assets that may be directly affected by the Proposed Development, this search area is considered to provide sufficient data to represent the archaeological character of the area. Non-designated assets are shown on Figure 7: Non-Designated Heritage Assets.

8.4. Baseline Environment

8.4.1. The protected crash site of a Second World War aircraft is located within the site

[48] The place where an archaeological object has been found

boundary, to the north-east of Handen Farm (see Figure 6: Designated Heritage Assets). The crash site is protected under the Protection of Military Remains Act 1986 ('PMRA')[49]. Three further protected crash sites are noted within the 1km search area of the site and one additional site located just beyond the 1km search area, which are shown on Figure 6.

8.4.2. The nearest Scheduled Monument to the site boundary comprises a cemetery of seven barrows, dating from around the Early Bronze Age period, located c.880m south-east of the site boundary. Within the wider area and located within the initial ZTV visual envelope are the scheduled remains of a Romano-British building, located c.1.6km south-east of the site and Bilsington Priory, located c.1.5km south of the site.

8.4.3. Within the 1km search area from the site boundary, there are eight highly graded listed buildings, comprising two Grade I and six Grade II* listed buildings. In close vicinity to the western part of the site boundary (approximately 65m to the west) is the Grade II* listed Stonelees, a 15th century house. Within the wider area and located within the initial ZTV visual envelope, there are five Grade I and six Grade II* listed buildings.

8.4.4. Within the 1km search area from the site boundary, there are 69 Grade II listed buildings. Ten of these buildings are recorded within 100m of the site boundary.

8.4.5. Appendix 3 presents a gazetteer of all listed buildings within the 1km search area and the initial ZTV visual envelope.

8.4.6. There are no Registered Parks and Gardens within the 1km search area. Within the wider area, the most southern tip of the Grade II registered Hatch Park, located c.1.5km north of the site, falls within the initial ZTV visual envelope.

8.4.7. The Kent HER records two Conservation Areas within the 1km search area from the site boundary, comprising the Aldington – Clap Hill Conservation Area, located approximately 200m to the south of the site and the Aldington – Church Conservation Area, located approximately 460m to the south-east of the site

[49] Available at: https://www.legislation.gov.uk/ukpga/1986/35/contents Accessed March 2022

boundary. Within the wider area and located within the initial ZTV visual envelope, there is Smeeth Conservation Area, located approximately 1.1km north of the site and Bilsington Conservation Area, located approximately 2.6km south of the site.

8.4.8. The Kent HER records that the site partially falls within the Stour Palaeolithic Character Area of the Weald Basin, which has low Palaeolithic potential. A number of sites and findspots are recorded within the site boundary (refer to Figure 7: Non-Designated Heritage Assets). The findspots have been recovered via metal detecting. The earliest findspots date to the Romano-British period and comprise two copper alloy brooches and a copper alloy mount. Bank Road / Roman Road bisects the central and western part of the site.

8.4.9. Saxon findspots have been recovered within the site boundary, comprising a copper alloy brooch, a silver coin of Aethelred II and a copper alloy key (locking).

8.4.10. Medieval findspots recovered within the site boundary comprise two pottery vessels, numerous silver coins, copper alloy buckles, mount and strap fittings, and a copper alloy unidentified object.

8.4.11. The post-medieval period is represented within the site boundary by farms and a silver coin of Henry VIII.

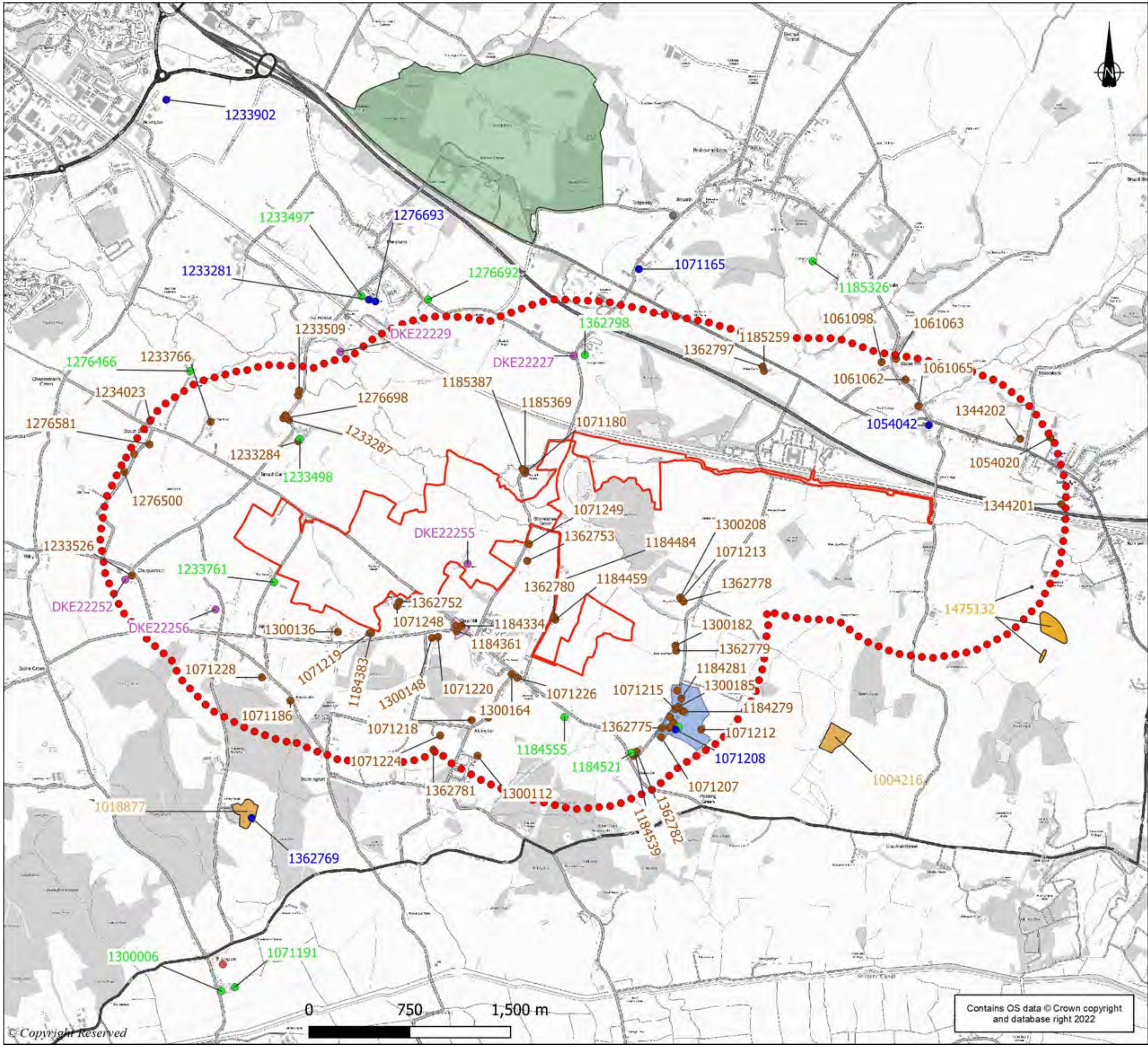
8.4.12. Finally, the cropmark of a square enclosure is recorded within the centre of the site to the north of Handen Farm but remains undated.

8.4.13. A geophysical survey has been undertaken across the majority of the site, with approximately 16.2ha unable to be surveyed at the time due to unsuitable ground conditions[50]. The survey will be completed and remaining areas surveyed to inform the ES chapter. Evidence of archaeological activity has been identified in specific areas. In the north-west, a possible enclosure has been detected with possible evidence of subdivisions within and adjacent linear anomalies to the east. In the west and south of the site, further linear and curvilinear negative anomalies have been identified. These anomalies appear fragmentary in places, but some do appear to form partial enclosures, and could represent field systems. Two possible

[50] Magnitude 2022, unpublished report

double ditched trackways have been identified in the south, along with further possible rectilinear enclosures. Agricultural features including former field boundaries, drains and modern ploughing trends have been identified across the site, as have linear and curvilinear anomalies and small, discrete anomalies. Due to the lack of any diagnostic morphology or signal, the latter anomalies have been classified as undetermined, and agricultural, natural, or modern origins are considered possible, though an archaeological interpretation cannot be entirely ruled out.

Figure 6: Designated Heritage Assets



DO NOT SCALE FROM THIS DRAWING

KEY

- Site Boundary
- Search Area
- Scheduled Monument
- Grade I Listed Building
- Grade II* Listed Building
- Grade II Listed Building
- Protected Military Remains
- Hatch Park RPG

Conservation Areas

- Aldington - Church Area
- Aldington - Clap Hill
- Bilsington
- Smeeth

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT

EPL 001 Limited

PROJECT

Stonestreet Green Solar

DRAWING TITLE

Figure 6:
Designated Heritage Assets

DRG No. GM12014-005		REV A
DRG SIZE A3	SCALE 1:27,900	DATE March 2022
DRAWN BY ACH	CHECKED BY LG	APPROVED BY AM

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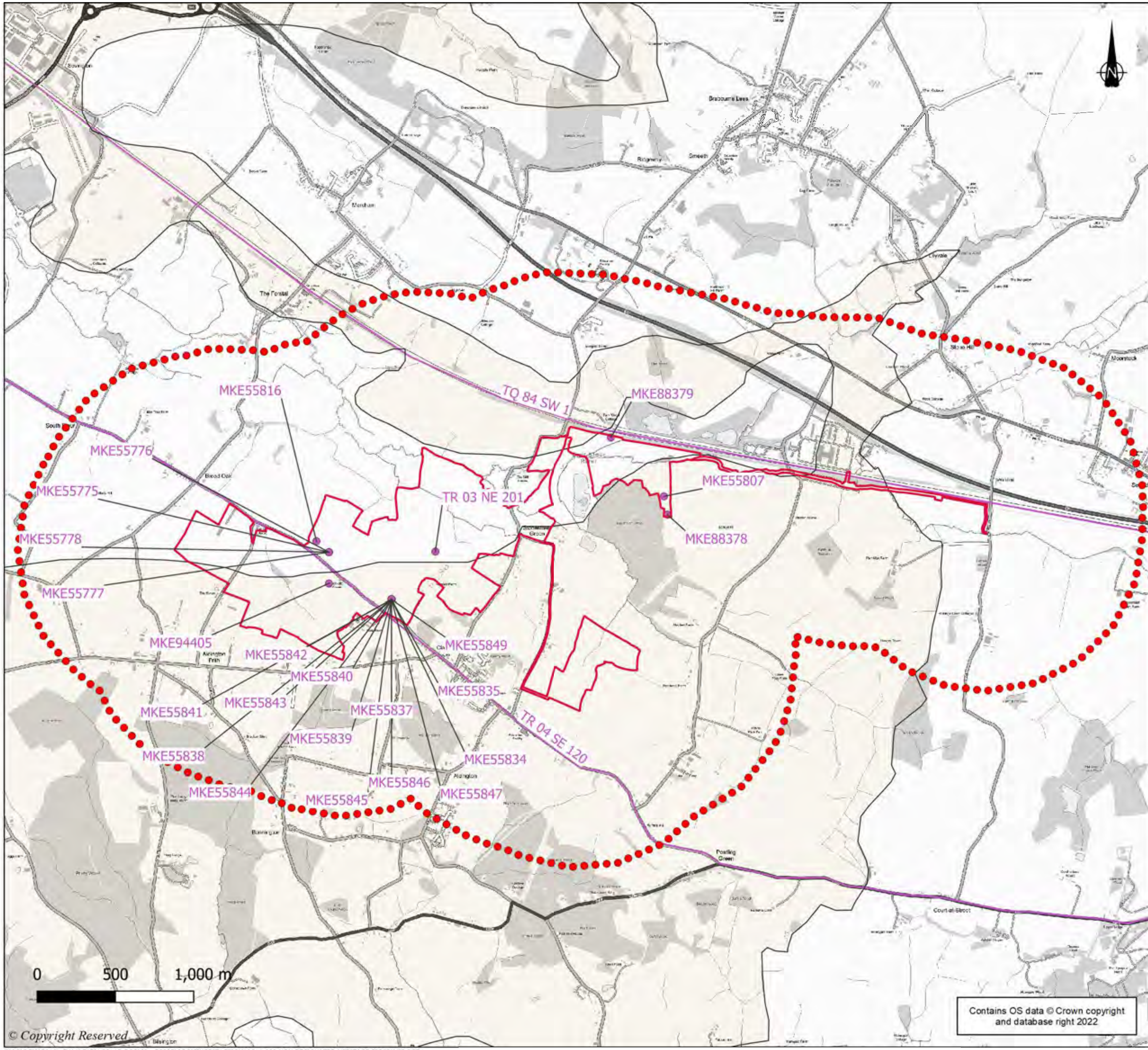
N:\GM\GM12014 - BANK FARM SOLAR DCO\03 - DESIGN\QGIS\HERITAGE\GM12014-005 DESIGNATED HERITAGE (SCOPING).QGZ

Figure 7: Non-Designated Heritage Assets



DO NOT SCALE FROM THIS DRAWING

KEY
- Site Boundary
- Search Area
- HER Asset
- Stour Palaeolithic Character Area

REVISION	DETAILS	DATE	DR'N	CHK'D	APP'D

CLIENT

EPL 001 Limited

PROJECT

Stonestreet Green Solar

DRAWING TITLE

Figure 7:
Non-Designated Heritage Assets

DRG No. GM12014-006		REV A	
DRG SIZE A3	SCALE 1:24,000	DATE March 2022	
DRAWN BY ACH	CHECKED BY LG	APPROVED BY AM	

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N:\GM\GM12014 - BANK FARM SOLAR DCO\03 - DESIGN\QGIS\HERITAGE\GM12014-006 NON-DESIGNATED HERITAGE (SCOPING).QGZ

8.5. Project Basis for Scoping Assessment

8.5.1. The Cultural Heritage scoping assessment is based on the following assumptions:

- Solar arrays to be constructed on galvanised steel piles driven up to 3m into the ground;
- Soil strips restricted to the location of the substations, storage buildings, compounds and roadways (unless no-dig methods are utilised);
- Solar arrays to be approximately 3m high;
- Sub and electrical stations and compounds construction on concrete slab foundations;
- Cable runs where cables are not above ground;
- Non-designated and the PMRA site (a designated heritage asset) could be directly affected by the development footprint;
- Designated heritage assets could be in-directly affected through a change in their setting; and
- Key elements of the historic landscape (including hedgerows) will be retained where possible. Any removal will be subject to reinstatement on decommissioning.

8.6. Embedded Mitigation

8.6.1. The design of the Proposed Development is guided by an iterative mitigation-by-design rationale based on a robust understanding of the cultural heritage baseline. Embedded mitigation may include the following:

- Buffers/ stand-offs to sensitive heritage assets;
- Reinforcement and enhanced management of existing vegetation structures and patterns; and
- New planting to provide visual screening to sensitive heritage assets.

8.7. Likely Significant Effects

Construction Phase

8.7.1. Ascribing levels of importance to the below ground archaeological resource, and the assessment of the likely significant effects of the Proposed Development on archaeology, will be undertaken following guidance set out in the Design Manual for Roads and Bridges ('DMRB'), Volume II, Section 3, Part 2[51] and in the DMRB, LA 104 Environmental Assessment and Monitoring[52].

8.7.2. Ground disturbance has the potential to remove/truncate remains of archaeological and historic interest. The baseline undertaken as part of this Scoping Report and the results of the geophysical survey have confirmed that there is evidence of archaeological activity across the site. This includes potential buried archaeological remains which are of unknown date at present.

8.7.3. There is also the protected crash site of a Second World War aircraft (designated heritage asset) located within the site boundary (the PMRA site).

8.7.4. The findspots recorded by the HER are not receptors, having been removed from the site but they are illustrative of the potential for other similar finds and possibly indicate further features which remain within the site.

8.7.5. The assessment of the likely significant effects of the Proposed Development on the buried archaeological resource will be initially informed by an Archaeological Desk Based Assessment ('DBA') and the geophysical survey of the site, which will assess the potential impact of the Proposed Development to known and potential buried archaeological remains within the site. The Archaeological DBA will include reference to field observations and primary and secondary resources and be undertaken with due regard to the guidelines on desk-based assessment prepared by the Chartered Institute for Archaeologists[53].

8.7.6. The Archaeological DBA and Geophysical Survey Report will be submitted as

[51] Available at: https://www.standardsforhighways.co.uk/prod/attachments/8c51c51b-579b-405b-b583-9b584e996c80?inline=true Accessed March 2022
[52] Available at: https://www.standardsforhighways.co.uk/dmrb/search/0f6e0b6a-d08e-4673-8691-cab564d4a60a Accessed March 2022
[53] Available at: https://www.archaeologists.net/sites/default/files/CIfAS&GDBA_2.pdf Accessed March 2022

supporting appendices to the ES chapter. The assessment of the likely significant effects will also be set out within the ES chapter.

8.7.7. The necessity for any further archaeological evaluation of the site, i.e. trial trench evaluation, to be informed through a Written Scheme of Investigation, will be ascertained through discussions held with the KCC Archaeological Advisor. It is proposed that, if required, this is secured as a pre-commencement DCO requirement to limit any impact to the land and ecology in the event that a DCO is not granted.

Operational Phase

8.7.8. With regards to impacts caused because of changes to a designated heritage asset's setting, the baseline and initial ZTV have highlighted a number of assets to be assessed as part of the HS.

8.7.9. The likely significant effects of the Proposed Development on the built heritage resource will be assessed within a HS which will assess the potential impact to the significance cultural heritage assets. This will be submitted as a supporting appendix to the ES chapter with an assessment of the likely significant effects set out within the ES chapter.

8.7.10. The HS will include reference to field observations and primary and secondary resources. With regards to the Grade II* listed Stonelees, which is in close proximity to the site boundary, consultation with Historic England will be undertaken as part of the preparation of the HS.

8.7.11. Any mitigation measures deemed necessary will be set out in the ES chapter and will take account of the available baseline information and pre-application discussions with stakeholders, including the KCC Archaeological Advisor and Historic England.

8.7.12. The assessment of the likely significant effects of the Proposed Development on built heritage will be undertaken following Historic England's best practice guidance presented in the Setting of Heritage Assets (2017)[54], specifically utilizing the 5-step approach to assessment.

8.7.13. The significance of effect will be determined using the significance matrix as described in Section 5 (EIA Methodology).

8.7.14. The Draft NPS EN-1 states at paragraph 5.9.22 that:

> *'Any harm or loss of significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justification. Substantial harm to or loss of significance of a grade II listed building park or garden should be exceptional. Substantial harm to or loss of significance of assets of the highest significance, including Scheduled Monuments; Protected Wreck Sites; Registered Battlefields; grade I and II* Listed Buildings; grade I and II* Registered Parks and Gardens; and World Heritage Sites, should be wholly exceptional'.*

8.7.15. Paragraph 5.9.23 states that:

> *'The Secretary of State should give considerable importance and weight to the desirability of preserving all designated heritage assets. Any harmful impact on the significance of a designated heritage asset should be given significant weight when weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification will be needed for any loss'.*

8.7.16. Draft NPS EN-3 (2021) states at paragraph 5.23.5 that:

> *'The applicant should consider what steps can be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. As the significance of a heritage asset derives not only from its physical presence, but also from its setting, careful consideration should be given to the impact of large-scale solar farms on such assets.'*

[54] Available at: https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/ Accessed March 2022

8.7.17. The level of impact expressed by assessment within the HS and ES chapter will be either no harm, less than substantial harm, substantial harm or total loss, and the application of these terms will be made with regard to professional judgement and experience.

8.8. Decommissioning Phase

8.8.1. In regards to impacts from the decommissioning phase, it is anticipated that these would be limited to built heritage assets within the vicinity of the site. Decommissioning is anticipated to comprise the removal of all PV modules, mounting structure, cabling, inverters and transformers and return of the land to current use. In this respect, effects are likely to be beneficial, removing any adverse impacts caused by the Proposed Development as result of introducing change within the setting of nearby designated heritage assets.

8.9. Impacts Scoped Out of the Assessment

8.9.1. It is proposed to scope out the following:

- Direct physical effects on assets during operation and decommissioning of the Proposed Development (as physical effects will only occur during construction which will be mitigated as required); and
- Direct physical effects on assets beyond the site boundary on the basis that there will be no construction, operational or decommissioning activities beyond the site that could have a direct physical effect on heritage assets.

8.10. Proposed Approach to PEIR and ES

8.10.1. The ES will consider potential effects on cultural heritage. The following next steps for the cultural heritage topic are proposed:

- Review and integrate aerial photographic transcription into baseline;
- Review and integrate geophysical results into baseline;
- Undertake site walkover and setting assessment for key sensitive receptors (site visit undertaken in March 2022);

- Engage with relevant disciplines such as landscape and noise to better understand the potential for impacts from mitigation upon the historic environment;
- Produce a draft PEIR chapter;
- Consult with relevant stakeholders as necessary throughout the process;
- Produce a draft Archaeological DBA;
- Produce a draft HS; and
- Produce a draft ES chapter.

8.10.2. The search area for the ES will be further refined considering the results of the baseline data collection and the site walkover and setting assessment.

8.10.3. Direct impacts will be presented and tabulated using the impact assessment methods and criteria outlined in the DMRB (see above paragraph 8.7.1). Indirect impacts would be presented and tabulated as outlined above in paragraph 8.7.13. This will be supported by professional judgement and the principles in:

- Code of Conduct, Chartered Institute for Archaeologists, (CIfA, 2020a);
- Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment, (Historic England, Consultation Draft, November 2017);
- Historic Environment Good Practice Advice in Planning Note 3 (second edition):
- The Setting of Heritage Assets (Historic England, 2017); and
- Standard and Guidance for Historic Environment Desk-Based Assessment, (CIfA, 2020).

8.10.4. The PEIR chapter will be used as a basis for the Cultural Heritage chapter of the ES which will identify:

- Potential effects including potential cumulative effects, as appropriate;
- Mitigation measures to avoid, minimise or reduce adverse impacts, where possible; and

- Residual effects based on the impact assessment and proposed mitigation.

Table 8.1 - Summary of Effects and Impacts

Receptor, Project Activity and Potential Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
PMRA crash site within the site boundary. Removal (if any remains are found) during construction phase.	If remains are present and to be removed as part of construction: high	High	Major	Scoped In
Non-Scheduled (Non-Designated) Archaeological Remains within the site boundary. Removal during construction phase.	If remains are present and to be removed as part of construction: up to high	Very Low to Medium	Minor to Major	Scoped In
Historic Landscape Features. Removal during construction phase.	If remains are present and to be removed as part of construction: up to high	Very Low to Medium	Minor to Major	Scoped In

Receptor, Project Activity and Potential Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Designated Heritage Assets including Scheduled Monuments, Listed Buildings and Conservation Areas. In-direct impacts to significance through changes to elements of their setting during operation phase.	Unknown at scoping stage	Medium to High	Unknown at scoping stage	Scoped In
Registered Parks and Gardens (Grade II Registered Hatch Park)	Very Low	Medium	Negligible	Scoped In
Direct physical effects on assets during operation and decommissioning of the Proposed Development (as physical effects will only occur during construction and mitigated as required)	Very Low	Very Low to High	Negligible to Minor	Scoped Out

Receptor, Project Activity and Potential Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Direct physical effects on assets beyond the site boundary on the basis that there will be no construction, operational or decommissioning activities beyond the site that could have a direct physical effect on heritage assets.	Very Low	Very Low to High	Negligible to Minor	Scoped Out

9. Landscape and Views

9.1. Introduction

9.1.1. An assessment of the likely significant effects of the Proposed Development on the environment with respect to landscape and views will be undertaken.

9.2. Planning Policy Context

9.2.1. Section 5.10 of Draft NPS EN-1 (2021) sets out the matters to be considered in the assessment of any likely significant landscape, visual and residential amenity impacts of the Proposed Development. It recognises that *'The landscape and visual effects of energy projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development'* (paragraph 5.10.1).

9.2.2. Paragraph 5.10.5 requires applicants to carry out a landscape and visual assessment and report it in the ES. The NPS (at paragraphs 5.10.5 to 5.10.7) requires that the landscape and visual assessment undertaken should:

- Include reference to any landscape character assessment and associated studies and take account of any relevant policies based on these assessments in local development documents;
- Include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character; and
- Include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity.

9.2.3. Draft NPS EN-3 (2021) confirms that the assessment of impact from solar projects should be undertaken in a similar way to the assessment of landscape impact of other onshore energy.

9.2.4. The NPS requires applicants to follow the criteria for good design from a landscape perspective to minimise the landscape/visual impact of solar PV arrays (paragraph 2.51.4). This may include for example: screening with native hedges, reinforcing existing hedgerows, retaining vegetation on boundaries and allowing individual trees to grow to maturity, minimising the use and height of security fencing and security lighting (using a passive infra-red ('PIR') technology).

9.2.5. The following ABC Local Plan policies may also be of relevance to the assessment:

- Policy ENV3a – Landscape Character and Design;
- Policy ENV4 – Light Pollution and Promoting Dark Skies
- Policy ENV5 – Protecting Important Rural Features; and
- Policy ENV10 – Renewable and Low Carbon Energy.

9.2.6. In summary, local planning policy requires that proposals for new development should identify and seek to improve biodiversity by providing linkages within a wider ecological network and though management, restoration and creation of habitats. Development will also be required to demonstrate regard for the following:

- Landform and drainage;
- Vegetation patterns;
- Wildlife habitats;
- The pattern of field boundaries settlements, roads and footpaths; and
- Historic and important landscape features.

9.3. Study Area

9.3.1. Figure 8: Visual Appraisal Plan indicates the study area proposed for the consideration of landscape and visual effects. The study area has been informed by desk study and field work, as well as the anticipated representative viewpoint selection. As the design of the Proposed Development evolves, the study area will be re-visited to ensure it is established at an appropriate scale to support the assessment of likely significant effects within the ES chapter.

Figure 8: Visual Appraisal Plan

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Revision -

Date - Drn - Ckd -

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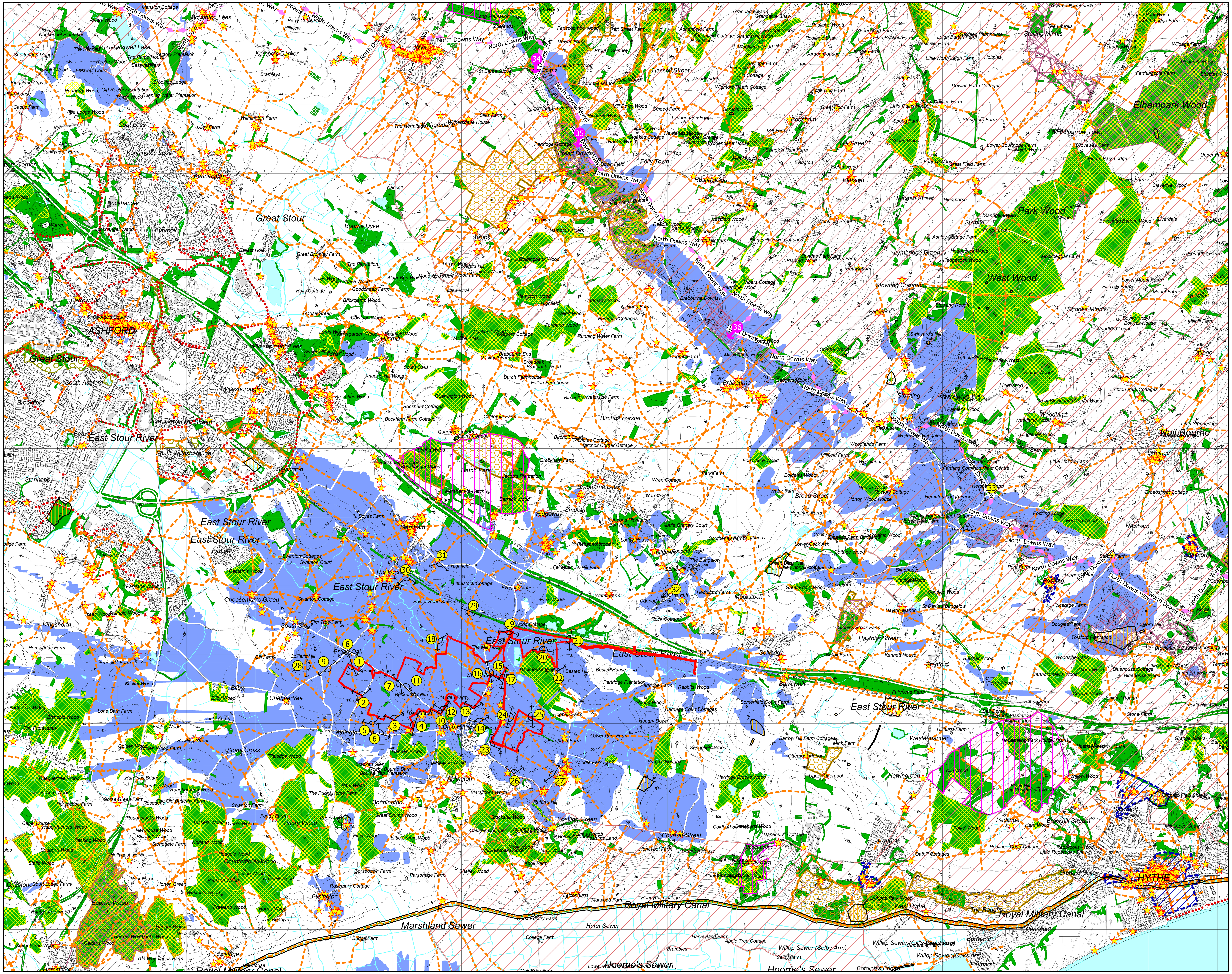

Legend

- Site Boundary
- Ancient Woodland #
- Existing Woodlands, Copses and Tree Belts ^
- Existing Scrub ^
- Existing Water Courses and Features ^
- Contours/Spot Heights (Metres AOD) ^
- Public Rights of Way *
- National Trails #
- Countryside Rights of Way Access Areas #
- Cycle Route ++
- Listed Buildings ~
- Conservation Area ~
- Registered Parks and Gardens ~
- Scheduled Monument ~
- Area of Outstanding Natural Beauty #
- Sites of Special Scientific Interest #
- Local Nature Reserve #
- Location of Photographic Viewpoints (Site Context Photographs: 1-33)
- Approximate Location of Suggested Photographic Viewpoints by Ashford Borough Council (Site Context Photographs: 34-36)

Zone of Theoretical Visibility (ZTV)

- Visual Envelope

Sources:

^ OS Mapping
# Natural England GIS Data Set
~ Historic England National Monument Record GIS Data Set
* Kent County Council GIS Data Set
+ Sustrans National Cycle Network GIS Data

Data collated for constraints and analysis mapping is based on publicly available sources at the time of preparation inserted using the British National Grid and may itself not be accurate. Barton Willmore shall not be liable for the accuracy of data derived from external sources.

FIGURE 8

Project
Stonestreet Green Solar

Drawing Title
Visual Appraisal Plan

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9.4. Baseline Environment

9.4.1. The site location and scoping boundary are described in Sections 1.4 and 1.5 of this Scoping Report. The site comprises a series of medium to large sized, irregular shaped fields in mixed arable/pastoral use, typically delineated by hedgerows, with occasional canopy trees and tree belts.

9.4.2. The landscape in which the site is located is predominantly rural, with several dispersed villages, residential dwellings and farmsteads. However, the M20 motorway and HS1 railway are major transport routes that cut through the landscape in close proximity to the north of the site. There is also extensive large-scale industrial/commercial built form alongside hard-standing on the south-eastern edge of Ashford and a substantial substation to the north of the site (beyond HS1), with an existing solar project located in close proximity to the south of the substation and to the east of the site.

9.4.3. A network of rural lanes links settlements around the site and subdivides the agricultural landscape, while the site and its locale are traversed by a dense network of Public Rights of Way ('PRoW').

9.4.4. The site sits within the valley of the East Stour River, a bowl-like formation comprising a broad, level floodplain surrounded by low, gently-rising hills to the north, south and east. Further south, the landscape falls away abruptly to the Romney Marshes, whilst to the north-east, the land rises to the Kent Downs.

9.4.5. With respect to vegetation, the agricultural landscape in which the site is located is defined by a network of hedgerow field boundaries. These are typically robust, but are sometimes denuded or absent altogether, particularly in the lower lying landscape of the East Stour valley, which together with the general absence of woodland creates a more open landscape. The hills that fringe the vale are more strongly treed, with a number of substantial blocks of woodland to the south and east of the site, accentuating the underlying topographical containment.

9.4.6. The site is not located within a designated landscape. However, the Kent Downs

Area of Outstanding Natural Beauty arcs around the valley of the East Stour River, such that its boundary is located as near as approximately 340m to the south and 2.7km north-east of the site. Several listed buildings are located within close proximity to the site.

9.4.7. Development will also be expected to protect and, if possible, enhance woodland, river corridors, rural lanes, PRoW and local historic or landscape features that help distinguish local character.

9.4.8. The Ashford Local Development Framework Landscape Character Study[55] identifies the site as lying within three Landscape Character Areas ('LCAs') identified within the study, comprising:

- Old Romney Shoreline Wooded Farmlands LCA;
- Aldington Ridge LCA; and
- Upper Stour Valley LCA.

9.4.9. In broad terms, these LCAs are described respectively as follows:

- *‘undulating mixed farmland with generally strong hedgerows interspersed with old coppiced woodland, which give strong sense of enclosure to the landscape and a valuable network of wildlife corridors and semi-natural habitats’*;
- *‘close grained landscape of gentle folds and sunken lanes contained within high hedges and trees” where the “rolling topography and high hedges restrict visibility and views are generally short and intermittent’*; and
- *‘an extensive open valley floor landscape of predominantly arable farming where hedgerows have been removed during the conversion to unimproved pasture and riparian vegetation lost as cultivation extends close to the river banks’*.

9.4.10. With respect to views, the site is visible at close range from roads and PRoWs, both within the site itself and in its immediate vicinity, although there is

[55] Available at: https://www.ashford.gov.uk/media/pofev2ts/lcs03-summary-report.pdf Accessed March 2022

considerable containment and screening provided by hedgerow and woodland, such that many views are glimpsed or filtered. In all but northerly directions, visibility of the site diminishes rapidly due to a combination of landform and vegetation. The open vale landscape of the East Stour allows some views across the valley from the local landscape to the north of the site. However, the bowl landform creates a generally localised visual envelope, with the exception of long distance views of the site from the Kent Downs ridgeline to the north-east. In views from the Kent Downs, the site is partially visible in distant views, with lower-lying areas contained by landform.

9.5. Project Basis for Scoping Assessment

9.5.1. This scoping assessment is based on the description of the Proposed Development set out in Section 4.

9.6. Embedded Mitigation

9.6.1. The design of the Proposed Development is guided by an iterative mitigation-by-design rationale based on a robust understanding of the landscape and visual baseline. Embedded mitigation is likely to include the following:

- Buffers to sensitive visual receptors;
- Reinforcement and enhanced management of existing vegetation structures and patterns;
- New planting to provide visual screening, break up the extent of development and link together existing habitats as part of a site-wide landscape and habitat improvement strategy; and
- Native grass and wildflower seeding, with appropriate maintenance regimes to establish improved ground flora.

9.7. Likely Significant Effects

9.7.1. The Proposed Development may result in likely significant effects on the landscape features of the site, as well as local landscape character areas and visual receptors.

9.7.2. As part of the assessment of likely significant effects, the ES chapter will assess the susceptibility to change of the landscape and visual receptors (the receiving environment), the value of landscape and views, and the resultant sensitivity of receptors.

9.7.3. The chapter will also assess the likely magnitude and significance of landscape and visual effects arising from the construction of the Proposed Development, as well as from the operational phase of the Proposed Development (at ‘Year 1’ and at ‘Year 15’). The likely magnitude and significance of landscape and visual effects arising from the decommissioning of the Proposed Development will also be assessed.

9.7.4. Mitigation measures to avoid, minimise or reduce adverse impacts, where possible, will also be identified in the assessment. The outline LEMP will set out mitigation measures for the Proposed Development and will be prepared with ecological input from Lloyd Bore.

9.8. Impacts Scoped Out of the Assessment

9.8.1. The site is partially located within the northern fringe of an area identified in the ABC Local Plan as a ‘Proposed Dark Sky Zone’, which encompasses an extensive area of the rural landscape in the southern part of the Borough. The area around Woodchurch (approximately 10km south-west of the site) is identified as being particularly notable for a lack of light pollution. Policy ENV4 of the ABC Local Plan states that proposals within the Proposed Dark Sky Zone will only be permitted ‘*where they can demonstrate that there will be no significant adverse effects on the visibility of the night sky or its intrinsically dark landscapes*’.

9.8.2. However, due to the proximity of the site to major transport routes (the M20 motorway and HS1 railway line) and substantial areas of settlement (Ashford), the site is within a local area strongly influenced by existing artificial light sources. Therefore, it is not considered to be within an intrinsically dark landscape. Notwithstanding this, an assessment of the likely significant effects from the construction and decommissioning phases of the Proposed Development on the existing character of the night-sky will be scoped in to the assessment. However, the nature of the Proposed Development, which will not require permanent lighting during operation (only motion activated security lighting around ancillary structures installed for emergency purposes), is such that significant effects on the night time landscape and on the perception of night skies during its operational phase are not anticipated. It is therefore proposed that an assessment of the Proposed Development's operational phase on the existing character of the night-sky is scoped out of the ES chapter.

9.8.3. As set out in the Landscape Institute's best practice Technical Guidance Note ('TGN') 2/19, Residential Visual Amenity Assessment[56] ('RVAA') is a separate and distinct process that follows on from an LVIA and focuses on private views as part of the consideration of Residential Amenity in the planning balance, and therefore will not be included within the scope of the ES chapter. Notwithstanding this, paragraph 2.1 of the TGN 2/19 states that the purpose of an RVAA is to ascertain whether the threshold for Residential Visual Amenity has been met, or in other words *"is the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects 'living conditions' or Residential Amenity'?".* Due to the characteristics of the Proposed Development, including its limited height, retention of field boundary vegetation and visually permeable appearance, it is considered highly unlikely that the threshold for Residential Visual Amenity would be met as a result of the Proposed Development.

9.9. Proposed Approach to PEIR and ES

9.9.1. The assessment will be undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment[57] ('GLVIA') and will provide a review of the existing landscape planning policy context, published sources of landscape character, physical and visual appraisal of the site and study area and an assessment of the likely significant landscape and visual effects of the Proposed Development, during the construction, operational and decommissioning phases.

9.9.2. Baseline information for the study area will be collated, which will include

[56] Available at: https://www.landscapeinstitute.org/technical-resource/rvaa/ Accessed March 2022
[57] Available at: https://www.landscapeinstitute.org/technical/glvia3-panel/ Accessed March 2022

settlement patterns and access, topography, vegetation, landscape designations, relevant planning policy and published landscape character information, as well as appraisals of the character of the site and its visual relationship with the study area. Appraisals will be based on a baseline timeframe of winter 2021/ 2022, which would provide an assessment of the 'worst case' position.

9.9.3. Assessments will be carried out to identify the likely significant landscape and visual effects arising from the Proposed Development during construction, on completion ('Year 1') and 15 years thereafter ('Year 15') with the benefit of established planting mitigation, as shown in a Landscape Strategy Plan within the outline LEMP to be submitted as part of the DCO application and secured by requirement. Mitigation planting will be assumed to grow approximately 1m in height every 3 years.

9.9.4. In accordance with the GLVIA, this assessment will address landscape and visual effects as separate issues. Landscape effects relate to both the effect on the physical features of the site, and on the landscape character of the site and surrounding area. Visual effects relate to the experience of views of the Proposed Development by visual receptors from publicly accessible vantage points in the study area. Where appropriate, the effects of the Proposed Development on residential receptors will also be assessed.

9.9.5. Landscape and visual field surveys were conducted in December 2021. The field surveys were guided by a preliminary desk study that included the preparation of an initial ZTV.

9.9.6. The initial ZTV is based on a computer-generated 3D model using topography data (Ordnance Survey Terrain 50), with 138 target points at approximately 200m intervals on a regular grid across the site, and with areas of built form and woodland blocks modelled to a height of 8.5m and 12m respectively. The target points have been set at a height of 3m above existing ground levels, accounting for the maximum height of the majority of elements within the Proposed Development. This represents the basis of a typical assessment for the impacts of a solar project.

9.9.7. Following the field surveys, a series of representative viewpoints have been selected for consideration in the visual assessment, located in publicly accessible locations such as roads, PRoW and designated open space/access land. The quantity and location of these viewpoints have been discussed at a meeting with officers of ABC on 1 February 2022 (at which additional viewpoints were included in the assessment at ABC's request) and are indicated on Figure 8: Visual Appraisal Plan in the context of the initial ZTV.

9.9.8. Representative views are not intended to be exhaustive and will not cover every possible view of the site. Rather, they will be selected to proportionately represent the range of views available, taking into account the activity and sensitivity of visual receptors. In accordance with the GLVIA, the assessment of visual effects will be based on the identified visual receptors and not specific views, unless specifically appropriate.

9.9.9. In summary, the assessment will:

- Define the study area for the site, based on initial ZTV mapping and a visual appraisal in the field, identifying representative views to be used for the visual impact assessment;
- Provide an appraisal of the landscape and visual baseline;
- Assess the susceptibility to change of the landscape and visual receptors (the receiving environment), the value of landscape and views, and the resultant sensitivity of receptors;
- Assess the likely magnitude and significance of landscape and visual effects arising from the construction of the Proposed Development;
- Assess the likely magnitude and significance of landscape and visual effects arising from the operational phase of the Proposed Development (at 'Year 1' and at 'Year 15');
- Assess the likely magnitude and significance of landscape and visual effects arising from the decommissioning of the Proposed Development;
- Assess the likely significant cumulative effects of the Proposed Development with identified committed developments in the area; and

- Identify mitigation measures to avoid, minimise or reduce adverse impacts, where possible.

Table 9.1 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Landscape Features (e.g. Hedgerows, Open Fields) (construction, operational and decommissioning phases)	None - Large	Very Low – Very High	Nil - Major	Scoped In
Landscape Character (e.g. LCAs, Character of the Site) (construction, operational and decommissioning phases)	None - Large	Very Low – Very High	Nil - Major	Scoped In
Visual Receptors (e.g. Users of PRoW, Residents, Road Users) including with reference to glint and glare	None - Large	Very Low - Very High	Nil - Major	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
(construction, operational and decommissioning phases)				
Night-time Landscape and Perception of the Night-Sky (construction and decommissioning phases only, operational phase scoped out)	None - Large	Very Low - Very High	Nil - Major	Scoped In

10. Biodiversity

10.1. Introduction

10.1.1. An assessment of the likely significant effects of the Proposed Development on the environment with respect to biodiversity will be undertaken.

10.1.2. A qualitative and quantitative ecological impact assessment will be undertaken, following the principles set out in the Chartered Institute of Ecology and Environmental Management ('CIEEM') publication *'Guidelines for Ecological Impact Assessment in the United Kingdom'*[58], and will include an assessment of cumulative effects, details of appropriate mitigation measures and details of any residual effects. The assessment will also be informed by CIEEM's *Ecological Impact Assessment Checklist*[59] (2019) developed in association with the Association of Local Government Ecologists. The two best practice guidance documents comprise the 'CIEEM Guidelines'.

10.2. Planning Policy Context

10.2.1. Section 5.4 of Draft NPS EN-1 (2021) sets out the matters to be considered in the assessment of any likely significant biodiversity and nature conservation impacts of the Proposed Development. The draft NPS requires that the assessment of biodiversity impacts should be reported in the ES and:

- *'clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity'* (paragraph 5.4.3) and *'show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests'* (paragraph 5.4.4); and
- *'the design process should embed opportunities for nature inclusive design'*

[58] Available at: https://cieem.net/resource/guidelines-for-ecological-impact-assessment-ecia/ Accessed March 2022
[59] Available at: https://cieem.net/resource/ecological-impact-assessment-ecia-checklist/ Accessed March 2022

and *'The applicant is encouraged to consider how their proposal can contribute towards Biodiversity Net Gain in line with the ambition set out in the 25 Year Environment Plan. Energy infrastructure projects have the potential to deliver significant benefits and enhancements beyond Biodiversity Net Gain, which result in wider environmental gains. The scope of potential gains will be dependent on the type, scale, and location of each project.'* (paragraph 5.4.4)

10.2.2. Draft NPS EN-3, at paragraph 2.50.2, confirms that the assessment of impact from solar farms on biodiversity may need to include: '*habitats, ground nesting birds, wintering birds, bats, dormice, reptiles, great crested newts, water voles and badgers'.* Draft NPS EN-3 goes on to state (paragraphs 2.50.2 to 2.50.10) that applicants should:

- Inform the assessment through the preparation of a 'desk study' of existing ecological records, an evaluation of the likely impacts of the solar project upon ecological features, together with any mitigation to avoid or minimise these impacts, and identify any further surveys required;
- Consider earthworks associated with construction compounds, access roads and cable trenching, and seek to minimise soil damage and provide optimal conditions for site restoration;
- Consider how security and lighting installations may impact on the local ecology;
- Consider how site boundaries are managed to enable mammal, reptile and other fauna access into the site if required;
- Consider the impacts of mobile arrays or trackers (if proposed) to avoid animals becoming trapped in moving parts;
- Configure sites to avoid the need to impact on existing drainage systems and watercourses *'Given the temporary nature of solar PV farms'* (paragraph 2.50.7) and avoid culverting existing watercourses/drainage ditches unless it is unavoidable, and it can be demonstrated that it is temporary and no reasonable alternatives exist;
- Consider enhancement, management, and monitoring of biodiversity.

Paragraph 2.50.8 states that: '*Solar farms have the potential to increase the biodiversity value of a site, especially if the land was previously intensively managed. In some instances, the increase in biodiversity caused by the repurposing of previously developed or intensely managed land for solar generation may equate to a net positive impact'*; and

- Aim to achieve environmental and biodiversity net gain in line with the ambition set out in the 25 Year Environment Plan by, for example, maintaining or extending existing habitats and potentially creating new important habitats.

10.2.3. The following ABC Local Plan policies may be of relevance to the assessment:

- Policy ENV1 – Biodiversity;
- Policy ENV3a – Landscape Character and Design; and
- Policy ENV5 – Protecting Important Rural Features.

10.3. Study Area

10.3.1. The CIEEM Guidelines do not provide a specific search radius from a site to be used as a study area. Therefore, based on professional judgement, a 2km search radius from the site boundary has been determined for statutory designated sites of local and national importance. The desk study area has been extended to 10km from the site boundary for internationally designated ('European') sites to take account of potential distant indirect effects. 10km from a site boundary is the typical maximum search radius for statutory designated sites of international importance.

10.3.2. The 10km search radius for statutory designated sites of international importance is based on the 15km search radius used in the Habitat Regulations Assessment[60] of the ABC Local Plan (which primarily focuses on residential and commercial development types at a Plan level), rationalised down to 10km for the project level, based on the lower risk development type (solar) that is being considered and on professional judgement. 10km is typically the maximum zone of influence search

[60] Available at: https://www.ashford.gov.uk/planning-and-development/planning-policy/adopted-development-plan-documents/adopted-local-plan-to-2030/local-plan-2030-evidence-base/local-plan-submission-documents/ Accessed March 2022

radius for any individual project in relation to any international sites, so is considered to be a conservative and appropriate radius, given the low risk project type. The project type is considered low risk because it is not identified by Natural England's Site of Special Scientific Interest ('SSSI') Impact Risk Zone tool (which also considers risks to international sites) as a development type requiring further assessment.

10.3.3. The study area for protected, priority and notable species and habitats comprises the site and a 1km radius around the site for most important ecological features ('receptors'). Field surveys undertaken and planned to inform the baseline are limited to land within the site boundary, but the wider desk study area for these features extends to 1km from the site boundary for most features, and 5km for bats, otter and beaver. 5km is a standard bat search radius for a site in Kent unless there is exceptional potential for significant impacts upon wider bat populations arising from a project. It is therefore considered appropriate for the assessment. A greater search radius (e.g. up to 20km) from a site for bats is only relevant where there are Special Areas of Conservation ('SAC') designated for populations of lesser and greater horseshoe bats in particular (related to the protection of habitat corridors as land that is 'functionally linked' to the SAC) or other significant local bat designations that require an extended search radius and consideration of a wider Zone of Influence. However, these bat species are currently very rarely recorded in Kent and there are no SACs designated for them within the county. In addition, the nature of the Proposed Development and predominant baseline habitat currently present within the site (dominated by arable cropland) means that significant adverse impacts upon bats at the site level are unlikely and therefore a greater (e.g. 20km) search radius for bats is not considered to be appropriate.

10.4. Baseline Environment

10.4.1. The broad category of ecological features will be scoped into the ecological baseline for the site, comprising designated sites, habitats and faunal species.

Statutory Designated Sites

10.4.2. A 2km search radius from the site boundary has been determined for statutory designated sites of local and national importance. The desk study area has been extended to 10km from the site boundary for internationally designated ('European') sites to take account of potential distant indirect effects.

10.4.3. One statutory designated site of local importance, Poulton Wood Local Nature Reserve ('LNR'), is located within 2km of the site boundary, approximately 343m to the south-east of the site, at its closest point.

10.4.4. One statutory designated site of national importance, Hatch Park SSSI, is located within 2km of the site, approximately 1.8km to the north of the site, at its closest point. One further SSSI designated for its ecological interest, Gibbin's Brook SSSI, is located 1.93km to the north-east of the site boundary (as measured from the eastern most point of the site boundary). In addition, Otterpool Quarry SSSI, designated for its geological interest is located 1.85km from the site boundary. However, as it is designated for its geological interest only, it is therefore scoped out of further consideration within this assessment. For completeness, this SSSI is shown on Figure 9: Locations of Statutory Designated Sites.

10.4.5. Three statutory designated sites of international importance, consisting of Wye and Crundale SAC, Dungeness Romney Marsh and Rye Bay Ramsar and Special Protection Area ('SPA') (incorporating Dungeness SAC) and Folkestone to Etchinghill Escarpment SAC, are present within 10km of the site:

- Wye and Crundale SAC is located approximately 5.5km to the north of the site, at its closest point;
- Dungeness Romney Marsh and Rye Bay Ramsar and SPA is located approximately 6.5km to the southwest of the site, at its closest point. The Dungeness SAC is located approximately 11.35km south of the site, at its closest point. Although it is located beyond the desk study area (10km from the site boundary), it is considered as it forms part of a designated site complex that extends to within 10km of the site; and
- Folkestone to Etchinghill Escarpment SAC is located approximately 7.95km

east of the site, at its closest point.

10.4.6. Figure 9: Locations of Statutory Designated Sites shows the locations of the statutory designated sites listed above, in relation to the site boundary.

10.4.7. Whilst the Stodmarsh SPA, SAC, Ramsar and SSSI complex is located beyond the 10km search radius from the site, it is sensitive to nutrient driven ecological effects arising from new development and is connected to the site via the Stour River catchments. Developments that are located within the Stour River catchment, and that will result in a net increase in nutrients entering the Stodmarsh designated site complex, are required by Natural England and ABC, in line with their duties under the Conservation of Habitats and Species Regulations 2017[61] (as amended), to achieve nutrient neutrality. For this reason, the Stodmarsh designated site complex is briefly addressed in the 'Likely Significant Effects' section below.

Non-Statutory Designated Sites

10.4.8. A 1km search radius from the site was used for non-statutory designated sites. There are four non-statutory designated sites located within 1km of the site. The closest is Backhouse Wood Local Wildlife Site ('LWS'), which is located adjacent to the south-east of the site.

10.4.9. The LWSs located within 1km of the site (shown on Figure 10: Locations of Local Wildlife Sites), which will therefore be considered within assessment, comprise:

- Backhouse Wood LWS, is located within, and adjacent to, the site;
- Aldington Sand Pit LWS, is located within, and adjacent to, the site;
- Aldington Woods LWS, located approximately 290m east of the site at its closest point; and
- Bilsington Woods and Pasture LWS, located approximately 740m south-west of the site at its closest point.

[61] The Stationary Office (2017), *The Conservation of Habitats and Species Regulations 2017* (as amended)

Habitats

Irreplaceable Habitats

10.4.10. A search radius of 1km from the site was used for irreplaceable habitats (as defined in the NPPF), such as ancient woodland. Backhouse Wood LWS is an Ancient Replanted Woodland[62].

10.4.11. A further seven ancient woodland sites are located within 1km of the site, as shown on Figure 11: Locations of Ancient Woodland Sites.

Other Notable Habitats

10.4.12. The site supports hedgerows and ponds that qualify as Habitats of Principal Importance (i.e. ‘priority habitats’ under the Natural Environment and Rural Communities ('NERC') Act 2006).

10.4.13. The East Stour River, which qualifies as a Habitat of Principal Importance, is located within, and adjacent to, the site.

10.4.14. The remainder of the site supports common and widespread habitat types that are not considered important ecological features.

Fauna

10.4.15. Surveys for the following important (legally protected, priority or otherwise notable) species and species groups have been undertaken, in 2020/2021, and/or are ongoing in 2022:

- Notable fungi;
- Notable plants;
- Invertebrates;
- Amphibians (great crested newt *Triturus cristatus* and common toad *Bufo bufo*);

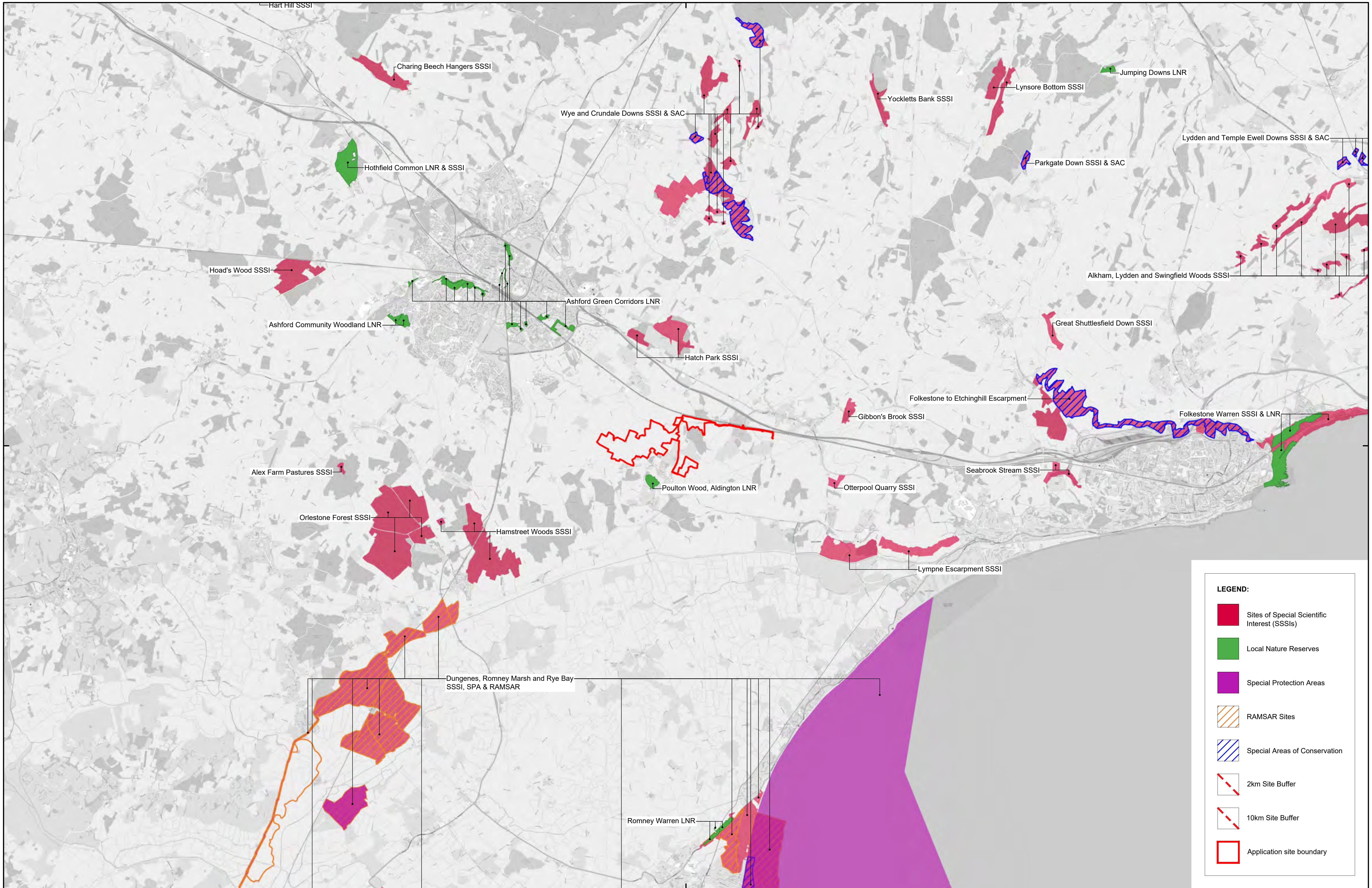
[62] Ancient Replanted Woodland is also known as Plantation on Ancient Woodland Site. This category of ancient woodland comprises ancient woodland sites that have been at least partially functionally replaced by plantation woodland (often conifers), but which have the potential to be restored to more ecologically important and functional ancient woodlands

- Reptiles;
- Breeding and wintering birds;
- Water vole (Arvicola amphibius);
- Beaver (Castor fiber);
- Hazel dormouse (Muscardinus avellanarius);
- Badger (*Meles meles*);
- Otter (Lutra lutra);
- Bats;
- Hedgehog (Erinaceus europaeus);
- Brown hare (*Lepus europaeus*); and
- Harvest mouse (*Micromys minutus*).

10.4.16. Presence of the following important species/species groups have been recorded to date:

- Great crested newt;
- Reptiles (slow worm Anguis fragilis, common lizard *Zootoca vivipara* and grass snake *Natrix Helvetica*);
- Breeding and wintering birds (red and amber listed bird species typical of arable farmland recorded breeding and wintering on-site);
- Hazel dormouse;
- Badger;
- Bats (at least five species recorded regularly using the site during activity surveys);
- Brown hare; and
- Harvest mouse.

Figure 9: Locations of Statutory Designated Sites



rev.	rev. date	auth.	rev. note
P01	03.02.22	SD	Initial Issue
P02	23.02.22	SD	Revised following update to red line boundary.
P03	23.02.22	SD	Fixed broken legend.
P04	25.02.22	SD	Minor amendments.
P05	23.03.22		Amendments to title block.
P06	30.03.22	SD	Amended following client feedback.
P07	30.03.22	SD	Fixed legend and red line boundary inconsistency.
P08	05.04.22	SD	Revised following Client feedback.

rev.	rev. date	auth.	rev. note

client. **EPL 001 Limited**

project.
Stonestreet Green Solar
Aldington
Kent

drawing no. **5535-LLB-XX-XX-DR-Ec-0015** rev. **P08**
drawing title. suit. **S4**
Figure 9: Locations of Statutory Designated Sites

rev date. **Apr 22**
scale. **1:100000**
sheet. **A3**
drawn. **NA**
checked. **SD**

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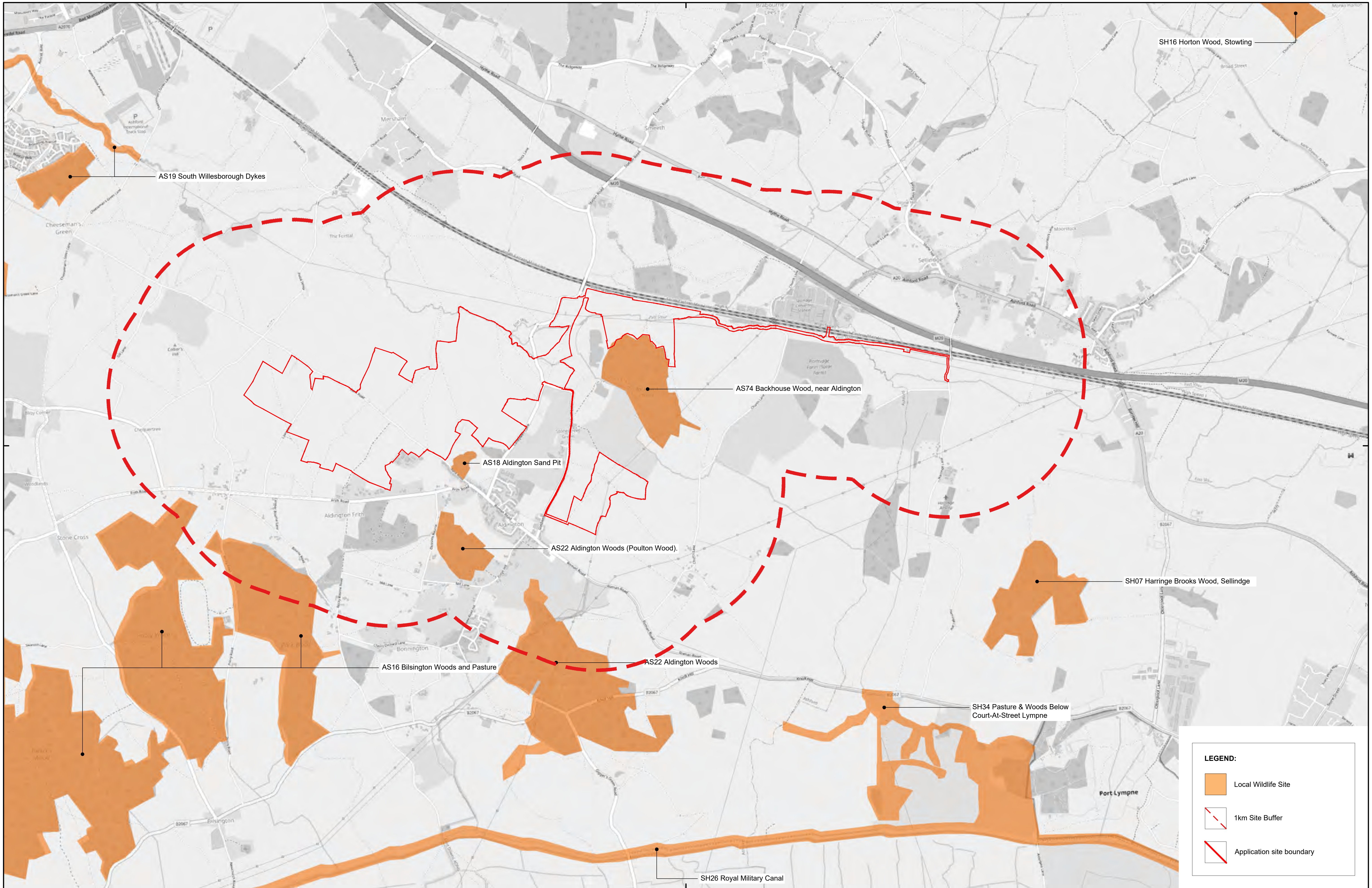
Figure 10: Locations of Local Wildlife Sites



rev.	rev. date	auth.	rev. note
P01	25.02.22	SD	Minor amendments.
P02	23.03.22		Amendments to title block.
P03	30.03.22	SD	Amended following client feedback.
P04	30.03.22	SD	Fixed legend and red line boundary inconsistency.
P05	05.04.22	SD	Labelling revised following further client team review.

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project.
Stonestreet Green Solar
Aldington
Kent

drawing no. **5535-LLB-XX-XX-DR-Ec-0019** rev. **P05**
drawing title. suit. **S4**
Figure 10: Locations of Local Wildlife Sites

rev date. **Apr 22**
scale. **1:25000**
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drawn. **NA**
checked. **SD**

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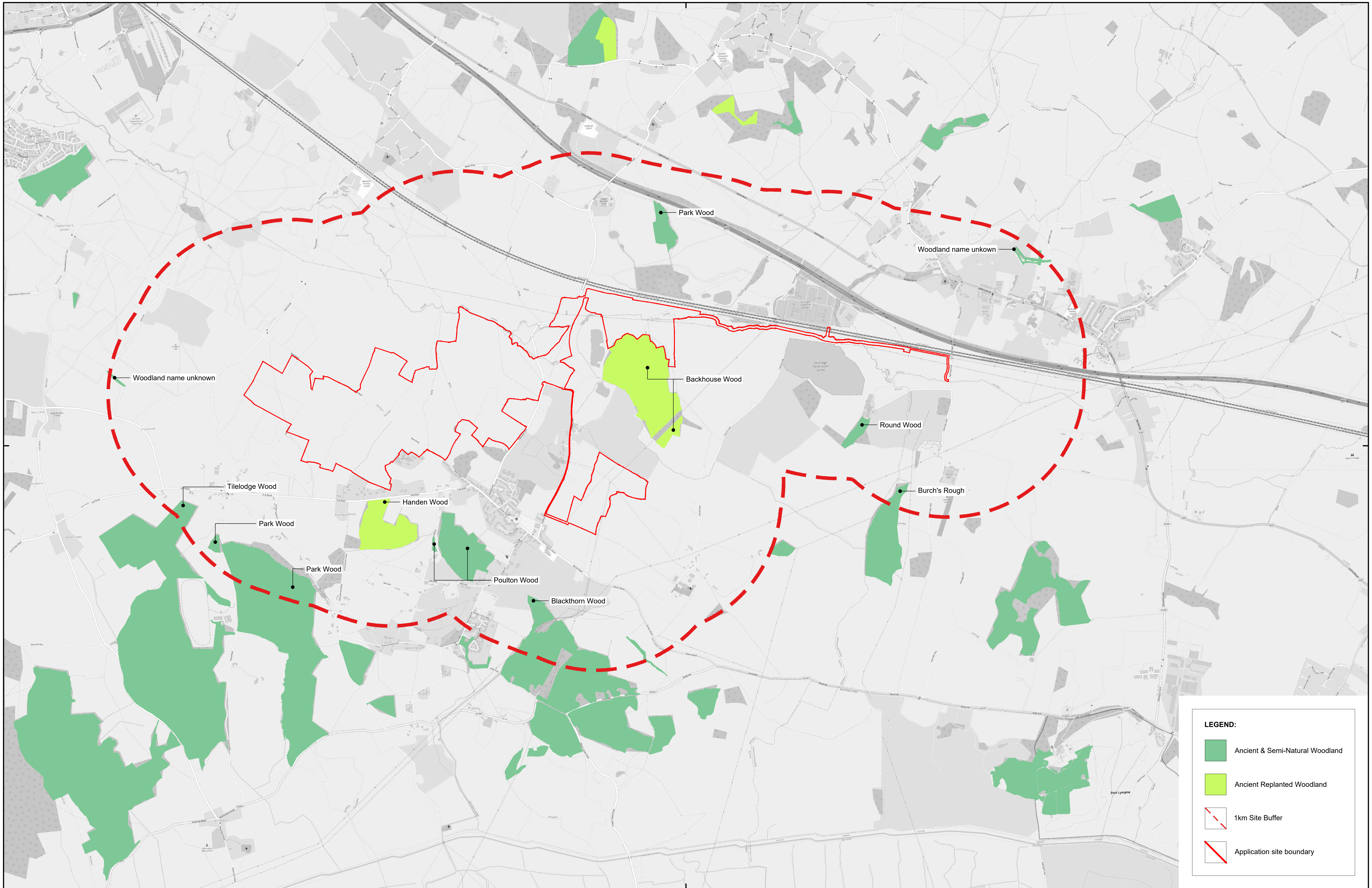
Figure 11: Locations of Ancient Woodland Sites



rev.	rev. date	auth.	rev. note
P01	23.02.22	SD	Initial Issue
P02	25.02.22	SD	Minor amendments.
P03	23.03.22		Amendments to title block.
P04	30.03.22	SD	Amended following client feedback.
P05	30.03.22	SD	Fixed legend and red line boundary inconsistency.
P06	05.04.22	SD	Labelling revised following further client team review.

rev.	rev. date	auth.	rev. note

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project.

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Aldington

Kent

drawing no. ***5535-LLB-XX-XX-DR-Ec-0018*** rev. ***P06***

drawing title. suit. ***S4***

Figure 11: Locations of Ancient Woodland Sites

rev date. ***Apr 22***

scale. ***1:25000***

sheet. ***A3***

drawn. ***NA***

checked. ***SD***

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10.5. Project Basis for Scoping Assessment

10.5.1. For the purposes of scoping, the following design assumptions have been made:

- All existing hedgerows will be retained and enhanced, with only minor scope for very limited hedgerow losses around key access points if necessary;
- All field boundary trees will be retained, unless there is a health and safety or access ground that necessitates any tree removal;
- The East Stour River and Backhouse Wood ancient woodland will be robustly buffered; and
- No operational phase lighting except for motion activated security lighting for emergency purposes.

10.6. Embedded Mitigation

10.6.1. Embedded ecological mitigation comprises the retention (avoidance of impacts upon) of existing hedgerows and field boundary trees and reduced nutrient outflow to aquatic habitats in the East Stour River due to the proposed land use change.

10.7. Likely Significant Effects

Statutory Designated Sites

10.7.1. An assessment of likely significant effects from the Proposed Development upon Poulton Wood LNR, Hatch Park SSSI, Otterpool Quarry SSSI and Gibbin's Brook SSSI is proposed to be scoped out of the ES chapter, as significant effects are not anticipated due to the nature and location of the Proposed Development in relation to these sites and their reasons for designation.

10.7.2. An assessment of likely significant effects from the Proposed Development upon Wye and Crundale SAC and Folkestone to Etchinghill Escarpment SAC is proposed to be scoped out of the ES chapter, as the Proposed Development is unlikely to result in any significant air quality effects through increased nutrient deposition within this SAC due to its distance from the site. In relation to the Folkestone to Etchinghill Escarpment SAC and SSSI, it is possible that construction phase traffic could pass within 200m of the site (in the event of imported materials arriving via Folkestone). As of 5 April 2022, the Air Pollution Information System ('APIS') information pages for this SAC and the corresponding habitat mapping for this SAC that is available through the Multi Agency Geographic Information for the Countryside ('MAGIC') and Kent Landscape Information System ('KLIS') online mapping resources, demonstrate that the grassland sections that are present within 200m of the adjacent A20 road are not at critical load for nitrogen. It is therefore unlikely that the Proposed Development will result in likely significant effects upon this SAC. An assessment of likely significant effects from the Proposed Development upon Dungeness SAC is also proposed to be scoped out of the ES chapter due to the distance of the site from the SAC.

10.7.3. An assessment of likely significant effects from the Proposed Development upon Dungeness Romney Marsh and Rye Bay Ramsar and SPA is also proposed to be scoped out of the ES chapter. Surveys undertaken to date, which encompass the vast majority of the site, have not identified any bird species or numbers to indicate that the site is likely to be functionally linked, for the qualifying bird species or assemblages, to the SPA or Ramsar. On the basis that the remaining wintering bird surveys of the site validate the existing survey data, it is proposed to scope out an assessment of likely significant effects from the Proposed Development upon Dungeness Romney Marsh and Rye Bay Ramsar and SPA.

10.7.4. Likely significant effects upon the Stodmarsh designated site complex are not anticipated to result from the Proposed Development and it is proposed to scope out an assessment of effects on this receptor in the ES chapter. The nature of the Proposed Development will not result in any operational phase outflow of nutrients to the catchment. The works during the construction and decommissioning phases will not pose an elevated risk of nutrient runoff to the East Stour River or the local ditch and stream network that feeds it, when compared with current intensive agricultural activity on site, which includes ploughing, direct nutrient application through fertilisers and extended periods of bare earth cover in proximity to these watercourses. For this reason, no net increase in nutrient input to the East Stour River is predicted as a result of the Proposed Development and therefore the project will not result in any likely significant effect upon the Stodmarsh SAC, SPA or Ramsar and will not adversely affect the underpinning SSSI designation.

Non-statutory Designated Sites

10.7.5. Potential effects upon Backhouse Wood LWS and other non-statutory designated sites located within 1km of the site will be included within the ES chapter. It is anticipated that potential effects upon Backhouse Wood LWS will be fully addressed (i.e. reduced to an insignificant effect) through the adoption of standard construction stage mitigation measures (incorporated in the CEMP and secured by DCO requirement) and that potential effects upon the other three LWSs will be scoped out in the absence of mitigation.

Irreplaceable Habitats

10.7.6. It is anticipated that potential effects upon the Backhouse Wood ancient woodland site during construction and decommissioning will be fully addressed through the adoption of standard construction stage mitigation measures (these will be incorporated into the CEMP secured by DCO requirement), including physical protection. Post construction any potential effects will be addressed through incorporation of a permanent habitat buffer of at least 15m from the ancient woodland edge to the site fenceline as inherent mitigation. This buffer zone will incorporate any necessary reconfiguration of existing footpaths. A more robust vegetated buffer than currently exists will be delivered, resulting in a net improvement in the buffering of the ancient woodland when compared to the existing on-site agricultural activity, which involves ploughing and application of fertilisers and pesticides in proximity to the woodland edge. Therefore, significant effects on Backhouse Wood LWS are not anticipated for the Proposed Development’s construction, operational and decommissioning phases and it is proposed to scope out an assessment of effects on this receptor in the ES chapter.

10.7.7. Based on the nature of the Proposed Development and the physical separation of the seven ancient woodland sites (excluding Backhouse Wood) from the site, likely significant effects from the Proposed Development upon these other ancient woodland sites are not anticipated and therefore it is proposed to scope out an assessment of effects on these receptors in the ES chapter.

Other Notable Habitats

10.7.8. With the exception of some potential minor loss of hedgerow length to widen site access points (if necessary), all priority hedgerows and ponds (Habitats of Principal Importance) will be retained in their entirety. Potentially significant adverse effects upon these habitats will be mitigated through the adoption of standard construction phase mitigation measures, such as physical protection and buffering and pollution prevention and control measures. The Proposed Development will include the improvement of existing hedgerows through infilling of gaps with native woody species and the introduction of a less intensive, wildlife beneficial management regime than the existing baseline condition. Therefore, likely significant effects on these habitats resulting from the Proposed Development are not anticipated and it is therefore proposed to scope out effects on these habitats from the ES chapter.

10.7.9. The East Stour River is a Habitat of Principal Importance. Likely significant adverse effects during the construction upon the East Stour River's habitats will be mitigated through the adoption of standard construction stage mitigation measures (incorporated into the CEMP, secured by DCO requirement), including physical protection and pollution prevention and control measures. Therefore, it is proposed to scope out effects on these habitats from the ES chapter.

10.7.10. The net effect of the Proposed Development upon habitats, including habitats that are not considered to be of local or higher ecological importance, will be quantified and addressed through the submission of a Biodiversity Net Gain Plan in support of the application. This Plan will quantify the pre-development habitat baseline in biodiversity units using the current (at that time) version of the DEFRA Biodiversity Metric. It will also detail and quantify the predicted habitat impacts of the Proposed Development and the proposed habitat creation and enhancement measures that will be adopted to secure a measurable biodiversity net gain on the site.

10.7.11. An assessment of potentially significant effects, incorporating details of any avoidance, mitigation, compensation and enhancement measures for the species and species groups set out in the 'Baseline Environment' section above, and for any additional important species scoped in through the ongoing survey programme, will be set out within the ES chapter.

10.7.12. The majority of the site contains arable crops of limited ecological importance. Most ecological interest, with the exception of farmland bird assemblages and brown hare population, is limited to the field margin boundaries. However, consideration will be given to the following broad categories of potentially significant adverse effects:

- Construction phase:
  - Temporary land-take;
  - Disturbance (visual, noise and vibration);
  - Hydrology and pollution (dust generation and pollution of aquatic habitats);
  - Connectivity (fragmentation of habitats); and
  - Construction site hazards (damage, destruction, degradation of habitats; and killing and injury risks to fauna).
- Operational phase:
  - Temporary (medium term) land-take;
  - Pollution and hydrology; and
  - Connectivity (fragmentation of habitats, including due to fences).
- Decommissioning phase:
  - Disturbance (visual, noise and vibration);
  - Hydrology and pollution (dust generation and pollution of aquatic habitats);
  - Habitat fragmentation (loss of habitats within solar panel areas); and
  - Decommissioning site hazards (damage, destruction, degradation of habitats; and killing and injury risks to fauna).

10.7.13. On the basis there will be no permanent lighting during the operational phase, no significant ecological effects are anticipated, and it is therefore proposed to scope out lighting-related operational phase effects upon bats, birds and other nocturnal species, in the ES chapter. Construction and decommissioning phase lighting-related effects are proposed to be scoped into the assessment but residual effects from construction and decommissioning lighting are not anticipated to be significant, when assessed in detail in the ES chapter.

10.7.14. As a result of the Proposed Development, the site will change from arable farmland to a more diverse habitat mosaic of value to a wider range of important species than the existing baseline conditions. It is therefore anticipated that the Proposed Development is likely to result in potentially significant beneficial effects for at least some important species and species groups. Therefore, consideration will also be given to the following broad categories of potentially significant beneficial effects:

- Connectivity (change in land use will likely result in improved connectivity for species / species groups); and
- Habitat extent and quality (net increase for species / species groups).

10.7.15. The assessment of the Proposed Development's likely significant effects upon important ecological features will only consider potential effects that are relevant to the feature in question, but the above categories summarise the broad effect types that have are proposed to be scoped in and will be considered further.

10.7.16. Table 10.1 provides a summary of the key issues to be considered in relation to Biodiversity.

Table 10.1: Biodiversity Effects

<table>
<tr><th>Receptor</th><th>Effects</th><th>Scoped In</th></tr>
<tr><td>Ecological Designations</td><td rowspan="2">Land-take
Disturbance (visual, noise and vibration)
Hydrology and pollution (dust generation and pollution of aquatic habitats)
Connectivity (habitat fragmentation)</td><td>✓</td></tr>
<tr><td>Habitats

Faunal species (typically populations, assemblages, communities, social groups). For some species, individuals may</td><td>✓</td></tr>
</table>

Receptor	**Effects**	**Scoped In**
also be considered	• Lighting (construction and decommissioning only) • Construction and decommissioning site hazards • Habitat extent and quality	

10.7.17. Tables 10.2 and 10.3 provide a summary of the important ecological features scoped in to, and those proposed to be scoped out of, the ES.

Table 10.2: Important Ecological Features Scoped in to Assessment

Important ecological feature (‘receptor’)	**Rationale**
Habitats of Principal Importance ('HPI')	HPI hedgerows will be retained and protected, but some minor impacts are possible during construction and decommissioning phases.
Important fungal communities / notable fungi	Additional survey data required before conclusion regarding effects can be reached on impacts during construction and decommissioning phases.
Important plant communities / notable plants	
Important invertebrate assemblages / notable invertebrates	Some construction and decommissioning phase impacts upon habitat that supports rare / scarce invertebrates possible, although likely to be minimal.
Great crested newt	Species / species group present. Impacts upon suitable habitat likely during construction and decommissioning phases. Habitat impacts
Reptiles	
Breeding and	

Important ecological feature ('receptor')	Rationale
wintering birds	expected to be minimal for all bar some farmland bird species. Operational phase impacts on a limited number of bird species.
Hazel dormouse	
Badger	
Bat assemblage	
Brown hare	
Harvest mouse	

10.8. Impacts Scoped Out of the Assessment

10.8.1. Assessment of impacts upon the following important ecological features are proposed to be scoped out of the assessment, for all phases of the Proposed Development, as likely significant effects are not anticipated.

Table 10.3: Important Ecological Features Scoped out of Assessment

Important ecological feature ('receptor')	Rationale
Poulton Wood LNR	Based on distance from site and the features these sites are designated for. Absence of any obvious impact pathway.
Hatch Park SSSI	
Gibbin's Brook SSSI	
Otterpool Quarry SSSI	
Wye and Crundale SAC	Based on distance and direction from site and intended construction traffic routing. Absence of any obvious impact pathway.
Dungeness Romney Marsh and Rye Bay Ramsar and SPA	Based on distance from site and the features these sites are designated for. Absence of any obvious impact pathway.
Dungeness SAC	

Important ecological feature ('receptor')	Rationale
Folkestone to Etchinghill Escarpment SAC	Based on distance and direction from site, intended construction traffic routing and SAC not being at critical load for nitrogen.
Stodmarsh SAC, SPA, Ramsar, SSSI complex	Based on nature of the Proposed Development.
Local Wildlife Sites: Backhouse Wood LWS, Aldington Sand Pit LWS, Aldington Woods LWS, Bilsington Woods and Pasture LWS	One LWS (Backhouse Wood) is located adjacent to the site, but impacts can easily be avoided by design and agreed activities under the CEMP.
Ancient Woodland	One ancient woodland site (Backhouse Wood) is located adjacent to the site, but impacts can easily be avoided by design and agreed activities under the CEMP.

10.9. Proposed Approach to PEIR and ES

10.9.1. The EIA process for the biodiversity assessment will be undertaken as follows:

- Establish ecological baseline through survey and desk study, including through consultation with county biological records providers;
- Assess geographic level of importance of important ecological features identified as present. Features of negligible importance will be scoped out of the assessment except where a habitat or species has been afforded a level of legal protection that requires it to be considered in the assessment of likely significant effects, irrespective of that feature's assumed ecological importance (e.g. badger);
- Assess the significance of the predicted effect on that feature in the absence

of mitigation;

- Propose mitigation to address significant predicted adverse effects, following the ecological mitigation hierarchy (avoidance, mitigation, compensation);
- Assess significance of residual effect after mitigation; and
- Consult with relevant nature conservation and regulation bodies on the predicted effects and proposed mitigation.

10.9.2. A qualitative and quantitative ecological impact assessment will be undertaken, following the principles set out in the CIEEM Guidelines.

10.9.3. The CIEEM Guidelines advocate an approach to the assessment of the importance of ecological features using a geographical framework, where the importance or potential importance of an ecological resource or feature should be determined within a defined geographical context.

10.9.4. The guidelines suggest a range of geographical parameters and the ones chosen for this assessment comprise:

- International (e.g. Europe);
- National (e.g. England);
- Regional (e.g. south-east region);
- County (e.g. Kent);
- Local (e.g. ABC / FHDC); and
- Negligible (i.e. insignificant in the context of this assessment).

10.9.5. The assigning of a geographical framework will be based on available guidance and information, professional judgement and peer review. The evaluation categories that will be used, and example criteria are presented in Table 10.4 below.

Table 10.4: Evaluation Categories (CIEEM 2018) and Example Criteria

Geographic Importance	Example Criteria
International	Internationally significant populations of European Protected Species (Annexe IV), Annexe II species, or species otherwise formally deemed to be rare and threatened in Europe or globally (e.g. International Union for the Conservation of Nature 'red-listed'), the loss of which would significantly change the species' overall conservation status (i.e. range, abundance, population trend) at the European scale. A population that would meet the published selection criteria as a qualifying feature for designation of a SAC. An internationally designated site or candidate site, i.e. an SPA, proposed SPA ('pSPA'), SAC, candidate SAC ('cSAC'), Ramsar site, or an area which would meet the published selection criteria for such designation. Other significant areas of Annex I priority habitats listed in the Habitats Directive, the loss of which would significantly change the overall range and area at the European scale in the long term.
National	Nationally significant populations of species identified in the NERC Act 2006, Section 41[63] as being of principal importance for the conservation of biodiversity in England, or otherwise formally deemed to be nationally rare and threatened (e.g. 'red-listed'), the loss of which would significantly change the species' overall conservation status (i.e. range, abundance, population trend) at the national scale. A population that would meet the published selection criteria as a

[63] Natural Environment and Rural Communities Act 2006, Section 41: *Biodiversity lists and action (England).*

Geographic Importance	Example Criteria
	qualifying feature of a SSSI. A nationally designated site, i.e. SSSI, National Nature Reserve or discrete area which would meet the published selection criteria for national designation (e.g. SSSI selection guidelines). A significant area of a non-designated habitat type identified in the NERC Act 2006, Section 41 as being of principal importance for the conservation of biodiversity in England, the loss of which would significantly change the overall range and area of that habitat at the national scale in the long term. Such habitat should be a major component of areas that are at near-equivalence to SSSIs, meeting most of the published SSSI selection criteria.
Regional	Regionally significant populations of species identified in the NERC Act 2006, Section 41 as being of principal importance for the conservation of biodiversity in England, or otherwise formally deemed to be nationally rare and threatened (e.g. ‘red-listed’), the loss of which would significantly change the species’ overall conservation status (i.e. range, abundance, population trend) at the regional scale. A significant area of a non-designated habitat type identified in the NERC Act 2006, Section 41 as being of principal importance for the conservation of biodiversity in England, the loss of which would significantly change the overall range and area of that habitat at the regional level in the long term. Large areas of semi-natural ancient woodland that do not meet the national importance criteria (above) should be considered at this scale due to the irreplaceable nature of such habitat.
County	Significant populations of species identified in the NERC Act 2006,

Geographic Importance	Example Criteria
	Section 41 as being of principal importance for the conservation of biodiversity in England, or otherwise formally deemed to be nationally rare and threatened (e.g. ‘red-listed’), or priority species in the County Biodiversity Action Plan ('BAP') and/or Biodiversity Strategy, the loss of which would significantly change the species’ overall conservation status (i.e. range, abundance, population trend) at the county scale. Sites formally recognised by local authorities, e.g. LWS or considered to meet published ecological selection criteria for such designation. A significant area of a non-designated habitat type identified in the NERC Act 2006, Section 41 as being of principal importance for the conservation of biodiversity in England, the loss of which would significantly change the overall range and area of that habitat at the county scale in the long term. Small areas of semi-natural ancient woodland that do not meet the national or regional importance criteria (above) should be considered at this scale due to the irreplaceable nature of such habitat. A significant area of key habitat identified in the County BAP.
Local	Significant populations of species identified in the NERC Act 2006, Section 41 as being of principal importance for the conservation of biodiversity in England, or otherwise formally deemed to be nationally rare and threatened (e.g. ‘red-listed’), or priority species in the County BAP the loss of which would significantly change the species’ overall conservation status (i.e. range, abundance, population trend) at the district or borough scale.

Geographic Importance	Example Criteria
	Sites formally recognised by local authorities, e.g. Sites of Borough Importance for Nature Conservation (Borough/Local 'SINC'), LNRs, or considered to meet published ecological selection criteria for such designation. A significant area of a non-designated habitat type identified in the NERC Act 2006, Section 41 as being of principal importance for the conservation of biodiversity in England, the loss of which would significantly change the overall range and area of that habitat at the district scale in the long term. A significant and viable area of habitat identified in the District BAP.
Negligible	Species populations of limited ecological importance due to their size, composition or lack of threat/rarity. The loss of such features would have no discernible impact on the species'/habitat's overall range and conservation status at any formal administrative scale in the long term. Areas of habitat of limited ecological importance due to their size, species composition or lack of threat/rarity. The loss of such features would have no significant impact on the habitat's overall range and conservation status at any administrative scale in the long term.

10.9.6. Only habitats and species considered to be of at least local importance will be assessed within the assessment of the Proposed Development's likely significant effects. Features of negligible importance will be scoped out of the assessment.

10.9.7. The only exception to this is where a habitat or species has been afforded a level of legal protection that requires it to be considered in the assessment of likely significant effects, irrespective of that feature's assumed ecological importance (e.g. badger). This will be made clear whenever this occurs.

Significance Criteria

10.9.8. Once an ecological feature has been assigned a geographic level of importance, the next stage is to assess the significance of the predicted impact to that feature.

10.9.9. The CIEEM Guidelines advise that *'the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important... For example, an effect on a species which is on a national list of species of principal importance for biodiversity'*[64] may not have a significant effect on its national population. Examples of other relevant scales include regional and county. It should be noted that effects may be significant at the local scale, particularly in view of policies for no net loss of biodiversity.'

10.9.10. It is therefore sometimes possible that an effect may not be significant at the feature's given level of importance due to its low magnitude, duration, etc., but may be significant at a lower geographic scale. For example, the effects of an impact on a species of county importance may not be discernible or significant at the county scale but may be significant at the local (district) scale. Where this is the case, it will be stated in the assessment.

10.9.11. Conversely, it is important to note that the level of significance of an effect upon an important ecological feature cannot be greater than the geographic level of importance attributed to that feature. For example, if a protected species population (the important ecological feature) is attributed 'local' level importance, the effect upon this population cannot be of greater than 'local' significance.

10.9.12. It is important to note that the CIEEM Guidelines do not recommend assigning any other terms to the impact significance such as 'high', 'moderate' or 'low', such as those found within other EIA best practice guidance.

10.9.13. To determine the likely significance of an effect, the following parameters will be

[64] Natural Environment and Rural Communities Act 2006, Section 41: *Biodiversity lists and action (England).*

used:

- **Impact type** - direct or indirect, positive or negative;
- **Magnitude of impact** - the 'amount' or intensity of an impact. This may sometimes be synonymous with 'extent' (see below) for certain impacts, such as habitats loss. For mortality, it may be the number of individuals killed;
- **Extent of impact** - the area over which the impact will be felt;
- **Duration of impact** - how long a period it will occur across. CIEEM Guidelines suggest that ecological impact durations should be described in terms of ecological characteristics (e.g. species lifecycles/longevity) rather than human timeframes. Therefore, for this assessment, short-term is up to one (breeding / wintering, etc.) season, medium-term is a typical reproductive lifespan (in the wild), and long-term is over several generations. A permanent impact is one where no reasonable chance of recovery/restoration is evident within the foreseeable future;
- **Timing of impact** - when it will occur, taking particular note of seasonality;
- **Frequency of impact** - how often it will occur; and
- **Reversibility of impact** - a reversible impact is one from which spontaneous / natural recovery is possible; or for which effective mitigation is both possible and an enforceable commitment to this can be made.

10.9.14. Mitigation for identified impacts will be based on a 'hierarchy' of mitigation options starting with the most desirable approach:

- Avoid negative impacts where possible;
- Minimise (or reduce) what cannot be avoided; and
- Remedy (or restore) what cannot be reduced.

10.9.15. It should be noted that compensation is regarded as separate from mitigation, with compensation being required when the above measures still result in a significant residual impact. Compensation measures are often employed off site, when on-site mitigation measures are not feasible or successful.

10.9.16. Where possible, the Proposed Development will seek to avoid ecological impacts by design. The measures described in the ES chapter will, therefore, seek to reduce, remedy or compensate for those impacts that could not be avoided through such design measures. Impacts avoided by design will also be described.

10.9.17. Proposed mitigation measures will aim to be proportionate to impacts, but will recognise that where uncertainty of effect exists, a more precautionary approach may be required to minimise risk of failure.

Table 10.5 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Poulton Wood LNR (construction, operational and decommissioning phases)	No adverse impact predicted	Local	No adverse effects predicted	Scoped Out
Hatch Park SSSI (construction, operational and decommissioning phases)	No adverse impact predicted	National	No adverse effects predicted	Scoped Out
Gibbin's Brook SSSI (construction, operational and decommissioning phases)	No adverse impact predicted	National	No adverse effects predicted	Scoped Out
Otterpool Quarry SSSI (construction, operational and decommissioning phases)	No adverse impact predicted	National	No adverse effects predicted	Scoped Out

[65] The importance of ecological features has been assessed in accordance with CIEEM's Ecological Impact Assessment guidance, which advises use of a geographic framework for the assessment of importance of ecological features and advises against the use of terms such as 'Minor, Moderate or Major,' as these are not readily understandable within the context of nature conservation.

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Wye and Crundale SAC (construction, operational and decommissioning phases)	No adverse impact predicted	International	No adverse effects predicted	Scoped Out
Dungeness Romney Marsh and Rye Bay Ramsar and SPA (construction, operational and decommissioning phases)	No adverse impact predicted	International	No adverse effects predicted	Scoped Out
Dungeness SAC (construction, operational and decommissioning phases)	No adverse impact predicted	International	No adverse effects predicted	Scoped Out
Folkestone to Etchinghill Escarpment SAC (construction, operational and decommissioning phases)	No adverse impact predicted	International	No adverse effects predicted	Scoped Out
Stodmarsh SAC, SPA, Ramsar, SSSI complex	No adverse	International	No adverse effects	Scoped Out

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
(construction, operational and decommissioning phases)	impact predicted		predicted	
Local Wildlife Sites: Backhouse Wood LWS, Aldington Sand Pit LWS, Aldington Woods LWS, Bilsington Woods and Pasture LWS (construction, operational and decommissioning phases)	No adverse impact predicted	County	No adverse effects predicted	Scoped Out
Ancient Woodland (construction, operational and decommissioning phases)	No adverse impact predicted	Local or County	No adverse effects predicted	Scoped Out
Habitats of Principal Importance (including. hedgerows, ponds and river) (construction and decommissioning phases only, operational phase impacts scoped out)	Negligible	Local	Negligible or Local	Scoped In
Important fungal communities / notable fungi	Short term	Local or	Negligible or Local	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
(construction and decommissioning phases only, operational phase impacts scoped out)	adverse of local or negligible significance	lower		
Important plant communities / notable plants (construction and decommissioning phases only, operational phase impacts scoped out)	Short term adverse of local or negligible significance	Local	Negligible or Local	Scoped In
Important invertebrate assemblages / notable invertebrates (construction and decommissioning phases only, operational phase impacts scoped out)	Short term adverse of local or negligible significance	Local or lower	Negligible or Local	Scoped In
Great crested newt (construction and decommissioning phases	Short term adverse of	Local	Negligible or Local	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
only, operational phase impacts scoped out) Note: European Protected Species ('EPS') mitigation licence likely to be required for construction and decommissioning phases.	local or negligible significance			
Reptiles (construction and decommissioning phases only, operational phase impacts scoped out)	Short term adverse of local or negligible significance	Local	Negligible or Local	Scoped In
Breeding and wintering birds (construction, operational and decommissioning phases)	Short term adverse of local significance	Local or County	Local	Scoped In
Hazel dormouse (construction and decommissioning phases	Short term adverse of negligible or	Local or lower	Negligible or Local	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
only, operational phase impacts scoped out) Note: Provided that impacts upon suitable habitat (especially hedgerows) remains minimal, an EPS mitigation licence is unlikely to be required in relation to any phase.	local significance			
Badger (construction and decommissioning phases only, operational phase impacts scoped out) Note: Provided that impacts on boundary areas containing badger setts remain negligible, a mitigation licence is unlikely to be required in relation to any phase.	Short term adverse of negligible or local significance	Negligible	Negligible or Local	Scoped In
Bat assemblage (construction and decommissioning phases only, operational phase impacts scoped out)	Short term adverse of negligible or local	Local or County	Negligible or Local	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude[65]	Anticipated importance of feature	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Note: Provided that no trees suitable for roosting bats are impacted (as is the case at the present stage of scheme design), an EPS mitigation licence is unlikely to be required in relation to any phase.	significance			
Brown hare (construction and decommissioning phases only, operational phase impacts scoped out)	Short term adverse of local significance	Local	Negligible or Local	Scoped In
Harvest mouse (construction and decommissioning phases only, operational phase impacts scoped out)	Short term adverse of negligible or local significance	Local	Negligible or Local	Scoped In

11. Water Environment

11.1. Introduction

11.1.1. An assessment of the likely significant hydrogeological and hydrological effects of the Proposed Development will be undertaken.

11.2. Planning Policy Context

11.2.1. Section 5.16 of Draft EN-1 (2021) sets out the matters to be considered in the assessment of any likely significant water quality and resources impacts of the Proposed Development. Impacts relating to flood risk are included in Section 5.8 of the draft NPS.

11.2.2. In terms of hydrological impacts, the draft NPS states the following:

- *‘Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment'* (paragraph 5.16.2);
- *'Where possible, applicants are encouraged to manage surface water during construction by treating surface water runoff from exposed topsoil prior to discharging and to limit the discharge of suspended soils'* (paragraph 5.16.3); and
- *'Applicants are encouraged to consider protective measures to control the risk of pollution to groundwater beyond those outlined in Water Resource Management Plans – this could include, for example, the use of protective barriers'* (paragraph 5.16.4).

11.2.3. With respect to flood risk, the draft NPS requires applicants to undertake a site-specific FRA for all energy projects in Flood Zones 2 and 3 in England. Draft NPS EN-1 (2021) paragraph 5.8.7 sets out the minimum requirements for FRAs. The draft NPS also advises that further guidance is provided in the Planning Practice Guidance Flood Risk and Coastal Change section which accompanies the NPPF. Paragraph 5.8.15 advises that the SoS should not grant consent for development:

- *‘in flood risk areas (Flood Zone 2 in England…), accounting for all sources of flooding and the predicted impacts of climate change unless they are satisfied that the sequential test requirements have been met'; or*
- *'in Flood Zone 3… unless they are satisfied that the Sequential and Exception Test requirements have been met.’*

11.2.4. The Exception Test applies ‘*when the sequential test has identified reasonably available, lower risk sites appropriate for the proposed development where, accounting for wider sustainable development objectives, application of relevant policies would provide a clear reason for refusing development in any alternative locations identified*’ (paragraph 5.8.17).

11.2.5. The draft NPS does however state that in exceptional circumstances, the SoS may grant consent *‘where an increase in flood risk elsewhere cannot be avoided or wholly mitigated… if they are satisfied that the increase in present and future flood risk can be mitigated to an acceptable level and taking account of the benefits of, including the need for, nationally significant energy infrastructure’* (paragraph 5.8.19).

11.2.6. In terms of the specific water and flood risk issues associated with ground-mounted solar PV, Draft NPS EN-3 (2021) states that the FRA will need to consider drainage but that *‘As solar PV panels will drain to the existing ground, the impact will not in general be significant’* (paragraph 2.50.7).

11.2.7. It goes on to state that: *‘Where previous management of the site has involved intensive agricultural practice, solar sites can deliver significant ecosystem services value in the form of drainage, flood attenuation, natural wetland habitat, and water quality management’* (paragraph 2.50.11).

11.2.8. The following ABC Local Plan policies may also be of relevance to the assessment:

- Policy ENV6 – Flood Risk;
- Policy ENV8 – Water Quality, Supply and Treatment; and
- Policy ENV9 – Sustainable Drainage.

11.3. Study Area

Desk-Based Baseline Study

11.3.1. The desk-based baseline study will examine the catchments and the conditions of the water resources on-site and downstream of the site. For the purposes of the assessment, the hydrology and hydrogeology study area will be a 2km buffer from the site boundary, as shown on Figure 12: Local Hydrology. It is proposed that the following tasks will be undertaken to ensure that the baseline data provides sufficient information for the assessment of the Proposed Development's likely significant effects:

- Review of Ordnance Survey ('OS') maps to identify surface water features;
- Review of the Environment Agency's River Basin Management Plans;
- Identification of the locations and characteristics of catchments, surface water features and springs within and adjacent to the site;
- Identification of Water Framework Directive[66] ('WFD') classifications and objectives, obtained from the Environment Agency website for watercourses and waterbodies within, and adjacent to, the site;
- Collation of data on abstractions and discharge consents within and adjacent to the site;
- Collation of information on climate (including long term average monthly rainfall figures), surface hydrology and flood risk; and
- Identification of hydrogeological conditions and groundwater resources (including groundwater vulnerability and productivity); together with secondary information relating to:
    - bedrock and superficial geology mapping; and
    - review of soil mapping.

[66] EU Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for action in the field of water policy. The Water Framework Directive was adopted into UK law through the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 Available at: https://www.legislation.gov.uk/uksi/2017/407/contents/made Accessed March 2022

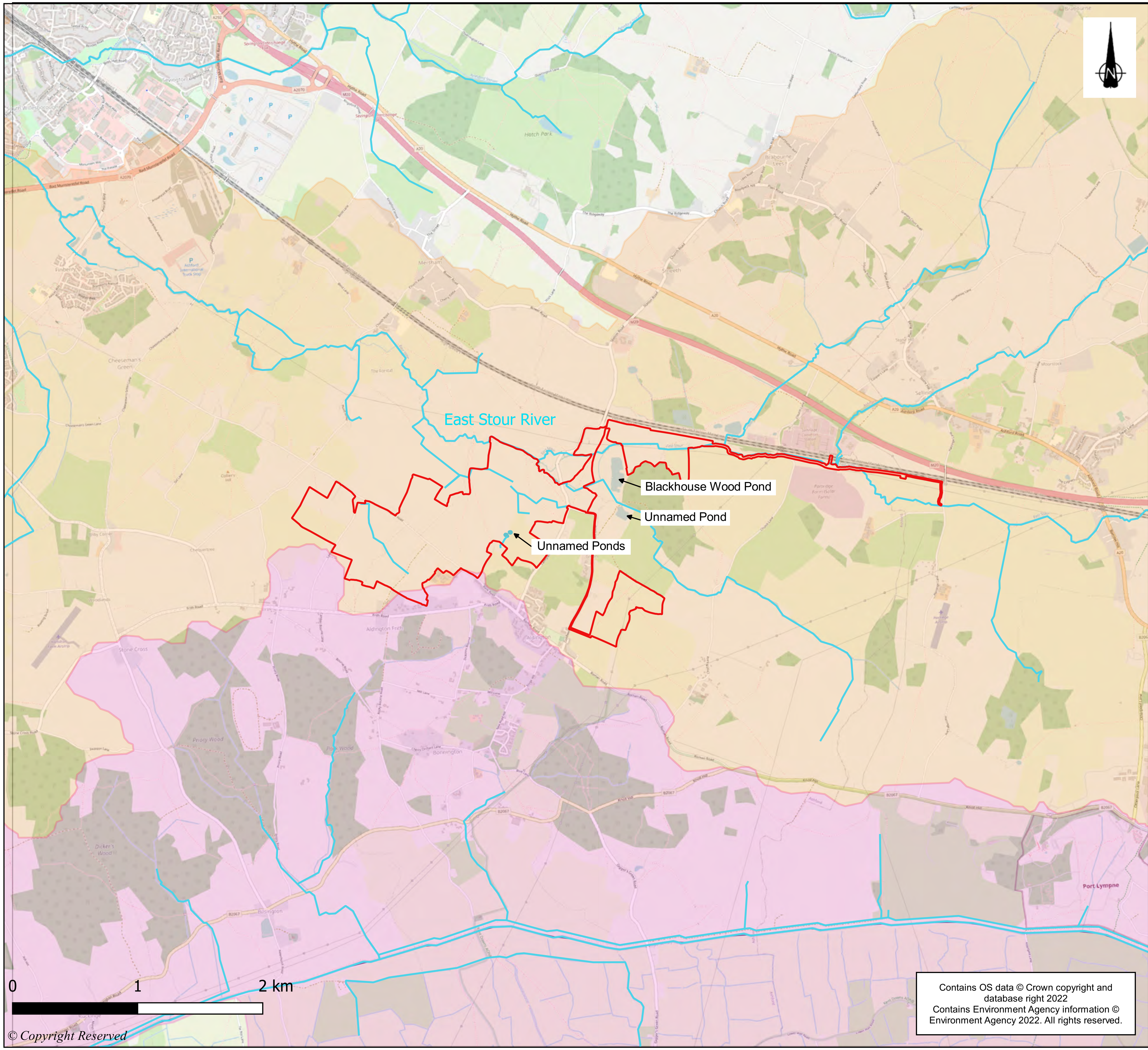
Field Based Baseline Survey

11.3.2. The baseline walkover survey will validate the characteristics of watercourses and waterbodies within the site and in the surrounding area identified in the desk-based baseline study. Characteristics that will be recorded include riverbank height, channel width and depth of water, bank vegetation and any manmade modifications that have been undertaken. A photographic record of the observed watercourses and waterbodies will also be taken. The data from the survey will be used to determine the location and type of any proposed watercourse crossing.

Consultation

11.3.3. As part of the desk-based baseline study, the Environment Agency, KCC and ABC have been consulted regarding incidents of flooding, surface water and groundwater quality data within the site and surrounding area. KCC and ABC have also been consulted regarding the presence of Private Water Supplies within or close to the site. Copies of the correspondence are provided in Appendix 4. Consultation with South East Water will be undertaken to determine the feasibility of a connection for mains water and sewerage facilities.

Figure 12: Local Hydrology



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KEY

- Site Boundary
- Watercourses
- East Stour Surface Water Catchment
- Romney Marsh between Appledore and West Hythe Surface Water Catchment
- Ponds and Lakes

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B	Updated Site Boundary	02/22	IF	RG	AB

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Figure 12: Local Hydrology

DRG No. GM12014/008		REV B	
DRG SIZE A3	SCALE 1:30,000	DATE April 2022	
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11.4. Baseline Environment

Surface Water Features

11.4.1. The local hydrology of the site and its surrounding area is shown on Figure 12: Local Hydrology. There are a number of unnamed drains (small open channel watercourses) that run across the site, which drain into the East Stour River. The East Stour River flows in an east to west direction within, and adjacent, to the northern part of the site. The East Stour River eventually joins the Great Stour River in Ashford.

11.4.2. The majority of the site is located within the 'East Stour' surface water catchment, which has an overall WFD 'Moderate' status[67] and a very small area of the southern part of the site is within the 'Romney Marsh between Appledore and West Hythe' surface water catchment, which has an overall WFD 'Moderate' status[68] as shown on Figure 12: Local Hydrology.

11.4.3. As identified in Section 10 (Biodiversity), there are a number of ponds located onsite. A large pond is located at its closet point to the site is approximately 25m to the east of the site by Backhouse Wood, which hereafter is known as Backhouse Wood Pond, as shown on Figure 12: Local Hydrology.

11.4.4. The majority of the site is located within a surface water Nitrate Vulnerable Zone[69] (only a small section in the southern part of the site is located outside this zone). The site is not located in a surface water drinking water safeguard zone or surface water drinking water protection area[70].

Groundwater

11.4.5. The majority of the site is not located within a groundwater catchment. However, a small area of the north-eastern part of the site is located within the 'Kent Greensand Eastern' groundwater body catchment, which has an overall WFD 'Poor' status[71].

67 Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB107040019640 Accessed March 2022
68 Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB107040019700 Accessed March 2022
69 Available at: https://magic.defra.gov.uk/MagicMap.aspx Accessed March 2022
70 Available at: https://magic.defra.gov.uk/MagicMap.aspx Accessed March 2022
71 Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB40701G501400 Accessed March 2022

11.4.6. According to the BGS 1:50,000 mapping, superficial deposits are largely absent within the site, particularly in the southern and western areas. A band of Alluvium lies across the northern area of the site from west to east, associated with the East Stour River. The overlying superficial deposits (Alluvium), where present, are classified as a 'Secondary A Aquifer'[72] by the Environment Agency.

11.4.7. Published BGS mapping shows that the site is underlain in part by the Atherfield Clay Formation and the Hythe Formation of the Lower Greensand Group and also by the Weald Clay Formation of the Wealden Group. The Lower Greensand Group is classified as a 'Principal Aquifer' by the Environment Agency, which is defined as *'geology that exhibit high permeability and/or provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale'*[73]. Groundwater flow and storage within the Principal Aquifer is associated with the secondary permeability of the formation, controlled by fractures, fissures and joints. There are no aquifer designations relating to the Wealden Group and it is therefore considered to comprise unproductive strata.

11.4.8. Given the sparse cover of superficial deposits at the site, the section of the Lower Greensand Group aquifer within the site is considered to be predominantly unconfined.

11.4.9. The site is not located in in a groundwater Source Protection Zone or groundwater Drinking Water Safeguard Zone.

Flood Risk

11.4.10. Environment Agency Flood Mapping (see Figure 13: Areas of Flood Risk) indicates the majority of the site is located within Flood Zone 1 (identified as land having less than 1 in 1,000 annual probability of river flooding, which is defined as 'low' probability) and that the northern areas of the site are located within Flood Zone 2 (identified as land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding, which is defined as 'medium' probability) and Flood Zone 3 (identified as land having a 1 in 100 or greater annual probability of river (fluvial) flooding,

72 Available at: https://magic.defra.gov.uk/MagicMap.aspx Accessed March 2022
73 Available at: Guidance: https://www.gov.uk/government/publications/protect-groundwater-and-prevent-groundwater-pollution/protect-groundwater-and-prevent-groundwater-pollution. Section 6.1. Accessed March 2022

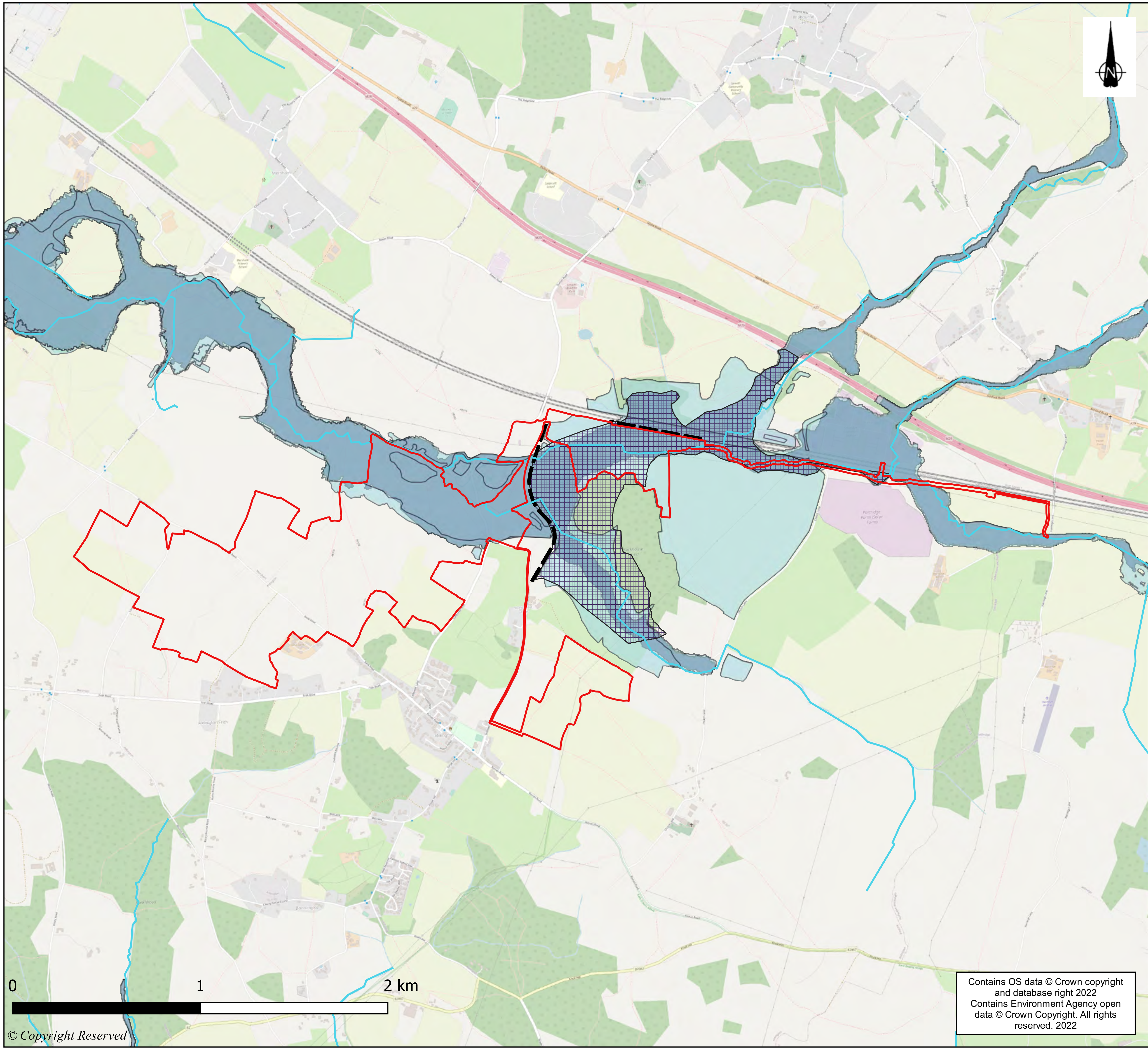
which is defined as ‘high’ probability). An area of the site to the east of an offsite flood defence bund (managed by the Environment Agency) has been identified as being a flood storage area[74].

11.4.11. As shown on the Environment Agency’s Long Term Flood Risk map[75], much of the north of the site is within an area at risk of surface water (pluvial) flooding. These areas tend to be spatially consistent with those areas identified as being at risk from fluvial flooding (located within Flood Zones 2 and 3) and also low-lying. The areas outside the Flood Zone 2 and 3 areas that are shown to be at pluvial flood risk tend to be associated with smaller unmapped watercourses, land drains, field boundaries and depressions in the topography. Therefore, there is a potential risk of fluvial and pluvial flooding at the site and the project design will consider and where possible mitigate this.

[74] Flood Storage Areas are areas that act as a balancing reservoir, storage basin or balancing pond. Their purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval.
Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions. Available at https://data.gov.uk/dataset/cae4e24c-0342-48aa-8a93-d727ce582b3c/flood-map-for-planning-rivers-and-sea-flood-storage-areas Accessed March 2022

[75] Available at: https://check-long-term-flood-risk.service.gov.uk/map Accessed March 2022

Figure 13: Areas of Flood Risk



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KEY

- Site Boundary
- Watercourses
- Rivers and Sea Flood Zone 2
- Rivers and Sea Flood Zone 3
- Flood Storage Areas
- Rivers and Sea Spatial Flood Defences

Note: Flood Zones and Storage Areas are from the Environment Agency's Flood Map for Planning (Rivers and Sea)

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Figure 13: Areas of Flood Risk

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DRG SIZE A3	SCALE 1:20,000		DATE March 2022
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Water Supply

11.4.12. The site is within an area identified by the Environment Agency in 2021 as being 'seriously' water stressed[76]. According to the Environment Agency's catchment abstraction management strategy ('CAMS') for the River Stour[77], the water in the East Stour River cannot be relied on at all times for abstractions.

11.5. Project Basis for Scoping Assessment

11.5.1. The hydrology and flood risk scoping assessment is based on the following parameters and assumptions:

- The Proposed Development will comprise ground-mounted solar PV arrays, together with on-site energy storage, associated infrastructure and an underground cable connection, including potential for watercourse crossing;
- Given the greenfield nature of the site, it is considered unlikely that contamination is present on-site and therefore the potential for remobilisation of contamination to groundwater and surface water sensitive receptors is considered to be unlikely;
- There would be a requirement for potable water and foul water disposal during the construction, operational and decommissioning phases of the Proposed Development. A number of options are currently being considered, such as a mains water and sewer connection, tankering and rainwater harvesting. If a mains water and sewer connection is pursued, consultation with South East Water would be undertaken to determine the feasibility of a connection; and
- Due to part of the site being located within Flood Zones 2 and 3 and the overall size of the site (over 1ha in area), a FRA will be prepared and appended to the ES chapter. This would include undertaking the sequential test and exception test, as required, in accordance with the requirements of Draft NPS EN-1.

[76] Available at: Policy paper: https://www.gov.uk/government/publications/water-stressed-areas-2021-classification Accessed March 2022
[77] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/289867/LIT_2048_61c7f0.pdf Accessed March 2022

11.6. Embedded Mitigation

11.6.1. The design of the Proposed Development will take into account best practice guidance. This includes no built development in hydrologically sensitive areas, such as including maintaining a minimum 10m standoff distance between any built development and watercourses, retaining hydraulic connectivity across the site and adopting pollution prevention measures. As a consequence, mitigation measures will be incorporated into the design and will adhere to the implementation of standard best practice, together with bespoke measures that relate to the baseline environment.

11.6.2. Mitigation measures (e.g. pollution prevention and the design and incorporation of Sustainable Drainage Systems ('SuDS'), with applicable climate change allowances in the design of the Proposed Development) will be designed to avoid, reduce or offset potential adverse effects and these will inform the Proposed Development's design, including its layout. The mitigation section of the ES chapter will, if required, provide preliminary hydrological and hydrogeological monitoring proposals. If required, the extent and nature of monitoring will depend on the findings of the baseline surveys and the assessment of effects.

11.7. Likely Significant Effects

11.7.1. The assessment will identify likely significant effects from the Proposed Development during the construction, operational and decommissioning phases. These include the following:

- Increased runoff on exposed ground causing erosion and pollution;
- Increase in silt and sediment loads as a result of construction works;
- Disturbance or erosion of bed and banks of watercourses and land drains;
- Increased runoff from hardstanding areas causing erosion and pollution;
- Increase in downstream flood risk from watercourse crossings;
- Changes to watercourse morphology and surface water flow and any associated changes in downstream flood risk;

- Point source pollution from accidental spillages; and
- Disruption/ cut off of natural surface and groundwater pathways.

11.7.2. Effects associated with the decommissioning phase of the Proposed Development are not expected to be greater than those associated with the construction phase.

11.8. Impacts Scoped Out of the Assessment

Water Framework Directive Assessment

11.8.1. The Environment Agency's '*Water Framework Directive Risk Assessments: How to Assess the Risk of your Activity*'[78] (April 2016) identifies four stages to determine the need to undertake a full WFD assessment for a proposed development. For the purposes of this assessment, it is considered that a WFD assessment will not be required in support of the Proposed Development for the following reasons:

- **'Stage 1 – Make sure that the assessment covers the receptors that are protected by WFD':** the majority of the site is located within the East Stour surface water body and a very small area of the southern part of the site is within the Romney Marsh between Appledore and West Hythe surface water body. The majority of the site is not located within a groundwater body. However, a small area of the north-eastern part of the site is located within the Kent Greensand Eastern groundwater body;
- **'Stage 2 - demonstrate that the activity supports the objectives of the local River Basin Management Plan ('RBMP')':** the objectives of the river basin management plan for the South-East River Basin District[79] are listed under a programme of measures implemented in order to meet the objectives of the WFD. Specifically, these focus on preventing a deterioration in the status of surface waters and groundwater and achieving 'good' status for all waterbodies. The Proposed Development is unlikely to affect the implementation or effectiveness of these measures;
- **'Stage 3 - investigate the risks on WFD receptors and possible ways of**

[78] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/522426/LIT_10445.pdf Accessed March 2022
[79] Available at: https://www.gov.uk/government/collections/river-basin-management-plans-2015#south-east-river-basin-district-rbmp:-2015 Accessed March 2022

managing those risks': given the nature of the Proposed Development (solar), once operational, there will be very limited potential for adverse effects on the water environment to arise following the implementation of standard, best practice mitigation measures. During the construction and decommissioning phases of the project, adverse effects will be avoided or minimised through measures in a CEMP or equivalent (e.g. pollution prevention plan, sediment management plans and stand off from receptors). Therefore, any adverse effects from the Proposed Development can be mitigated and will not interfere with the waterbodies' objectives or its ability to maintain or achieve good WFD status; and

- **'Stage 4 - show that it meets the sustainability criteria set out in Article 4(7) of the WFD':** this stage is not required as the stage 3 requirements have been met.

11.8.2. As it has been demonstrated above that a WFD assessment is not required, its requirement is proposed to be scoped out of the ES.

11.9. Proposed Approach to PEIR and ES

11.9.1. The PEIR will include a hydrological and hydrogeological desk-based survey, which will review existing data relating to abstractions, discharges and private water supplies requested from the Environment Agency and KCC and ABC, as well as published maps from the BGS and the Environment Agency. This will permit a description of the current baseline condition of the site and a preliminary assessment of the potential water related impacts of the Proposed Development.

11.9.2. Preparation of the Water Environment ES chapter will include an assessment of potential impacts on the local water environment from the Proposed Development and will be undertaken in accordance with the appropriate legislation, national, regional and local planning policies.

11.9.3. The Water Environment ES chapter will build upon the baseline and assessment undertaken as part of the PEIR and draw upon information contained within other ES chapters and technical appendices (including the FRA) to ensure that potential effects are identified and assessed using an established EIA methodology.

11.9.4. The Proposed Development's cumulative effects with other, committed, developments within the same catchments as the site, will be considered to determine any potential significant cumulative effects on receptors.

11.9.5. If significant effects are identified through the assessment, these will require the implementation of specific mitigation (such as specific receptor environmental protection plans and / or monitoring) in addition to the good design, pollution prevention measures and mitigation measures contained in the CEMP or equivalent or the incorporation of SuDS in the design of the Proposed Development. Effects that are identified as minor or negligible are not considered to comprise a significant effect and no further mitigation, beyond the adoption of good industry practice and guidance, will be required.

11.9.6. Mitigation measures will be proposed to either avoid or reduce the impact from the Proposed Development upon the water environment in order that potential impacts to water sensitive receptors are minimised or kept within acceptable limits.

Assessment Methodology

11.9.7. The aims of the EIA assessment are to:

- Establish the water environment baseline condition;
- Identify water environment sensitive receptors;
- Identify potential likely impacts as a result of the Proposed Development and arrive at a conclusion about the likely effect of these;
- Discuss embedded design mitigation and good industry practice that would be implemented as part of the Proposed Development;
- Determine the scale of any potential effects, assuming design mitigation and good industry practice, by assessing the degree of sensitivity of the hydrological and hydrogeological receptors and the potential magnitude of change from the baseline condition;
- Establish if the scale of the effect is considered significant;
- If required, provide specific mitigation measures; and

- Identify any cumulative and residual effects.

11.9.8. An FRA of the Proposed Development will also be undertaken and appended to the ES chapter.

Table 11.1 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
A degradation in water quality of surface water and groundwater receptors as a result of spills of concrete, oil and fuel, as well as uncontrolled releases of sediment laden water, during the construction, operation and decommissioning phases of the Proposed Development.	The magnitude of change to the baseline water environment will vary depending on the distance and location of the receptors and the pollutant source, this is likely to range from Very Low to High.	Receptor sensitivity is likely to range between Very Low and High, depending on individual receptor characteristics.	Negligible to Major adverse	Scoped In
A change in the hydrological and hydrogeology regime of surface water and groundwater receptors (including change to onsite and offsite flood risk) as a result of the Proposed	The magnitude of change to the baseline water environment will vary depending on the distance and location of the receptors and site, this is	Receptor sensitivity is likely to range between Very Low and High, depending on individual	Negligible to Major adverse	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Development during all phases of the Proposed Development.	likely to range from Very Low to High.	receptor characteristics.		
Change to the ability for waterbodies to achieve or maintain good WFD status, as a result of the construction of the Proposed Development.	The Proposed Development would not affect the ability for waterbodies to achieve or maintain good WFD status, therefore there would be no change from the baseline water environment, i.e. Very Low.	The receptors are the water catchments (surface water rand groundwater), which the site is located within. These typically have High sensitivity.	As the Proposed Development would not affect the ability for waterbodies to achieve or maintain good WFD status, there would be no change from the baseline water environment and therefore no impact.	Scoped Out

12. Socio-economics

12.1. Introduction

12.1.1. This section of the Scoping Report identifies the socio-economic characteristics of relevance to the Proposed Development and identifies those activities with the potential for likely significant effects during the construction, operational and decommissioning phases.

12.1.2. Activities include the procurement of employment, goods and services and the contribution to the economy (measured through the creation of Gross Value Added ('GVA')) and energy generation, expenditure, and the effects of the Proposed Development on existing residential, community, tourism and recreation uses, including PRoWs.

12.2. Planning Policy Context

12.2.1. Section 5.13 of Draft EN-1 (2021) sets out the matters to be considered in the assessment of any likely socio-economic impacts at local or regional levels of the Proposed Development. The draft NPS (paragraph 5.13.3) requires the assessment of all socio-economic impacts that should be reported in the ES, which may include:

- *'The creation of jobs and opportunities…;*
- *The contribution to the development of low-carbon industries at the local and regional level as well as nationally;*
- *The provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;*
- *Any indirect beneficial impacts for the region hosting the infrastructure, in particular in relation to use of local support services and supply chains;*
- *Effect on tourism;*
- *The impact of a changing influx of workers during the different construction, operation and decommissioning phase of the energy infrastructure…; and*

- *Cumulative effects – if development consent were to be granted for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects...'*

12.2.2. Draft NPS EN-3 (2021), at paragraph 2.49.11, states that *'Applicants should set out what would be decommissioned and removed from the site as the end of the operational life of the generating station'*. Draft NPS EN-3 goes on to state that:

> *'Furthermore, there may be socio-economic benefits in retaining site infrastructure after the operational life, such as retaining pathways through the site or a safe substation'*

12.2.3. The following ABC Local Plan policies may also be of relevance:

- Policy EMP1 – New Employment Uses; and
- Policy ENV4 – Light Pollution and Promoting Dark Skies.

12.3. Study Area

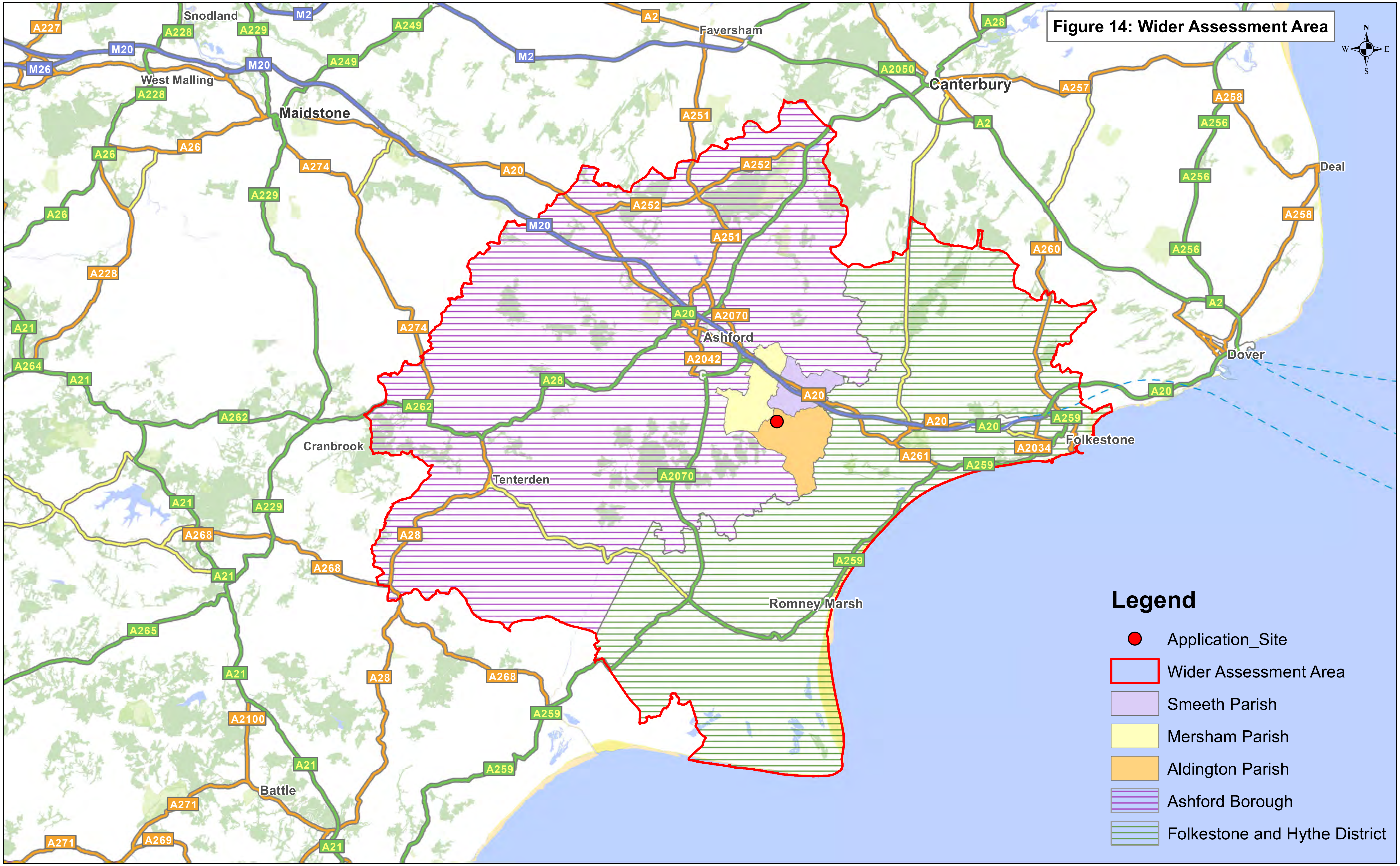
12.3.1. The site is located near to the village of Aldington, predominantly within the local authority of ABC (in part also within FHDC if the Alternative Route for the cable connection is pursued) (see Figure 2: Site Boundary for EIA Scoping and Figure 3: Grid Connection Cable Route Options). The existing residential communities of Aldington Parish, Mersham Parish and Smeeth Parish, along with existing community, tourism and recreation uses (including PRoWs) within the immediate proximity of the site, have the potential to be impacted the most by the Proposed Development and these three parishes combined are considered to represent the immediate impact area for residential, community uses, tourism and recreation effects.

12.3.2. The site is situated approximately equidistant between the two major towns of Ashford (in the ABC area) and Folkestone (in the FHDC area). These two towns are the main employment centres within proximity of the site and, for this reason, the two local authorities of ABC and FHDC are collectively considered to represent the 'Wider Assessment Area' (shown in Figure 14) within which the economic effects (namely employment, expenditure and GVA creation) of the Proposed

Development will most be felt.

12.3.3. There is the potential for some of the economic effects (namely employment and contribution to energy generation) of the Proposed Development to be felt more widely than the Wider Assessment Area, for example, elsewhere in Kent County, the South-East ('SE') region and England, and for this reason preliminary baseline data for these comparator areas is also provided.

Figure 14: Wider Assessment Area



JOB NUMBER: Stonestreet Green Solar DRAWING: EPL 001 Limited REVISION: 1 DRAWN BY: NL CHECKED BY: DB DATE: March 2022 SCALE: 1:200,000

Data collated for constraints and analysis mapping is based on publicly available sources at the time of preparation, inserted using the British National Grid and may itself not be accurate. Barton Willmore shall not be liable for the accuracy of data derived from external sources.

12.4. Baseline Environment

12.4.1. A high-level desk study has been undertaken to provide a preliminary baseline of the main demographic, economy and employment characteristics.

Population

12.4.2. According to the most recently published 2021 Experian Population Estimates[80], Aldington Parish has a population of 1,370 people. The Wider Assessment Area has a population of 245,400. This comprises a population of 132,000 in the Ashford Borough area and 113,400 within the Folkestone and Hythe District area, demonstrating a relatively equal population split across the Wider Assessment area.

12.4.3. The Wider Assessment Area has a marginally older age profile compared to that of Kent, the SE region and England. 22% of the Wider Assessment Area is aged 65+ years compared to 20% across Kent and the SE region and 19% for England. In contrast, there is a smaller proportion of working age (aged 16 to 64 years) residents within the Wider Assessment Area (59%), compared to the comparative study areas (Kent = 60%; SE region = 61% and England = 62%).

Employment and Businesses

12.4.4. There are approximately 124,100[81] residents in the Wider Assessment Area classified as economically active (this includes all those people in employment or available to work, for example the unemployed). This is equivalent to 71.2% of all 16- to 64-year-olds within the Wider Assessment Area, which is marginally higher than across Kent (71.0%) and England (71.1%), but lower than for the SE region (73.0%).

12.4.5. Of those residents in the Wider Assessment Area who are in employment, 11,752 work within the construction industry[82], representing 10.3% of the total employed residents in the Wider Assessment Area. A further 1,210 (1.1% of the total) are

[80] Available at: https://www.experian.co.uk/economics/economic-forecasts/index.html Accessed March 2022
[81] Available at: https://www.experian.co.uk/economics/economic-forecasts/index.html Accessed March 2022
[82] Available at: https://www.experian.co.uk/economics/economic-forecasts/index.html Accessed March 2022

employed within the electricity, gas, steam and air conditioning industry. Around 6,129 (5.4%) work within accommodation and food service activities.

12.4.6. According to the 2020 Business Register and Employment Survey ('BRES') data[83] there are 97,750 jobs across the Wider Assessment Area. Table 12.1 provides a breakdown of the jobs in the Wider Assessment Area by broad industrial sector. Sectors that are relevant to this assessment are accommodation and food services (7,000 jobs = 7% of the total), construction (6,000 jobs = 6% of the total) and mining, quarrying and utilities (1,625 jobs = 2% of the total). Of the 1,625 mining, quarrying and utilities jobs, 630 are within production, transmission, and distribution of electricity.

Table 12.1: Broad Industrial Sector Breakdown – Wider Assessment Area

Industry	Number of Jobs	Percentage of Total
Agriculture, forestry and fishing	3,000	3%
Mining, quarrying and utilities	1,625	2%
Manufacturing	6,500	7%
Construction	6,000	6%
Motor trades	2,125	2%
Wholesale	4,750	5%
Retail	10,500	11%
Transport and storage	4,750	5%
Accommodation and food services	7,000	7%
Information and communication	2,250	2%
Financial and insurance	2,125	2%
Property	1,375	1%
Professional, scientific and technical	6,000	6%

[83] Available at: Office for National Statistics Accessed March 2022

Industry	Number of Jobs	Percentage of Total
Business administration and support services	9,000	9%
Public administration and defence	4,500	5%
Education	7,500	8%
Health	14,500	15%
Arts, entertainment, recreation and other services	4,250	4%

12.4.7. Approximately 95% of the site is currently in agricultural use, consisting of arable cropping production and grazing.

12.4.8. With the three parishes of Aldington, Mersham and Smeeth, there are a number of businesses which support employment. These include agricultural businesses incorporating poultry farming and arable crops, in addition to equestrian centres. Frith Business Centre is located in Aldington, providing workshop/studio units for rent, all of which are currently understood to be vacant. Evegate Business Park, Retail and Artisan Village is located to the north of the site, between the HS1 railway line and the M20 motorway, consisting of office, retail, service and industrial units. Aldington Eco Centre, to the east of Aldington, provides conferencing facilities for hire.

12.4.9. A full desk-based audit of existing business uses will be undertaken for the assessment.

Tourism

12.4.10. In 2021, the tourism industry provided 66,000 jobs across Kent[84] distributed across 4,920 tourism enterprises.[85] The Wider Assessment Area contained approximately 1,395 tourism enterprises, accounting for 28% of Kent's tourist enterprises. 150 of the tourism enterprises[86] across the Wider Assessment Area relate to

[84] Available at https://www.ons.gov.uk/searchdata?q=BRES Accessed March 2022
[85] Available at: https://www.nomisweb.co.uk/sources/ukbc Accessed March 2022
[86] Available at: https://www.nomisweb.co.uk/sources/ukbc Accessed March 2022

'accommodation for visitors', accounting for 10.8% of the total tourism enterprises in the Wider Assessment Area. This is comparatively high compared to the levels across Kent (6.9%), the SE region (7.2%) and England (6.6%). A further 550 tourism enterprises in the Wider Assessment Area provide food and beverage serving activities, accounting for 39.4% of tourism enterprise across the Wider Assessment Area. The remaining approximately 695 tourism enterprises in the Wider Assessment Area relate to museum activity, tourism-related transport and tour operator activity.

12.4.11. In 2021, 79.9% of tourism enterprises across the Wider Assessment Area were micro enterprises (0 to 9 employees)[87]. This is reflective of the proportion observed across Kent (82.4%), the SE region (81.0%) and England (81.7%).

12.4.12. In 2021, accommodation and food tourism services generated £139m in GVA[88] across the Wider Assessment Area, equating to 2.6% of the total area's GVA. In comparison, accommodation and food tourism across Kent and the SE region equate to 2.5% and 2.4% of the total GVA, respectively. This compares to 2.4% across England.

12.4.13. Locally, a number of tourist accommodations are located within close proximity (approximately 500m) of the site, including: The Coach House Pantile (holiday home) on Frith Road, The Studio holiday home on Roman Road, and Woodleas Camping and Caravan Site. These tourist accommodations are in Aldington.

Community Uses

12.4.14. Aldington is a rural village that has a number of supporting community uses, including Aldington Primary School, village hall, Reynolds Playing Fields, Post Office/village shop, The Walnut Tree Public House and a gourmet grocery shop.

Recreational Use / ProW

12.4.15. Analysis of KCC's definitive map[89] identifies that there are a number of public

[87] Available at: https://www.nomisweb.co.uk/sources/ukbc Accessed March 2022
[88] Available at: https://www.oxfordeconomics.com/ Accessed March 2022
[89] Available at: https://www.oxfordeconomics.com/ Accessed March 2022

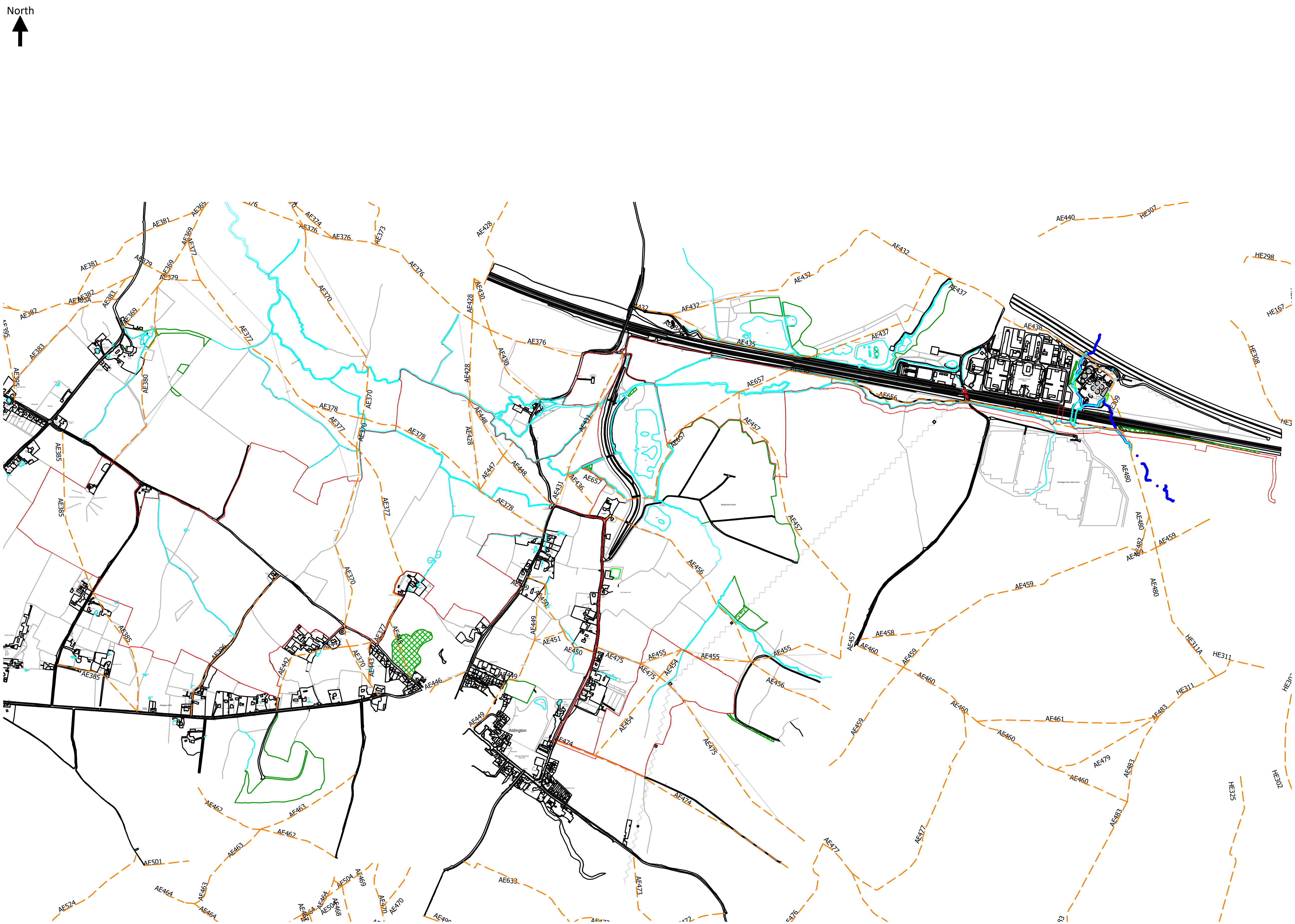
footpaths that run through the site, as shown on Figure 15: Public Rights of Way Map. A preliminary investigation suggests this includes the following 14 PRoWs:

- AE656;
- AE657;
- AE457;
- AE431;
- AE436;
- AE475;
- AE454;
- AE455;
- AE474;
- AE378;
- AE377;
- AE370;
- AE396;
- AE385.

12.4.16. The identified PRoW routes are footpaths that allow the public to walk and run.

12.4.17. All of the PRoW routes that have the potential to be affected by the Proposed Development will be considered prior to the preparation of the ES chapter through discussion with KCC, ABC and FHDC (as applicable).

Figure 15: Public Rights of Way Map



Drawing not to scale,
For information purposes only.
Not for construction.

Notes:

Postcode: TN25 7HP W3W: paints.embodied.warp

Key:

- Site Boundary
- Public Footpath

evolution power

Evolution Power Holdings Ltd
The Core
Gore Cross Business Park
Bridport
Dorset DT6 3FH
Email: energy@evolutionpower.co.uk
www.evolutionpower.co.uk

Project Name:
Stonestreet Green Solar

Document Name:
Figure 15: Public Rights of Way Map

Document Reference #:
142-01-52

Scale: NTS@A3		Issue: SR1
Produced: RC	Checked: CC	Date: March 2022

12.5. Project Basis for Scoping Assessment

12.5.1. The Proposed Development has the potential to create a number of economic benefits, including creating employment opportunities and contributing to the local economy through associated workforce expenditure, the creation of GVA and energy generation. However, there is the potential for the Proposed Development to have adverse effects on existing residential, community, tourism and recreation uses, including PRoWs.

12.6. Embedded Mitigation

12.6.1. Relevant measures described in other sections of the Scoping Report (for example, Landscape and Views, and Noise) will serve to reduce the potential for adverse effects on socio-economic aspects and are not repeated here.

12.7. Likely Significant Effects

12.7.1. Having regard to the preliminary baseline conditions presented above, the Proposed Development has the potential to have likely significant socio-economic effects during the construction, operational and decommissioning phases.

12.7.2. As part of the assessment, a "Farm Impact Questionnaire" will be undertaken to establish the scale of various uses and landownerships on the site. This will consider factors such as the current agricultural management practices, agricultural yields and the end-use of any crop production, as well as potential impacts of severance.

Construction Phase

12.7.3. Construction of the Proposed Development is likely to result in both direct and indirect socio-economic effects, including:

- Generation of employment directly associated with construction works of the Proposed Development;
- Generation of employment from construction supply chain effects (indirect);
- Economic contribution (measured in GVA of both direct and indirect

construction employment);

- Expenditure from construction workforce;
- Noise and visual effects on nearby residential properties, community uses, tourism, recreation and local business. This part of the assessment will be informed by the Noise and Landscape and Views assessments; and
- Diverted access to existing PRoW routes.

12.7.4. The effects on residential properties, community uses, tourism and recreation (including PRoWs) will be localised to the site. The scale and spatial distribution of direct and indirect employment effects will depend on the locations of the companies carrying out the activities and where they source their labour from. However, it is considered that the main impact areas for the economic effects (expenditure and GVA creation) will be the Wider Assessment Area and Kent, as established through assessment of the preliminary baseline conditions.

12.7.5. Effects during the construction phase will be temporary in nature.

Operational Phase

12.7.6. The operational phase of the Proposed Development has the potential to result in the following socio-economic effects:

- Distribution and energy system effects, including the contribution that the Proposed Development will make to renewable energy generation;
- Noise and visual effects on nearby residential properties, community uses, tourism, recreation and local business. This part of the assessment will be informed by the Noise and Landscape and Views and assessments; and
- Diverted access to existing PRoW routes.

12.7.7. The main impact area of the energy effects is likely to be national as the renewable energy produced will feed into the National Grid and the energy storage is expected to assist with grid balancing, but could also be localized, if local demand users are identified. The impact area for the effects on residential properties, community uses, tourism and recreation will be localised to the site.

Decommissioning Phase

12.7.8. Decommissioning of the Proposed Development will generate further direct and indirect socio-economic effects similar to those during the construction phase. However, the scale of these impacts is not possible to assess quantitatively due to the uncertainty over the nature and costs of this activity, particularly as the energy sector and associated engineering technologies are expected to evolve over the lifetime of the Proposed Development. A qualitative assessment will therefore be carried out and reported in the ES.

12.8. Impacts Scoped Out of the Assessment

12.8.1. As stated in the preliminary baseline conditions, the site is currently predominantly in agricultural use, consisting of arable cropping production and grazing. Whilst the production of arable crops will cease as a result of the Proposed Development, the loss of the site's agricultural use will be temporary (for the duration of the construction period). During the operational phase, agricultural uses on the site will resume by allowing grazing on the land. Only a small proportion (less than 5% of the total site area (5.67ha)) of the existing agricultural land will be long-term temporarily lost (or permanently lost, as a 'worst case' scenario) as a result of the Proposed Development. Likely significant effects on agricultural land from the Proposed Development are not anticipated and for this reason, socio-economic effects on agricultural land use are proposed to be scoped out of the assessment. A "Farm Impact Questionnaire" will however be undertaken as part of the baseline work.

12.8.2. During the construction and decommissioning phases, there will be no effects on energy generation, as the Proposed Development will not be generating any energy during these phases. For this reason, effects on energy generation have been scoped out of the assessment during the construction and decommissioning phases.

12.8.3. The operational phase of the Proposed Development will result in on-site employment and associated workforce expenditure. However, this employment will be limited to only a small number of maintenance jobs and therefore operational employment and expenditure and economic output effects are not expected to be significant and for this reason are proposed to be scoped out of the assessment.

12.9. Proposed Approach to PEIR and ES

12.9.1. The socio-economic assessment will be predominantly informed by a desk-based study (to determine the national and local policy context and baseline conditions). However, a site-based survey of the PRoWs will be undertaken as part of the Traffic and Access ES chapter.

12.9.2. Preliminary socio-economic baseline conditions have been presented earlier in this Section. The ES chapter will present an enhanced and updated baseline reporting on the latest data available at the time of writing, drawing on a combination of data sources including published statistics from the Office for National Statistics such as Mid-Year Population Estimates, the Labour Force Survey ('LFS'), BRES and Census data, Experian, KCC and data provided by the Applicant.

12.9.3. The assessment of economic effects will follow guidance including the Homes and Communities Agency Additionality Guide[90] and Her Majesty's Treasury's 'Green Book for Economic Appraisal and Evaluation'[91].

12.9.4. There is no best practice guidance available for assessing the significance of impacts from a development on socio-economic effects. The methodology for assessing the magnitude, sensitivity and significance of socio-economic effects will therefore be based on professional experience and judgement, having regard to the existing baseline position and using the criteria detailed in Section 5 (EIA Methodology) of this Scoping Report.

12.9.5. Those effects which have a moderate or major beneficial or adverse effect will be considered as significant and where effects are established as significant adverse, appropriate mitigation measures will be identified to inform the assessment of

[90] Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/378177/additionality_guide_2014_full.pdf Accessed March 2022
[91] Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf Accessed March 2022

residual effects. Any employment and associated spending effects and community benefits are likely to be beneficial and therefore, no mitigation will be required for these receptors.

12.9.6. When assessing whether the Proposed Development will have a significant effect on residential populations, community uses, tourism and recreation, other technical chapters will be relied upon (such as Landscape and Views and Noise).

12.9.7. Cumulative socio-economic effects of the Proposed Development combined with those schemes detailed in Section 16 (Cumulative Effects) of this Scoping Report will be assessed. The cumulative assessment of economic receptors will consider the impact of the Proposed Development in combination with other developments in the supply chain and labour market capacity in the identified impact areas. Cumulative effects on residential populations, community uses, tourism and recreation receptors will be assessed using other technical chapters (such as Landscape and Views, and Noise).

Table 12.2 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Direct and indirect employment creation (construction and decommissioning phases)	Medium	Low to Medium	Minor to Moderate beneficial	Scoped In
Creation of workforce expenditure (construction and decommissioning phases)	Low	Low to Medium	Negligible to Minor Beneficial	Scoped In
Creation of GVA (all three phases)	Medium	Low to Medium	Minor to Moderate Beneficial	Scoped In
Noise and visual effects on residential properties, community uses, tourism and recreation (all three phases)	Low	Low to Medium	Negligible to Minor adverse/beneficial	Scoped In
Change to PRoW access and amenity (all three	Low to Medium	Low to Medium	Negligible to Moderate	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
phases)			Adverse/Beneficial	
Contribution towards energy generation (operational phase)	Medium to High	Low to Medium	Minor to Major Beneficial	Scoped In
Effects on agricultural land use	Very low	Low	Negligible	Scoped out

13. Traffic and Access

13.1. Introduction

13.1.1. An assessment will be undertaken of the likely significant construction phase effects of the Proposed Development on the environment with respect to traffic and access. As explained below, an assessment of the Proposed Development's operational and decommissioning phase effects is proposed to be scoped out of the ES chapter.

13.2. Planning Policy Context

13.2.1. Section 5.14 of Draft NPS EN-1 (2021) sets out the matters to be considered in the assessment of any likely traffic and transport impacts of the Proposed Development. The draft NPS requires that the assessment of traffic and transport impacts should be reported in the ES and (at paragraphs 5.14.3 to 5.14.5):

- If a project is likely to have significant transport implications, the applicant's ES should include a transport assessment, using the NATA methodology stipulated in Department for Transport guidance[92], or any successor to such methodology;
- Applicants should consult with National Highways and relevant Local Highways Authorities as appropriate on the assessment and mitigation;
- Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts;
- The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts;
- The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports); and
- If additional transport infrastructure is proposed, applicants should discuss

[92] Guidance on transport assessments available at: http://www.dft.gov.uk/pgr/regional/transportassessments/guidanceonta Accessed February 2022

with network providers the possibility of co-funding by Government for any third-party benefits.

13.2.2. Draft NPS EN-3 (2021), paragraph 2.54.3, confirms that the assessment of impact from solar farms on construction traffic will need to include an assessment of *‘the various potential routes to the site for delivery of materials and components where the source of the materials is known at the time of the application and selected the route that is the most appropriate’.* Draft NPS EN-3 goes on to state:

- *‘It is possible that the exact location of the source of construction materials, such as crushed stone or concrete will not be known at the time of the application to the Secretary of State. In these circumstances, the impact of additional vehicles on the likely potential routes should have been assessed'* (paragraph 2.54.3);
- *'The applicant should assess whether the access roads are suitable for the transportation of components which will include whether they are sufficiently wide for the proposed vehicles, or bridges sufficiently strong for the heavier components to be transported to the site. It is unlikely that sections of the route will require modification to allow for the transportation of components to the site, given the nature of solar developments, but any potential modifications should be identified, and potential effects assessed as part of the ES*' (paragraph 2.54.4); and
- *'There may be several other energy infrastructure developments proposed that use a common port and/or access route and pass through the same towns. It is common for solar farms to locate where there is existing or surplus grid capacity, for instance. When a cumulative impact is likely then a cumulative transport assessment should form part of the ES to consider the impacts of abnormal traffic movements relating to the project in question in combination with those form any other relevant development. Consultation with the relevant local highways authorities is likely to be necessary’* (paragraph 2.54.5).

13.2.3. The following ABC Local Plan policies may also be relevant to the assessment:

- Policy TRA7 – The Road Network and Development;

- Policy TRA8 – Travel Plans, Assessments and Statements; and
- Policy ENV10 – Renewable and Low Carbon Energy.

13.3. Study Area

13.3.1. The study area for the assessment of the Proposed Development's likely significant effects on traffic and access is predicated on the proposed routes to site for construction traffic from the strategic road network. It is proposed that construction traffic will approach the site from Junction 10a of the M20 motorway and then the A20 to the north of the site, before joining the C609 Station Road and accessing the site via C609 Goldwell Lane or Calleywell Lane (refer to Figure 5: Construction Traffic Access Route). No construction access is proposed from the south of the site through the village of Aldington or from Roman Road to the west of Aldington. The scope of the proposed study area has been based on professional judgement on the basis that the proposed construction access route has been identified and no significant effects are anticipated in relation to the wider strategic road network.

13.4. Baseline Environment

13.4.1. In terms of the traffic and access impacts resulting from the Proposed Development, the sensitive receptors comprise users of the roads within the study area (refer to Figure 5: Construction Traffic Access Route) and the users of the locations through which those roads pass. It is considered that the main sensitive receptors to increased traffic as a result of the Proposed Development will be located along the C609, between the junction with the A20 and Aldington. As such, the study area (refer to Figure 5: Construction Traffic Access Route) is defined as:

- The A20 in the vicinity of the junction with the C609 Station Road;
- The C609 Station Road south from the A20;
- The C609 Goldwell Lane between Station Road and Roman Road; and
- Calleywell Lane between Station Road and Roman Road.

13.4.2. Access to the eastern part of the site will be taken from an existing junction on the C609 Goldwell Lane currently used for agricultural access.

13.5. Project Basis for Scoping Assessment

13.5.1. The traffic and access scoping assessment is based on the following assumptions in relation to construction traffic access to the site from the surrounding road network:

- Access to the majority of the site will be from new and existing access points located along either side of the C609 Station Road, between the bridge over the HS1 railway line adjacent to the northern part of the site boundary and the junction between the C609 Goldwell Lane and Calleywell Lane; and
- Access to the eastern part of the site will be taken from an existing junction on the C609 Goldwell Lane currently used for agricultural access.

13.5.2. Traffic and access impacts resulting from the Proposed Development are, based on professional judgment, assumed to be restricted to the road network within the study area identified in Section 13.3 and the receptors identified in Section 13.4, which form the proposed construction access route (refer to Figure 5: Construction Traffic Access Route) from the strategic road network to the site.

13.6. Embedded Mitigation

13.6.1. Embedded mitigation for the Proposed Development includes the design of the access junctions to ensure suitable visibility.

13.7. Likely Significant Effects

13.7.1. The likely significant effects of the Proposed Development's construction phase on traffic and access will be assessed. This will include the effects on existing traffic flows and the local road network, which will be quantified through comparison of existing baseline traffic flows and vehicle composition, with the flows predicted as a result of the construction of the Proposed Development. The likely significant cumulative effects of the Proposed Development's construction traffic with other developments on traffic flow will also be assessed, as necessary.

13.7.2. An Outline CTMP will be prepared and submitted as a supporting appendix to the ES Chapter. The implementation of the CTMP will be secured via DCO requirement.

13.8. Impacts Scoped Out of the Assessment

13.8.1. On the basis of the work undertaken to date, professional judgement and experience from other similar projects, likely significant effects on traffic and access resulting from vehicles during the Proposed Development's operational phase are not anticipated. Operational traffic generation is predicted to result in a maximum of 2 (two-way) vehicle movements per day for maintenance purposes. On this basis, an assessment of the Proposed Development's operational phase effects is proposed to be scoped out of the ES chapter.

13.8.2. On the basis of professional judgement and experience from other similar projects, likely significant effects on traffic and access resulting from the decommissioning phase of the Proposed Development are likely to be at worst, no greater than the construction phase effects and, based on the proposed year of assessment, are considered to be too far in the future to be able to accurately predict traffic flows within the study area. Mitigation measures will be similar to those identified for the construction phase and secured via a Decommissioning Traffic Management Plan to be secured by DCO requirement. On this basis, an assessment of the Proposed Development's decommissioning phase effects is proposed to be scoped out of the ES chapter.

13.9. Proposed Approach to PEIR and ES

13.9.1. The proposed approach will be shared with the Local Highways Authority to seek agreement. The assessment will be based on guidance provided by the Institute of Environmental Assessment (1993) (now IEMA) ('the IEMA Guidelines')[93], guidelines prepared by the Institution of Highways and Transportation for Traffic Impact Assessment (1994)[94], and 2014 UK government guidance on the preparation of Transport Assessments[95].

13.9.2. It is proposed that 7-day, 24-hour Automatic Traffic Count ('ATC') surveys will be

93 Available at: https://www.iema.net/resources/event-reports/2020/02/13/iema-impact-assessment-guidance Accessed March 2022
94 Available at: https://www.thenbs.com/PublicationIndex/documents/details?Pub=IHT&DocID=254194 Accessed March 2022
95 Available at: https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements Accessed March 2022

undertaken at two locations on the C609, between the A20 and Aldington. It is anticipated that existing traffic count data in the form of AADT will be sourced from publicly available data held by the Department for Transport for the A20.

13.9.3. Injury accident data for the roads within the study area will be investigated, covering the previous 5 years to identify any existing accident issues.

13.9.4. The following rules, as set out in the IEMA Guidelines, will be used to determine which links within the traffic and access study area should be considered for further assessment:

- Rule 1 – include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- Rule 2 – include any other specifically sensitive areas (such as schools, hospitals, congested junctions etc.) where traffic flows are predicted to increase by 10% or more.

13.9.5. Rules 1 and 2 are used as a screening tool to determine whether or not a full assessment of effects on routes within the study area is required as a result of an increase in road traffic. Where anticipated construction traffic flows from a proposed development do not constitute an increase greater than 30% (or 10% at sensitive locations) on the existing traffic baseline flows, a detailed assessment of effects would not be necessary.

13.9.6. The assessment will be structured around the consideration of likely significant environmental effects related to increased traffic volumes within the study area on the following environmental impact criteria as identified by the IEMA Guidelines, comprising:

- Severance;
- Driver delay;
- Pedestrian delay and amenity;
- Fear and intimidation;
- Accidents and safety; and

- Hazardous/ dangerous loads.

13.9.7. Abnormal load movements are anticipated for the Proposed Development, associated with the delivery of the transformer element of the Proposed Development's substation. However, this will be controlled by separate government legislation under the Highways Act 1980, requiring consultation with both the police and highways authorities in advance. It is proposed that an Abnormal Load Traffic Management Plan is prepared, prior to movement and following confirmation of the dimensions of the load (likely a transformer) along with the likely Port of Entry and proposed access route. It is proposed that this will be secured by DCO requirement.

13.9.8. The ES will include a brief construction works programme, to be set out in Chapter 5 (Construction Methodology and Phasing), a description of the type of vehicles used during the construction phase and an estimate of the number of trips anticipated to be generated by HGVs, LGVs and other vehicles. To assess a realistic 'worst case' scenario, predicted traffic flows of the construction month(s) with the greatest predicted traffic volumes will be compared with projected traffic flows (at the time of construction) at the chosen assessment locations. Where worst case predicted construction traffic volumes are greater than the Rule 1 and 2 thresholds, the significance of the effects on receptors will be assessed against the IEMA Guidelines' environmental impact criteria.

Table 13.1 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Existing users of the roads and the users of the locations through which those roads pass identified within the study area during the construction phase.	Very Low-Medium	Low-High	Negligible-Major	Scoped In
Existing users of the roads and the users of the locations through which those roads pass identified within the study area during the operational phase.	Very Low	Low-High	Negligible-Minor	Scoped Out
Existing users of the roads and the users of the locations through which those roads pass identified within the study area during the decommissioning phase.	Very Low-Medium	Low-High	Uncertain	Scoped Out
Dangerous/Hazardous/Abnormal Loads	Very Low	Low-High	Negligible-Minor	Scoped In

14. Noise

14.1. Introduction

14.1.1. An assessment of the likely significant effects of the Proposed Development with respect to noise will be undertaken. This will include construction phase (short-term) and operational phase (long-term) effects. The decommissioning phase noise emissions will be similar to and no greater than the construction phase. Assessment at this stage would not be possible due to the uncertainty around future construction techniques and baseline noise levels against which the phase would be assessed and therefore is proposed to be scoped out of the assessment.

14.2. Planning Policy Context

14.2.1. Section 5.12 of Draft NPS- EN-1 (2021) sets out the matters to be considered in the assessment of any likely significant noise and vibration impacts of the Proposed Development. The draft NPS (at paragraph 5.12.4) requires that where noise impacts are likely to arise from the Proposed Development, the applicant should include the following in their noise assessment:

- *'a description of the noise generating aspects of the development proposal leading to noise impacts, including the identification of any distinctive tonal, impulsive, low frequency or temporal characteristics of the noise;*
- *identification of noise sensitive receptors and noise sensitive areas that may be affected;*
- *the characteristics of the existing noise environment;*
- *a prediction of how the noise environment will change with the proposed development:*
    - *in the shorter term, such as during the construction period;*
    - *in the longer term, during the operating life of the infrastructure; and*
    - *at particular times of the day, evening and night (and weekends) as appropriate, and at different times of year;*
- *an assessment of the effect of predicted changes in the noise environment on*

any noise-sensitive receptors, including an assessment of any likely impact on health and well-being where appropriate, and noise-sensitive areas;

- *if likely to cause disturbance, an assessment of the effect of underwater or subterranean noise; and*
- *measures to be employed in mitigating the effects of noise – applicants should consider using best available techniques to reduce noise impacts'.*

14.2.2. Draft NPS EN-3 (2021), at paragraph 2.4.2, states that *'Proposals for renewable energy infrastructure should demonstrate good design…to mitigate impacts such as noise'*. Noise impacts in the draft NPS are identified as relating predominantly to construction traffic associated with solar project developments. Draft NPS EN-3 goes on to state that the assessment of impact from solar farms on construction traffic will need to include an assessment of:

'the various potential routes to the site for delivery of materials and components where the source of the materials is known at the time of the application and select the route that is the most appropriate'. (paragraph 2.54.3)

14.2.3. The Noise Policy Statement for England (March,2010)[96], ('NPSE') defines three categories as follows:

- *'NOEL – No Observed Effect Level*

  This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

- *LOAEL – Lowest Observed Adverse Effect Level*

  This is the level above which adverse effects on health and quality of life can be detected.

- *SOAEL – Significant Observed Adverse Effect Level*

  This is the level above which significant adverse effects on health and quality of life occur'

[96] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf Accessed March 2022

14.2.4. The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided. The second aim refers to the situation where the impact lies somewhere between LOAEL and SOAEL, and it requires that all reasonable steps are taken to mitigate and minimise the adverse effects of noise. However, this does not mean that such adverse effects cannot occur.

14.2.5. The following ABC Local Plan policy may also be relevant to the assessment:

- Policy ENV10 – Renewable and Low Carbon Energy.

14.3. Study Area

14.3.1. For the purposes of the noise assessment, the initial study area will comprise the area of the site and an area extending up to 300m from the boundary (the site boundary is shown on Figure 2: Boundary for EIA Scoping). This is consistent with the study area proposed in Design Manual for Roads and Bridges Document LA 111 'Noise and Vibration'[97] for construction projects. No specific dimension of a study area is given for assessment of industrial and commercial sound, however, 300m is normally sufficient to encompass noise sensitive receptors.

14.3.2. Effects due to offsite movement of construction vehicles will be assessed over the study area considered for the traffic assessment as discussed in Section 13.3.

14.4. Baseline Environment

14.4.1. The site's location is discussed in Section 1.4 (Location and Surrounding Area) of this Scoping Report. During the daytime, the baseline sound levels in the area are impacted by rail traffic from the HS1 railway line and more distant traffic noise from the M20 motorway. The influence of these sources reduces as the site extends further south, with other ambient sources becoming more influential. Such sources include local road traffic, agricultural noise from fixed or mobile plant and birds. At night, agricultural noise and local road traffic are likely to be reduced and background noise levels will be influenced mainly by the road and rail network.

14.4.2. The key sensitive receptors in relation to the assessment of the Proposed

[97] Available at: https://www.standardsforhighways.co.uk/dmrb/search/cc8cfcf7-c235-4052-8d32-d5398796b364 Accessed March 2022

Development's likely significant noise effects comprise the following:

- Existing residential receptors;
- Existing leisure receptors, such as Mersham Sports Ground; and
- Existing community receptors, such as Aldington Village Hall and associated playing fields.

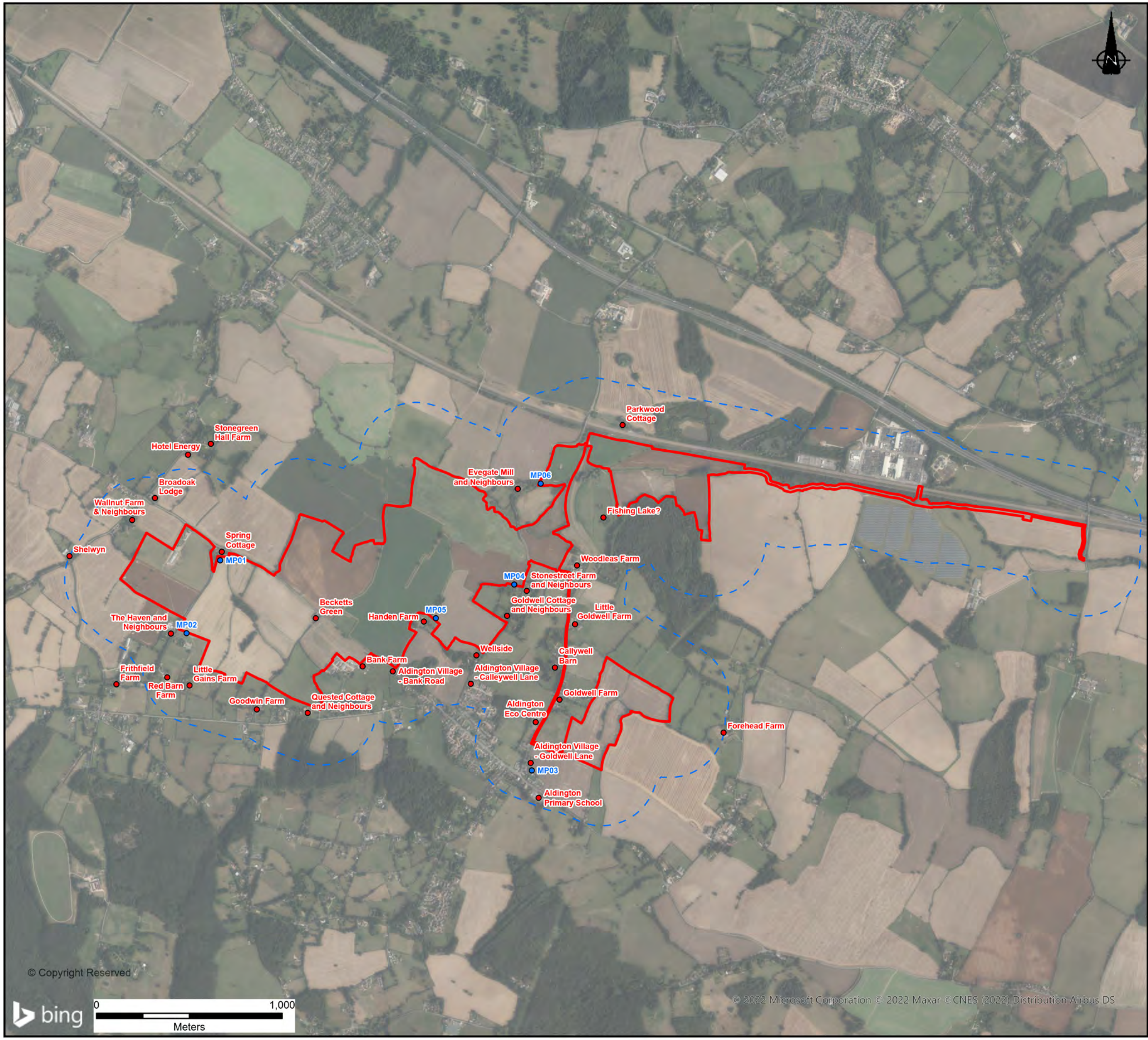
14.4.3. The baseline monitoring methodology has been agreed with the Environmental Health Officer at ABC. The relevant e-mail correspondence is provided in Appendix 5. It has been agreed that baseline sound levels should be measured over a period of at least 24 hours at 6 monitoring locations. Given the industrial and construction noise type of assessment to be undertaken, the following baseline noise metrics will be measured, as required by BS41412[94] and BS5228[93]:

- Ambient average sound levels ($L_{Aeq,T}$);
- Ambient background sound levels ($L_{A90,T}$);
- Maximum and minimum noise events; and
- 1/3 octave spectrum of ambient sound.

14.4.4. Indicative monitoring locations (identified in Figure 16: Noise Monitoring Locations) have been agreed through correspondence with ABC, again provided in Appendix 5.

14.4.5. It would not be feasible to undertake baseline sound monitoring at all identified receptors around the site and as such each monitoring location will be representative of a number of identified receptors. It is expected that receptors will be grouped depending on their proximity to the M20 motorway, HS1 railway line and any local sources of road noise.

Figure 16: Noise Monitoring Locations



KEY

- Site Boundary
- 300 m Buffer
- Indicative Monitoring Positions
- Identified Receptors

Notes:

Boundaries are indicative.
Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHKD	APP'D

CLIENT

EPL 001 LIMITED

PROJECT

STONESTREET GREEN SOLAR

DRAWING TITLE

FIGURE 16: NOISE MONITORING LOCATIONS

DRG No.	REV
GM12014-007	A

DRG SIZE	SCALE	DATE
A3	1:20,000	MARCH 2022

DRAWN BY	CHECKED BY	APPROVED BY
CT	MW	MW

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14.5. Project Basis for Scoping Assessment

14.5.1. The assessment assumes that the construction and decommissioning phases will be similar in scope and duration. However, piling is only anticipated during the construction phase. Each of these phases will be approximately 12 months in duration and activity around the site will be transient, minimizing any effect at any individual receptor.

14.5.2. Noise effects of the operational phase will be limited to operational plant associated with solar components (comprising inverters, transformers and switch gear), grid connections and energy storage components (comprising transformers, inverters, switch gear and cooling elements). The Proposed Development will be designed with careful consideration to the principles of good acoustic design, alongside technology advances, grid conditions and commercial opportunities. The energy storage configuration will be incorporated into the Proposed Development. Energy storage components will have variable noise emissions based on the load and ambient temperature with operations up to 24 hours per day. Other components will only operate during daylight hours. This will include time before 0700 from March to September, which would be considered night-time.

14.5.3. Operational traffic flow will consist of a (worst case) maximum 2 (two-way) vehicle movements per day for maintenance purposes. This will be true for the opening year and all future years of operation.

14.6. Embedded Mitigation

14.6.1. The operational site will be planned considering the principles of good acoustic design. Wherever possible, the plant to be installed will be located away from sensitive receptors.

14.6.2. Further to this, all items of plant will be selected and installed in such a way that tonal and impulsive noise emissions will be minimized or eliminated and other characteristics that may be identified against the ambient acoustic environment will be reduced as far as is reasonably practicable.

14.7. Likely Significant Effects

Construction - On Site Noise

14.7.1. The likely significant effects of noise during the construction phase of the Proposed Development will be assessed qualitatively, in accordance with the British Standard 5228:2009+A1:2014[98] '*Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise and Part 2: Vibration*'. The focus will be on mitigation measures to be included in a CEMP.

Construction - Off Site Traffic

14.7.2. The change in noise levels resulting from additional traffic flows associated with the construction phase of the Proposed Development will be assessed in accordance with guidance contained in Design Manual for Roads and Bridges document LA 111-V02 Noise and Vibration, for the following scenarios:

- Baseline year (2022);
- Do Minimum' Opening Year ('DMOY') (2026); and
- Do Something' Opening Year ('DSOY') (2026).

Operational Noise

14.7.3. The likely significant effects of on-site operational noise during the operational phase of the Proposed Development will be assessed with reference to the British Standard 4142:2014+A1:2019[99] '*Methods for rating and assessing commercial and industrial sound*'. The focus will be on predicting the noise emissions from the Proposed Development during operation and assessing them by comparing the operational rating level to the baseline background sound level at noise sensitive receptors. Noise sensitive receptors within 300m of the site boundary will be considered in this assessment. The identified receptors are shown in Figure 16: Noise Monitoring Locations. Assumed operation of the plant proposed is discussed

[98] Available at: Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise https://www.warrington.gov.uk/sites/default/files/2020-08/cf53_bs_5228_pt1-2009a1-2014.pdf and Part 2: Vibration https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2021/9/14/TG18-BSI-Code-of-practice-for-noise-and-vibration-control-on-construction-and-open-sites-Part2.pdf

[99] Available at: https://shop.bsigroup.com/products/methods-for-rating-and-assessing-industrial-and-commercial-sound/standard Accessed March 2022

in Section 14.5.

14.7.4. The assessment of likely significant effects will include the following scenarios:

- Daytime (0700 – 2300 hours) assessment of all energy storage and solar components in operation year-round;
- Night-time assessment of all energy storage and solar components in operation during the early morning hours (before 0700 hours) from March to September, i.e. during daylight; and
- Night-time (2300 – 0700 hours) assessment of energy storage components in operation year-round i.e. during darkness.

14.7.5. For each scenario, the Lowest Observed Adverse Effect Level ('LOAEL') and Significant Observed Adverse Effect Level ('SOAEL') criteria will be based upon the measured representative baseline background noise level at the relevant sensitive receptor. The predicted noise levels to be assessed will be the rating noise level (dB $L_{Ar,Tr}$), which is the specific level of the industrial plant to be installed (including solar generation plant, energy storage and any associated cooling equipment) plus any penalty corrections due to noise characteristics.

14.7.6. The LOAEL will be equal to the measured background sound level ($L_{A90,T}$) for each identified time period in the assessment.

14.7.7. The SOAEL will be equal to the measured background sound level ($L_{A90,T}$) for each identified time period in the assessment plus 5dB. This level will be determined to be the rating level noise limit.

14.7.8. The residential receptors within 300m of the site boundary will initially be considered to have a high sensitivity to noise and therefore all impacts of medium and high magnitude will initially be considered to be significant, with the final magnitude of impact based on context and professional judgement.

14.7.9. Where community uses are identified, such as churches and schools, these receptors will also typically be considered to be of high sensitivity. Other community uses for sports and recreation, or where any users would be transitory, may have a lower sensitivity. Where a lower sensitivity is considered, justification will be given.

14.7.10. An initial BS4142 assessment, pending further contextual assessment, of noise from the Proposed Development will be undertaken with the impact magnitude criteria given below:

- High: rating level 5dB or more above the rating level noise limit;
- Medium: rating level above the rating level noise limit;
- Low: rating level below the rating level noise limit; and
- Very Low: rating level 5dB or more below the rating level noise limit.

14.7.11. For a residential receptor, moderate and major effects from the Proposed Development would be significant.

14.7.12. However, following the initial assessment there is a requirement set out in BS4142 guidance to consider the noise impact in context, with reference to the absolute noise level of the sources and residual sound, character of the noise to be introduced and specific sensitivity of any receptor. The context in which the sound occurs could change the magnitude of any impact at sensitive receptors. Justification will be given for any changes to the magnitude of impact due to context.

14.7.13. In summary, noise during the construction and decommissioning phases have the potential to result in significant effects. Such effects may occur at sensitive receptors around the site and within 300m of the boundary or along routes used by construction traffic.

14.7.14. Noise during the operational phase has the potential to result in significant effects for sensitive receptors around the site and within 300m of the boundary.

14.8. Impacts Scoped Out of the Assessment

14.8.1. Vibration during the construction, operation and decommissioning phases will be scoped out. The reasons are discussed in Section 6.6.

14.8.2. Whilst the decommissioning is expected to be similar in scope and scale to the construction phase, without the requirement for piling, the uncertainty regarding future construction techniques, baseline noise levels and traffic flows would not allow for an appropriate assessment to be undertaken at this stage. It is therefore proposed to be scoped out of the assessment with the expectation that decommissioning will be appropriately considered against the prevailing noise levels and traffic flows of the time.

14.8.3. For an increase in traffic to result in a short-term magnitude of change that would be considered a significant noise effect, an increase of 3dB $L_{A10,18h}$ on baseline noise levels is required. In real terms, this is equivalent to a 100% increase in road traffic on an individual road link. Operational traffic generation for the Proposed Development is predicted to result in a maximum of 2 (two-way) vehicle movements per day for maintenance purposes. Such a low flow change would not be considered sufficient to result in a significant adverse effect and therefore an assessment of noise generated by the Proposed Development's operational traffic is proposed to be scoped out of the assessment of the Proposed Development’s likely significant noise effects.

14.9. Proposed Approach to PEIR and ES

14.9.1. The assessment will be undertaken using the following steps:

- Determination of study area and likely sensitive receptors;
- Baseline noise monitoring following agreed methodology;
- Noise modelling of the proposed site layout using data provided for proposed plant and traffic flows;
- Prediction of noise at sensitive receptors to determine magnitude of impact;
- Determination of significant effects;
- Implementation of potential mitigation;
- Re-assess magnitude of impact and subsequent residual significant effects;
- Production of PEIR chapter, ES chapter and associated appendices.

Table 14.1 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Existing residential receptors, community and leisure uses – Construction: On Site Noise Impact	Medium	Medium to High	Moderate to Major	Scoped In
Existing residential receptors, community and leisure uses – Construction: Off Site Traffic Noise Impact	Medium	Medium to High	Moderate to Major	Scoped In
Existing residential receptors, community and leisure uses – Construction: On Site Vibration Impact	Very Low	High	Minor	Scoped Out
Existing residential receptors, community and leisure uses – Operation: On Site Vibration Impact	Very Low	High	Minor	Scoped Out
Existing residential receptors, community and leisure uses – Operational: On Site Noise	Medium	Medium to	Moderate to Major	Scoped In

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Impact		High		
Existing residential receptors, community and leisure uses – Operational: Off Site Traffic Noise Impact	Very Low	High	Minor	Scoped Out
Existing residential receptors, community and leisure uses – Decommissioning: On Site Noise Impact	Uncertain	Medium to High	Uncertain	Scoped Out
Existing residential receptors, community and leisure uses - Decommissioning: Off Site Traffic Noise Impact	Uncertain	Medium to High	Uncertain	Scoped Out
Existing residential receptors, community and leisure uses – Decommissioning: On Site Vibration Impact	Very Low	High	Minor	Scoped Out

15. Climate Change

15.1. Introduction

15.1.1. An assessment of the likely significant effects of the Proposed Development with regards to climate change will be undertaken.

15.2. Planning Policy Context

15.2.1. Section 4.9 of Draft NPS EN-1 (2021) sets out matters concerned with climate change, stating (at paragraph 4.9.2) that *'Climate change is likely to mean that the UK will experience hotter, drier summers and warmer, wetter winters.... Adaptation is therefore necessary to deal with the potential impacts of these changes that are already happening. Renewable and low carbon development is an adaptive measure to address climate change'*. The draft NPS requires that the ES should set out how proposals will take account of the projected impacts of climate change, in accordance with the EIA Regulations and:

- *'The Secretary of State should be satisfied that applicants for new energy infrastructure have taken into account the potential impacts of climate change using the latest UK Climate Projections and associated research and expert guidance (such as the EA's Climate Change Allowances for Flood Risk Assessments) available at the time the ES was prepared to ensure they have identified appropriate mitigation or adaptation measures'* (paragraph 4.9.7);
- *'Applicants should assess the impacts on and from their proposed energy project across a range of climate change scenarios, in line with appropriate expert advice and guidance available at the time'* (paragraph 4.9.8);
- *'Applicants should be able to demonstrate that proposals have a high level of climate resilience built-in from the outset'* (paragraph 4.9.8); and
- *'Adaptation measures can be required to be implemented at the time of construction where necessary and appropriate to do so. However, where they are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment (for example coastal processes), the Secretary of*

State may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise, rather than at the outset of the development (for example increasing height of existing, or requiring new, sea walls)' (paragraph 4.9.13).

15.2.2. Draft NPS EN-3 (2021), at section 2.3, highlights the government's energy and climate change strategy, including policies for mitigating climate change. Applicants and the SoS should take into account a number of generic considerations to help ensure that renewable energy infrastructure is safe and resilient to climate change, and that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime (paragraph 2.3.1). Specifically for solar PV sites, Draft EN-3 states that:

- *'Solar PV sites may also be proposed in low lying exposed sites. For these proposals, applicants should consider, in particular, how plant will be resilient to:*
    - *increased risk of flooding*
    - *impact of higher temperatures'* (paragraph 2.3.4).

15.2.3. The following ABC Local Plan policies may also be relevant to the assessment:

- Policy ENV1 – Biodiversity;
- Policy ENV10 – Renewable and Low Carbon Energy;
- Policy ENV11 – Sustainable Design and Construction – Non-residential; and
- Policy ENV12 – Air Quality.

15.3. Study Area

15.3.1. The data available to allow an assessment of greenhouse gas ('GHG') emissions from vehicle movements associated with the Proposed Development is consistent with the study area of the Transport Assessment as set out in Section 13 (Traffic and Access) of this Scoping Report.

15.3.2. Given that climate change is a global issue, a qualitative assessment of the Proposed Development's effects is also made at the global scale, in line with IEMA

Guidance on assessing GHG emissions[100].

15.4. Baseline Environment

15.4.1. The Climate Change Act 2008[101] sets a legally binding target for reducing GHG emissions, in particular carbon dioxide (‘CO_2’), by at least 80% (on 1990 levels) by the year 2050 in the UK, and a requirement that domestic emissions are reduced by no less than 3% each year. This was updated in June 2021, where a 100% reduction in GHG emissions (‘net-zero’) is now to be achieved by 2050 (See Section 3 (Planning and Energy Policy Context) for full details).

15.4.2. In October 2017, the UK Government published its Clean Growth Strategy[102] (‘CGS’) setting out ambitious policies and proposals, to 2050, to reduce emissions across the economy and promote clean growth. The Clean Growth Strategy provides an ‘ambitious’ blueprint for Britain’s low carbon future, outlining how investment in green energy goes hand-in-hand with economic growth and industrial, commercial and residential strategies. Core to the strategy are actions that will cut emissions, increase efficiency and lower the amount consumers and businesses spend on energy.

15.4.3. In October 2021, the UK committed to decarbonise the electricity system by 2035 and secure a home-grown clean electricity supply[103]. These commitments brought forward the government’s original target of a fully decarbonised power system by 2050, as set out in the Energy White Paper[104] and emphasised the role of green technologies to deliver cleaner, cheaper power and create thousands of new high-skilled jobs in new industries across the UK. These commitments were reaffirmed in the British Energy Security Strategy (April 2022) which sets out the Government’s vision to deliver clean, affordable, secure energy to the UK over the long term.

[100] Available at: https://www.iema.net/resources/blog/2022/02/28/launch-of-the-updated-eia-guidance-on-assessing-ghg-emissions Accessed March 2022
[101] Available at: https://www.legislation.gov.uk/ukpga/2008/27/contents (as amended) Accessed March 2022
[102] Available at: https://www.gov.uk/government/publications/clean-growth-strategy Accessed March 2022
[103] Available at: https://firstbarton.sharepoint.com/sites/SGSDCO/Shared%20Documents/General/Department%20for%20Business,%20Energy%20and%20Industrial%20Strategy. Accessed March 2022
[104] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf Accessed March 2022

15.4.4. The EIA Regulations include a requirement for the assessment of development on the environment with relation to climate change (Schedule 4, paragraph 5(f)):

> *'A description of the likely significant effects of the development on the environment resulting from, inter alia …(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change.'*

15.4.5. KCC recognised the UK climate emergency in 2019 and committed to reducing GHG emissions for the whole county to net zero by 2050[105]. ABC committed to Ashford Borough becoming carbon neutral by 2030, with an 80% reduction by 2025[106]. FHDC declared a Climate Emergency[107] in 2019.

15.5. Project Basis for Scoping Assessment

15.5.1. Given the Proposed Development will be a generator of renewable electricity, it is possible that it could give rise to both adverse and beneficial likely significant effects.

15.5.2. Following IEMA Guidance[108], there are two main approaches which may be taken to determine a project's climate change impact, which involve identifying:

- The vulnerability of the Proposed Development to climate change (adaptation/ resilience); and
- The direct and indirect influence of the Proposed Development on climate change (mitigation).

15.5.3. The vulnerability of the Proposed Development to climate change considers likely significant effects on the Proposed Development as a receptor (this is referred to in IEMA Guidance (Climate Change Resilience and Adaptation (2020))[109]).

[105] Available at: https://www.kent.gov.uk/environment-waste-and-planning/climate-change/climate-emergency-statement Accessed March 2022
[106] Available at: https://www.ashford.gov.uk/environmental-concerns/carbon-neutral-agenda/ Accessed March 2022
[107] Available at: https://www.folkestone-hythe.gov.uk/article/1043/Climate-change Accessed March 2022
[108] Available at: https://www.iema.net/resources/blog/2022/02/28/launch-of-the-updated-eia-guidance-on-assessing-ghg-emissions Accessed March 2022
[109] Available at: IEMA: https://www.iema.net/resources/reading-room/2020/06/26/iema-eia-guide-to-climate-change-resilience-and-adaptation-2020 Accessed March 2022

15.6. Likely Significant Effects

15.6.1. A climate change risk and resilience assessment will be undertaken before the PEIR is produced to identify the potential risks of climate change to the Proposed Development and to set out design measures that have been incorporated into the Proposed Development to provide resilience and adaptation to climate hazards, such as extreme hot and cold weather, intense rainfall, high winds and storm events. An iterative approach will be taken to the assessment, whilst drawing upon and informing other reports prepared to support the DCO application, such as the FRA. The assessment will also draw upon the UK Climate Projections (UKCP 18) as the most comprehensive data set across the Proposed Development's operational phase (an operational lifespan of up to 40 years will be assumed for the purposes of the ES) to highlight key changes in weather conditions.

15.6.2. A quantitative, assumptions-based assessment of the direct effects of vehicular GHG emissions, in particular CO_2, will be undertaken. This will be done using the trip generation forecast from the traffic model and DEFRA's Emission Factors Toolkit ('EFT') v11. Given that the Proposed Development will principally create vehicle movements during its construction, rather than its operational phase, the assessment will focus on this phase. The Proposed Development's decommissioning phase is discussed in Section 15.7 below.

15.6.3. The assessment will provide the modelling of carbon emissions for vehicles during construction and operation as illustrative, as real-time carbon emissions associated with the Proposed Development are not available.

15.6.4. Owing to the nature of the Proposed Development as a renewable energy scheme, there will be carbon savings realised in terms of a reduction in CO_2 (and carbon dioxide equivalent ('CO2e')) than if the electricity was generated using fossil fuels through the UK's current energy mix. This carbon offset will be calculated using the carbon intensity of energy generation within the UK, with the significance of effect compared at both the 'Local' level (through the use of Local Authority CO2e emissions estimates within its administrative boundary) and at the 'National' level (through assessing the significance of effects in the context of the appropriate UK

Carbon Budget).

15.6.5. Accordingly, the Climate Change ES chapter will assess the effects of climate change on the Proposed Development and the effects of the Proposed Development on climate change by:

- Establishing the existing baseline conditions (2022);
- Determining future baseline conditions by reviewing climatic projections;
- Assessing the likely significant effects of the Proposed Development (alone and cumulatively) on the established baseline and future conditions. The judgement of significance will be based on professional judgment and the IEMA Guidance which states that whilst all GHG emissions are potentially significant due to cumulative effects, in order to ascertain and distinguish different levels of significance, a project's attribution of significance should consider '*whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050*'; and
- Identification of mitigation measures and following that the identification of residual effects.

15.6.6. UKCP18 climate change projections have inherent levels of uncertainty. As stated in page 68 of the UKCP18 Science Overview Report[110]:

> *'While the global and regional projections of future climate use the latest climate models and are diverse they cannot cover all potential future climate outcomes out to 2100 (or beyond in the case of sea level)…'*

15.6.7. The 21st century projections presented in this report are produced for the representative concentration pathways ('RCP')[111] climate change scenarios. The results are therefore subject to any inherent limitations of the assumed emissions scenarios including:

> *'The probabilities represent the relative strength of evidence supporting different plausible outcomes for UK climate, based on the climate models,*

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[110] Available at: https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Overview-report.pdf Accessed March 2022

[111] Available at: https://www.ipcc.ch/ Accessed March 2022

physical insight, observational evidence and statistical methodology used to produce them. However, they may not capture all possible future outcomes, because, for example, some potential influences on future climate are not yet understood well enough to be included in climate models.[112]'

15.7. Impacts Scoped Out of the Assessment

15.7.1. The assessment will not undertake an assessment of the decommissioning phase of the Proposed Development owing to uncertainties surrounding this phase, such as the negative externalities associated with the loss of renewable energy and the subsequent impact on the climate in terms of potential additional emissions for replacement energy on the grid (should this not come from renewable sources).

15.7.2. On the basis of professional judgement, and experience from other similar projects, likely significant effects on climate change resulting traffic movements generated during the Proposed Development's decommissioning phase are likely to be, at worst, no greater than the construction phase effects and considered to be too far in the future to be able to accurately predict traffic flows and related emissions. On this basis, an assessment of the Proposed Development's effects resulting from decommissioning phase traffic movements is proposed to be scoped out of the ES chapter.

15.7.3. The construction phase impact of the provision of renewable energy is scoped out of the assessment. This is because it is assumed that during the construction period, renewable energy is unlikely to be distributed to the national grid.

15.7.4. The construction phase impacts with regards to the vulnerability of the Proposed Development to climate change is also scoped out of the assessment. This is because it is assumed that climatic conditions are unlikely to change over the construction period and therefore an assessment is provided for when the Proposed Development is deemed operational.

[112] Available at: https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Overview-report.pdf, Page 68 - Accessed March 2022

15.8. Proposed Approach to PEIR and ES

15.8.1. The assessment will be undertaken using the following steps:

- Determination of the study area and likely sensitive receptors;
- Baseline assessment of current climatic conditions and the appropriate local and national carbon data sets (2022);
- Assessment of impacts for both climate change mitigation and climate change adaptation and resilience;
- Determination of significant effects;
- Implementation of any mitigation, if needed; and
- Assessment of residual significant effects.

Table 15.1 - Summary of Effects and Impacts

Receptor, Project Activity and Impact	Anticipated Magnitude	Anticipated importance / sensitivity	Likely Significance of effect at Scoping Stage (pre implementation of mitigation measures)	Proposed Approach – Scoped In / Scoped Out
Global Climate – Impact of carbon emissions associated with transport movements Construction and operational phase only. Decommissioning phase scoped out.	Low-Medium	High	Moderate Adverse	Scoped In
Global Climate – Impact of provision of renewable electricity Operational phase only. Construction and decommissioning phases scoped out.	High	High	Major Beneficial	Scoped In
Vulnerability of the Proposed Development to climate change (Adaptation) Operational phase only. Construction and decommissioning phases scoped out	High	Low	Moderate Adverse	Scoped in

16. Cumulative Effects

16.1. Introduction

16.1.1. The ES will consider the potential for likely significant cumulative effects on the environment. This will include:

- Intra-project effects, which are also known as interactive effects (those resulting from multiple impacts/aspects of the Proposed Development affecting a single receptor); and
- Inter-project effects (those resulting from the Proposed Development combined with other schemes in the area).

16.1.2. Intra-project effects require consideration of all completed technical assessments and therefore will be reported in the concluding chapter of the ES. Assessment will be qualitative, based on professional judgment following review of the conclusions of the technical assessments.

16.1.3. Inter-project effects will be considered under the 'Cumulative Effects' sub-heading in each topic chapter. A summary of the cumulative effects of the Proposed Development across all topics will also be provided as an ES chapter. Inter-project effects are defined in paragraph 5(e) of Schedule 4 to the EIA Regulations as:

> *'the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.'*

16.1.4. The best practice approach to cumulative schemes requires inclusion of proportionate information relating to projects that are not yet consented, dependent on the level of certainty of them coming forward. In this regard, the Inspectorate's *Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects*[113] is relevant to this Scoping Report.

[113] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/ Accessed March 2022

16.2. Cumulative Scheme

16.2.1. Table 16.1 below details a single project that has been identified for the assessment of likely significant cumulative effects on the environment for the purposes of this ES. The information contained within Table 16.1 is based upon information available on ABC's website[114] and it is acknowledged that this may change as the scheme progresses. The final list of cumulative schemes will be agreed with ABC and KCC prior to completion of the ES.

Table 16.1 Cumulative Scheme

Project Reference	Description	Status	Distance
Land south of M20 and south of railway line to the east and west of, Church Lane, Aldington Planning Reference: 21/00002/EIA/AS	EIA Screening Opinion for proposed solar farm with a generating capacity of up to 49.9MW	EIA Screening Opinion stated proposals constitute EIA development. A planning application has not yet been submitted.	Adjacent to the north-east of the site

[114] Available at: www.ashford.gov.uk Accessed on 23 February 2022.

17. Conclusions

17.1.1. This Scoping Report has been prepared in support of a request pursuant to Regulation 10 of the EIA Regulations for a Scoping Opinion from the Inspectorate (on behalf of the SoS) on the scope, and level of detail, of the information to be provided in the ES which will accompany a DCO application for the construction, operation and maintenance, and decommissioning of a renewable energy generating project. This Scoping Report has been produced in accordance with the EIA Regulations and other guidance documents. It includes the information required by Regulation 10(3) as follows:

- A plan sufficient to identify the land (see Figure 2);
- A description of the Proposed Development, including its location and technical capacity (see Sections 1 and 4);
- An explanation of the likely significant effects of the Proposed Development on the environment (see Sections 8 to 16); and
- Such other information or representations as the person making the request may wish to provide or make (see Figures 1 to 16 and Appendices 1 to 5).

17.1.2. This scoping exercise has been informed by desk-based research, professional judgement and other information available for the site. It sets out those environmental topic areas that have been identified to be ‘scoped out’ of the ES, together with the reasoned justification for the approach proposed. These topics include:

- Agricultural Land and Soils;
- Air Quality;
- Land Contamination;
- Human Health (in part);
- Vibration;
- Major Accidents and Disasters (in part);
- Electric, Magnetic and Electromagnetic Fields;

- Telecommunications, Television Reception and Utilities;
- Wind Microclimate;
- Daylight, Sunlight and Overshadowing;
- Glint and Glare;
- Lighting (in part);
- Minerals; and
- Waste.

17.1.3. In terms of the topic areas that are proposed to be 'scoped in' to the EIA (either in part or in full), these are identified in Sections 8 to 15 of this report and include the following:

Table 17.1 Proposed Scope of EIA

Topics	Proposed ES Approach
Cultural Heritage	Chapter to be prepared (see Section 8 for scope)
Landscape and Views	Chapter to be prepared (see Section 9 for scope)
Biodiversity	Chapter to be prepared (see Section 10 for scope)
Water Environment	Chapter to be prepared (see Section 11 for scope)
Socio-economics	Chapter to be prepared (see Section 12 for scope)
Traffic and Access	Chapter to be prepared (see Section 13 for scope)
Noise	Chapter to be prepared (see Section 14 for scope)
Climate Change	Chapter to be prepared (see Section 15 for scope)
Human Health	Separate topic chapter scoped out of the ES (topic considered in Traffic and Access and Noise ES chapters)
Major Accidents and Disasters	Separate topic chapter scoped out of the ES (topic considered in Water Environment, Climate Change, Traffic and Access and Landscape and Views ES

Topics	Proposed ES Approach
	chapters)
Lighting	Separate topic chapter scoped out of the ES (topic to be considered in Biodiversity and Landscape and Views ES chapters)

17.1.4. Following the completion of the surveys, assessments and consultation processes outlined in this Scoping Report, an application for a DCO for the Stonestreet Green Solar development will be made to the Inspectorate on behalf of the SoS for determination in accordance with the PA2008. The application will include an ES prepared in accordance with the Scoping Opinion received from the SoS and informed by the feedback received from consultees.

Stonestreet Green Solar

Environmental Impact Assessment Scoping Report

Appendix 1: Agricultural Land Classification Report

Planning Inspectorate Reference EN010135

April 2022

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

EVOLUTION POWER LIMITED

Stonestreet Green Solar

Soils and Agricultural Land

April 2022

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EVOLUTION POWER LIMITED

Stonestreet Green Solar

Soils and Agricultural Land

April 2022

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

CONTENTS

PHOTOGRAPHS

TABLES

PLATES

APPENDICES

DRAWINGS

1 INTRODUCTION

1.1 Background

1.1.1 Wardell Armstrong LLP (WA) has been commissioned by Evolution Power Limited to undertake a detailed Soil and Agricultural Land Classification (ALC) survey on agricultural land (comprising of 189.12 ha total) located predominantly to the North and West of Aldington, Kent (the Site) in relation to a proposed solar farm development that is seeking a development consent order from the secretary of state.

1.2 Site Description

1.2.1 The Site is located on land associated with Bank Farm, Aldington, Kent, with the approximate national grid reference 605976 E 137658 N and is situated within the administrative area of Ashford Borough Council (ABC). The Site comprises of arable land and pasture. The High Speed 1 (HS1) / Channel Tunnel Rail Link traverses the north-eastern boundary of the Site, with the East Stour River flowing in an east to west direction within, and adjacent to, the northern part of the Site. Topographically, the Site is lowest at c. 45m AOD within the north-east and is highest within the south-east at c.61m AOD. Land located in the central region of the Site slopes towards the East Stour River in the north, where it plateaus as proximity to the river lessens. The parcel of land in the south eastern part of the Site, which is separated from the main part of the Site, has a small watercourse running through north to south with undulating land in the south of the parcel.

Photograph 1: Typical overview within the Site.

1.3 Definitions

1.3.1 The **Agricultural Land Classification** (ALC) was devised by MAFF (1988)[1] and is the standard method for determining the quality of agricultural land in England and Wales according to its versatility, productivity and workability, based upon inter-related parameters including climate, relief, soil characteristics and drainage, i.e. ALC assesses land quality based upon the type and level of agricultural production the land can potentially support. The ALC places land into one of five grades: Grade 1 (excellent); Grade 2 (very good); Grade 3 (good to moderate) which is divided into Subgrades 3a (good) and 3b (moderate); Grade 4 (poor); and Grade 5 (very poor).

1.3.2 **Best and most versatile** (BMV) agricultural land is defined as land of excellent to good agricultural quality (ALC Grades 1, 2 and Subgrade 3a) and is afforded a degree of protection in the National Planning Policy Framework (NPPF), 2021[2].

1.3.3 **Soil series** are the lowest category in the soil classification system and are precisely defined based upon particle-size distribution, parent material (substrate) type, colour, and mineralogical characteristics. **Soil Associations** are groupings of related soil series.

[1] MAFF (1988). The Agricultural Land Classification (ALC) of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.
[2] Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework (NPPF). Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/740441/National_Planning_Policy_Framework_web_accessible_version.pdf.

2 LEGISLATION, POLICY, AND GUIDANCE

2.1 Legislation

2.1.1 Natural England is a Statutory Consultee listed within Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009[3] and, as such, must be consulted in relation to '*all proposed applications likely to affect land in England*'. Natural England will, therefore, be consulted on the Proposed Development.

2.1.2 In addition to this, Schedule 4 paragraph (yi)[4] of The Town & Country Planning (Development Management Procedure) (England) Order 2015 specifically relates to the loss of agricultural land and states that a local planning authority must consult Natural England if the area of a proposed permanent development exceeds 20 ha of Best and Most Versatile (BMV) agricultural land.

2.1.3 Whilst The Town & Country Planning (Development Management Procedure) (England) Order does not award any legislative protection for agricultural land, it provides context to the scale of loss of agricultural land to development (either through the land being given over to built development or undergoing a permanent change in use) and serves as a guide to consider significance where 20 ha or more of BMV is affected.

2.2 National Policy Statements

2.2.1 The latest Draft National Policy Statement (NPS) for Renewable Energy Infrastructure (EN-3)[5] (2021) also refer to agricultural land / land use change. Within paragraphs 2.48.13 to 2.48.15, NPS EN-3 states that development should *'utilise previously developed land, brownfield land, contaminated land, industrial land or agricultural land of classification 3b, 4, and 5'*, but that '*land type should not be a predominating factor in determining the suitability of a site location'* and '*the development of ground mounted solar arrays is not prohibited on sites of agricultural land classified 1, 2 and 3a'*.

[3] The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations (2009). Available at: https://www.legislation.gov.uk/uksi/2009/2264/contents/made.
[4] HM Government (2015). Statutory Instrument 2015 No. 595, The Town and Country Planning (Development Management Procedure) (England) Order 2015. Available at https://www.legislation.gov.uk/uksi/2015/595/contents/made.
[5] Draft National Policy Statement for Renewable Energy (EN-3) (2021). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf

2.3 National Planning Policy

2.3.1 Under Section 15 of the NPPF 2021: Conserving and enhancing the natural environment, Paragraph 174 states that 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;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

2.3.2 The footnote to Paragraph 175 states 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'.*

2.3.3 The Planning Practice Guidance (PPG) which accompanies the NPPF is split into a number of guidance notes. Guidance on soils and agricultural land is found in the Planning Practice Guidance for the Natural Environment 2019 (PPGNE)[6] under the heading Agricultural Land, Soil and Brownfield Land of Environmental Value. This advises that the ALC be used to assess the quality of farmland to enable informed choices to be made about its future use within the planning system; and explains that the ALC places agricultural land into five grades with Grade 3 subdivided into 3a and 3b. The BMV land is defined as Grades 1, 2 and 3a. The PPGNE states that 'Planning policies and decisions should take account of the economic and other benefits of the

[6] Planning Practice Guidance for the Natural Environment 2021 (PPGNE) Available at: https://www.gov.uk/guidance/natural-environment.

best and most versatile agricultural land'.

2.3.4 The PPGNE goes on to state that *'In the circumstances set out in Schedule 4 paragraph (y) of the Development Management Procedure Order 2015, Natural England is a statutory consultee: a local planning authority must consult Natural England before granting planning permission for large-scale non-agricultural development on best and most versatile land that is not in accord with the development plan'* and refers to Natural England guidance to assessing development proposals on agricultural land, 2018[7].

2.3.5 Therefore, knowledge of the ALC grading of the Site, is necessary to be able to determine whether the requirements of planning policy are being met.

2.3.6 The PPGNE also recognises soil as an essential natural capital asset that provides important ecosystem services, 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. It also recommends Defra's Code of Practice for the Sustainable Use of Soils on Construction Sites[8] as a useful tool when setting planning conditions for development sites, as it provides advice on the use and protection of soil in construction projects, including the movement and management of soil resources.

2.4 Local Planning Policy

2.4.1 Current planning policy for Ashford Borough is set out in The Ashford Borough Local Plan 2030[9], which was adopted in 2019.

2.4.2 Part a of Policy SP1: Strategic Objectives states that '*to deliver the 'Vision' [for Ashford Borough in 2030], a number of strategic objectives have been identified. They form the basis of this Local Plan's policy framework, as well as providing the core principles that planning applications are expected to adhere to. a) To focus development at accessible and sustainable locations which utilise existing infrastructure, facilities and services wherever possible and makes best use of suitable brownfield opportunities'*. Appendix

[7] Natural England (2018). Guide to Assessing Development Proposals on Agricultural Land. Available at: https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land.
[8] Defra (2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf.
[9] Ashford Borough Council (2019). Ashford Local Plan 2030. Available at: https://www.ashford.gov.uk/media/jw3nbvq1/adopted-ashford-local-plan-2030.pdf.

6: Monitoring Framework lists '*the amount of high-grade agricultural land (Grade 1 & 2) lost to development (ha). Major sites only'* as an indicator of whether Policy SP1 Part A is being met, with major sites being defined as '*Major residential developments are those of 10 dwellings or more or over 0.5 ha'.* The Ashford Borough Local Plan seeks to monitor the amount of Grade 1 and 2 agricultural land lost to major residential development. It is noted that this is a different approach to Draft National Policy Statement EN-3, which identifies Grades 1, 2, and Subgrade 3a as BMV land rather than Grades 1 and 2, only. It is assumed that this is due to the prevalence of Subgrade 3a land within the Ashford Borough area, the avoidance of which would hamper the development proposed by the Ashford Borough Plan.

2.4.3 The Local Plan also references the NPPF including the following in the introduction to Chapter 9: Natural and Built Environment *'The conserving and enhancing of the natural environment is one of the 'core planning principles' of the NPPF (para 17). It encourages (para 109) the protection and enhancement of valued landscapes, geological conservation interests and soils. It also seeks to minimise the impact on biodiversity and encourages net gains in biodiversity through the establishment of coherent ecological networks wherever possible'*.

2.4.4 It is noted that in quoting paragraph 109 of the NPPF, the Local Plan is referencing a previous version of the NPPF from 2012, which was current at the time the Local Plan was adopted, but the commitment to the protection and enhancement of soils remains valid.

2.4.5 In Section 9, the subsection 'Standalone Renewable and Low Carbon Energy Generation' also points to the 2012 version PPG that was current at the time the Local Plan was issued highlighting the need to focus large scale solar farms on previously developed land and non-agricultural land, and as a last resort, on low grade agricultural land. However, the related Policy ENV10 part a) simply states that *'Planning applications for proposals to generate energy from renewable and low carbon sources will be permitted provided that:*

a) The development, either individually or cumulatively does not result in significant adverse impacts on the landscape, natural assets or historic assets, having special regard to nationally recognised designations and their setting, such as AONBs, Conservation Areas and Listed Buildings'.

2.4.6 It is assumed that soils and agricultural land are therefore classed as 'natural assets' in this case.

2.5 Guidance

2.5.1 The applicable guidance in relation to soils and agricultural land is summarised as follows:

- HM Government (2019). Planning Practice Guidance for the Natural Environment.
- Natural England, (2009). Technical Information Note 049 (TIN049): Agricultural Land Classification: Protecting the Best and Most Versatile Agricultural Land[10].
- Natural England (2018). Guide to Assessing Development Proposals on Agricultural Land.
- Defra (2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
- MAFF (1988). The Agricultural Land Classification (ALC) of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.

[10] Natural England, (2009). Technical Information Note 049 (TIN049): Agricultural Land Classification: Protecting the Best and Most Versatile Agricultural Land. Available at: https://www.iow.gov.uk/azservices/documents/2782-FE14-Natural-England-TIN049-Agricultural-Land-Classification.pdf.

3 METHODOLOGY

3.1 Desk Study

3.1.1 Information about the soils and agricultural land present within the Site was obtained from the following published sources:

- MAFF (1993). 1:250,000 'Provisional Agricultural Land Classification Sheet, London and the South East'[11].
- Met Office (1989). Climatological Data for Agricultural Land Classification (ALC): Grid point datasets of climatic variables at 5 km intervals for England and Wales[12].
- Soil Survey of England and Wales (1984) Soils and their Use in South East England, with accompanying 1: 250,000 map, Sheet 2[13].
- OS (2021) Terrain 5 Digital Terrain Modelling[14].
- Multi-Agency Geographical Information for the Countryside (MAGIC)[15].
- Google Maps including Streetview[16].
- Munsell (2010) Colour Charts[17].
- Cranfield University (2015). Research to develop the evidence base on soil erosion and water use in agriculture[18].

3.2 Site Survey

3.2.1 A detailed soil survey was undertaken at the Site between the 29th November and 15th December 2021 by three experienced and competent soil surveyors using augered soil cores and soil profile pits. Auger cores were taken using a 70 mm diameter hand-held Edelman auger, capable of sampling to a maximum depth of 120 cm; the soil profile pits were excavated, using a spade, to a maximum depth of approximately 100cm,

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[11] MAFF (1993). 1:250,000 Provisional Agricultural Land Classification Sheet, London and the South East. Available at: https://data.gov.uk/dataset/952421ec-da63-4569-817d-4d6399df40a1/provisional-agricultural-land-classification-alc.
[12] Met Office (1989) Climatological Data for Agricultural Land Classification (ALC): Grid point datasets of climatic variables at 5km intervals for England and Wales. Available at: https://data.gov.uk/dataset/8a334958-ff65-4f5c-9674-5a85e61ee269/climatological-data-for-agricultural-land-classification.
[13] Soil Survey of England and Wales (1984) Soils and their Use in South East England, with accompanying 1: 250,000 map, Sheet 2. These data are not available online.
[14] OS Terrain 5. Available at: https://www.ordnancesurvey.co.uk/business-government/products/terrain-5.
[15] HM Government. Multi-Agency Geographical Information for the Countryside (MAGIC). Available at: www.magic.gov.uk
[16] Google Maps (©2021). Available at: https://www.google.co.uk/maps/.
[17] Munsell Colour (2010). Munsell Soil Colour Charts.
[18] Cranfield University (2015). 'Research to develop the evidence base on soil erosion and water use in agriculture: Final Technical Report. pp147' Available at https://www.theccc.org.uk/wp-content/uploads/2015/06/Cranfield-University-for-the-ASC.pdf.

sufficient to evaluate the full soil profile.

3.2.2 During the survey, both auger cores and profile pit faces were assessed for horizon depth, texture, colour (Munsell System), mottling, biopores, stoniness, structure and consistency in line with the MAFF 1988 ALC guidelines.

3.2.3 The survey points were distributed evenly across the Site, giving a survey density of 185 survey points across the 178.43 ha of surveyed agricultural land, deemed sufficient to accurately assess the soils on Site and giving an approximate survey density of one point per hectare as per standard methodology and guidance. Soils were mapped on an approximate 100 m grid with precise sample points adapted in the field to best capture data for locations where geomorphological, biological or land use features indicated a likely change in soil type; and avoiding features such as hedgerows and tracks.

3.2.4 The purpose of the survey was to provide details of soil profile characteristics and to inform the ALC assessment.

3.2.5 Soil texture is often the deciding factor in relation to ALC grading. Therefore, although good estimations of texture (based on relative percentage content of clay, sand, and silt) can be determined by field analysis, to confirm the soil texture and inform soil quality across the Site, 33x soil samples were sent for particle size distribution textural analysis by NRM Laboratories (a subsidiary of Cawood Scientific), accredited by UKAS to the internationally recognised standard for competence; ISO/IEC 17025[19]. Provision of such analysis is considered to be best practice. The results are included in Appendix 2: Soil Texture Laboratory Results and summarised later in this report.

3.2.6 Following the completion of the survey, an extension to the Site boundary was made (4.17 ha, 2.2% of the total Site area) and therefore this section was un-surveyed. This area is shown below, and in drawing GM12014/002 Agricultural Land Classification Map.

[19] ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories. Available at: https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100424.pdf.

Plate 1: Extension to Site Boundary (un-surveyed area to the right-hand-side of the blue bar) (©Google Earth).

4 DESK STUDY

4.1 Introduction

4.1.1 Soil series are the lowest category in the soil classification system and are precisely defined based upon particle-size distribution, parent material (substrate) type, colour and mineralogical characteristics. However, the soils mapping provided by the Soil Survey of England and Wales describes Soil Associations, which are groupings of related soil series. Additionally, the scale of the mapping is such that it is not accurate to the field level and does not pick up small-scale local variations in soil type. The mapping therefore provides a general indication of the soil types likely to be present within the Site and the wider area.

4.1.2 The Soil Survey of England and Wales indicates there are two soil associations present within the Site, the Wickham 1 (711e) and Fladbury 3 (813d) association. A summary of the characteristics of these soil associations is provided in Table 1.

4.1.3 Soil erodibility, as presented in Table 1 is a measure of the susceptibility of soils to loss both *in-situ* (i.e., as an undisturbed soil profile) and during soil stockpiling, due to wind or water erosion (natural erosion potential). As a rule, heavy (clay rich) soils are classified as being at low risk of erosion whilst light sandy soils are classified as high risk of erosion.

4.1.4 However, it is important to note that soils of differing texture and structural development may be subject to a range of potential impacts during and following handling and reinstatement. For example, the incorrect handling/reinstatement of a heavy (clay rich) soil whilst in a plastic state may result in a reinstated soil profile with a reduced natural drainage compared to the natural soil profile and a subsequent increased risk of soil loss (erosion) due to surface water run-off. Whereas the permeable nature of light sandy soils means that the natural structural recovery and drainage potential of the soils is more easily maintained upon reinstatement.

Table 1: Characteristics of Soils at the Site*

Soil association	Constituent soil series	Geology	Soil type	Soil characteristics	Wetness class	Erodibility**
Wickham 1 (711e)	Wickham Denchworth Dale Oxpastures	Drift over Cretaceous clay or mudstone	Slowly permeable seasonally wet slightly acid, but base-rich loamy and clayey soils	Slowly permeable seasonally waterlogged fine silty over clayey, fine loamy over clayey and clayey soils.	Wickham, Denchworth and Dale series have slowly permeable subsoils and are waterlogged for long periods in winter (Wetness Class IV) when undrained. Field drainage measures achieve some improvement, (Wetness Class III or IV)	Small risk of water erosion
Fladbury 3 (813d)	Fladbury Conway Enborne	River Alluvium	Loamy and clayey floodplain soils with naturally high groundwater	Stoneless clayey, fine silty and fine loamy soils affected by groundwater. Flat land. Risk of flooding	waterlogged for long periods in winter (Wetness Class IV). improved field drainage measures can result in (Wetness Class III)	Very Small Risk of water erosion

*Data sourced from: Soil Survey of England and Wales (1984). Soils and their Use in South East England.
** Cranfield University (2015)

4.2 Agricultural Land Classification

4.2.1 The most detailed published ALC data covering the Site is the Provisional 1:250,000 ALC mapping. As with the soils data, the scale of the mapping is not accurate at the field level, as it does not pick up variations in ALC grade for areas less than approximately 80 ha; however, it does provide an indication of the predominant ALC grading in the wider area. Additionally, the mapping does not provide a subdivision of Grade 3 into Subgrade 3a (BMV) and Subgrade 3b (non-BMV) and so cannot be used to identify the likely amount of BMV land within the Site. The mapping indicates that all agricultural land within the Site is of, or has the potential to be, BMV quality (Grade 2, very good quality and Grade 3, good/moderate quality).

4.2.2 The Provisional ALC mapping for the administrative area of Ashford Borough Council is shown in Plate 2. This shows the majority of land within the Borough to be Grade 3 (potential of BMV) and Grade 2 land. Therefore, the majority of the agricultural land within the Borough is classed as being of BMV quality or of having the potential to be of BMV quality.

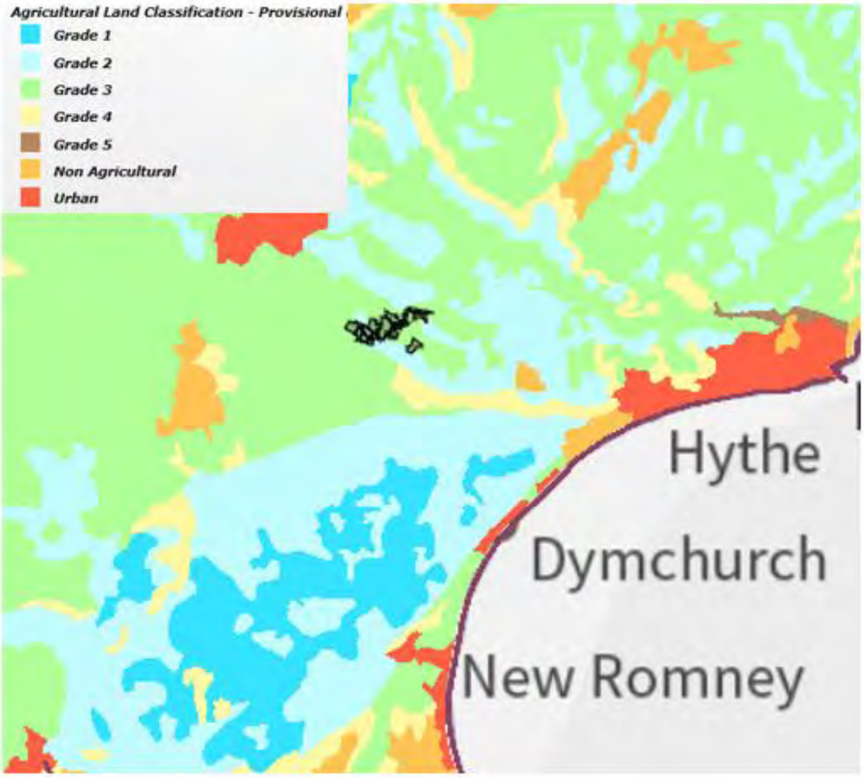

Plate2: Provisional Agricultural Land Classification in the wider Ashford Borough, reproduced from MAGIC. The Site boundary is outlined in black).

5 SITE SURVEY

5.1 Soils

5.1.1 The ALC survey confirmed the presence of the Denchworth, Oxpasture and Fladbury soil series within the Site. These soils series are heavy textured (clayey) soils with impeded drainage, influencing the overall ALC grade. A detailed description of the specific soil profiles observed within the Site are described in Appendix 1: Soil Survey Record and Agricultural Land Classification. A summary is provided below.

Denchworth

5.1.2 The Topsoil is typically a dark greyish medium to heavy clay loam that is very slightly stony. It had a fine weak subangular blocky structure and of moderate consistency. It extended to an average depth of c. 26 cm.

5.1.3 The upper subsoil is a grey, ochreous mottled heavy clay loam. It is medium subangular blocky in structure and extended to an average depth of c. 62 cm.

5.1.4 The lower subsoil is a grey, mottled stoneless clay loam with a weak coarse prismatic structure extended to an approximate minimum depth of c. 120 cm. The laboratory results for Particle Size Distribution (PSD) confirmed the results of the manual in-field texturing (Appendix 2).

Photograph 2: Typical Denchworth soil series located across the Site.

Oxpasture

5.1.5 The very slightly stony, dark brown topsoils of the Oxpasture series were identified by manual in-field texturing as clay to heavy clay loams; which was supported by the PSD analysis (Appendix 2). All sample points displayed a fine subangular blocky structure and had a moderate friable consistency. The topsoil horizon reached typical depths of c. 31 cm.

5.1.6 The upper subsoil was a yellowish to strong brown slightly stony clay loam. It had a moderate medium subangular blocky structure and had typical depths of c. 65 cm. The lower subsoil was a light yellowish brown containing up to 40% mottles which was stoneless and had a clay loam texture. The structure was medium subangular blocky or prismatic. The depths reached minimum depths of c. 120 cm.

Photograph 3: Typical Oxpasture soil located across the Site.

Fladbury

5.1.7 The Flabury soil series on the Site consisted of heavy clay loam texture. The topsoil had a subangular blocky structure; and was moderately developed and had a fine to medium ped size. The average depth was 35 cm.

5.1.8 The upper subsoil displayed substantial gleying indicating impeded draining and slow permeability. The structure was prismatic and had very firm consistency. Average depth was 59 cm.

5.1.9 Typically, the lower subsoil had a course ped size, very firm consistency and a prismatic structure. The soil was strongly developed with clear evidence of gleying and was slowly permeable and reached a minimum depth of 120 cm.

Photograph 4: Typical Fladbury soil located at the Site.

5.2 Agroclimatic Data

5.2.1 Agroclimatic data were taken from the nearest meteorological stations and interpolated to obtain site specific values (Table 2). This was then used to establish whether the agricultural land quality of the Site is limited by climate and, in conjunction with soil profile characteristics, wetness and droughtiness. It was found that independently climate posed no limitation to ALC grade.

Table 2: Interpolated agroclimatic data for the Site.

Average annual rainfall (mm)	742
Accumulated Temperature (^{0}C)	1449
Field Capacity Duration (FCD) (days)	153
Moisture Deficit Wheat (mm)	118
Moisture Deficit Potatoes (mm)	113

5.3 Direct Limitations

5.3.1 There are no Site limitations to agricultural land quality due to the combination of average annual rainfall and accumulated temperature.

5.3.2 There are no Site limitations to agricultural land quality because of gradient, micro-relief and summer or winter flood risk.

5.3.3 There are no Site limitations to agricultural land quality because of topsoil texture or soil depth.

5.3.4 At survey points 78, 95, and 96, topsoil stoniness limited the ALC grade to Grade 2, and at survey point 97, topsoil stoniness limited ALC grade to Subgrade 3a.

5.4 Interactive ALC Limitations

5.4.1 The Site is limited by climate and more specifically the combination of wetness and droughtiness to Grade 2, Subgrades 3a, and Subgrade 3b. Wetness is a result of the depth of the slowly permeable layer causing moisture to accumulate and consequently resulting in waterlogging during wetter months, hindering full yield potential throughout the growing season. Droughtiness is a result of the inadequate supply of soil moisture being available in hotter months, the ground conditions at the Site would be expected to shrink and crack due to the heavy textured clay soils present. Droughtiness calculations are shown in Appendix 3.

5.5 Overall ALC

5.5.1 The predominant ALC grading within the Site is Subgrade 3b (142.01 ha), with the remaining agricultural land comprising Subgrade 3a land (34.47 ha) and Grade 2 land

(1.95 ha). The total area of BMV land within Site is 36.42 ha. The remaining areas within the Site boundary comprises a small area of non-agricultural land consisting of existing farm buildings, woodland, watercourses and roads (6.52 ha). Following completion of the survey the Site boundary was extended with the additional small areas of agricultural land designated as 'Not Surveyed'. The distribution of ALC gradings within the Site is shown in Drawing GM12014/002 Agricultural Land Classification[20], and a summary is provided in Table 3.

Table 3: Summary of ALC within the Site Boundary.

ALC or other land category	Area (ha)	Percentage %
Grade 2 (very good)	1.95	1.03
Subgrade 3a (good)	34.47	18.22
Subgrade 3b (moderate)	142.01	75.08
Non-agricultural	6.52	3.44
Not Surveyed	4.17	2.20
Total	**189.12**	**100%**

5.5.2 The main differentiating factor between Subgrade 3a and Subgrade 3b classifications was the depth to the slowly permeable layer, giving rise to different wetness classes. This is predominantly due to the change in relief of the land and subsequent water shedding causing variable groundwater fluctuations across the Site, i.e. the Grade 2 and subgrade 3a areas are higher in elevation and have slopes that shed the water more easily, as opposed to the areas of Subgrade 3b, which are lower lying and will shed water less readily.

[20] NB – To avoid potential confusion, it should be noted that the points illustrated on the drawing are not numbered sequentially, but they are correct and match the data within Appendix 1 and 3.

6 CONCLUSION

6.1.1 The soil survey found the soils within the Site to be dominated by heavy and medium clay soils. Topsoils were generally stoneless to slightly stony in isolated regions. The upper subsoil and lower subsoil displayed mottling throughout the Site with the consistency becoming firmer at depth.

6.1.2 The Provisional ALC mapping[9] identified the agricultural land within the Site as ALC Grade 2 (very good quality) and Grade 3 (moderate/good quality). The detailed ALC survey confirmed the actual grading of the agricultural land within the Site to be predominantly non-BMV quality land (142.01 ha, 75.08%) comprising ALC Subgrade 3b; with smaller areas of BMV quality land (36.42 ha or 19.25%) comprising ALC Grade 2 and Subgrade 3a; and a small area of not surveyed agricultural land in the area of the cable route (4.17 ha, 2.20 %). The remaining land within the Site boundary being non-agricultural land (6.52 ha, 6.07%). The main limitation to ALC grading was wetness and droughtiness.

6.1.3 National planning policy states a preference for development of non-agricultural land over agricultural land, and when unavoidable, for development of agricultural land to be directed towards land of the lowest available quality. In accordance with relevant policy and guidance, the Applicant has sought to avoid the use of BMV land where possible, with preference given to the use of land in areas of poorer quality. Whilst land type has not been a predominating factor in determining the suitability of the site, it has taken into account ALC as part of the site selection process. Most land within Ashford Borough is provisionally mapped as Grade 3 (potential of BMV) with areas of "high grade" Grade 1 and Grade 2 BMV land. Locating the project elsewhere in the Borough is likely to incur a similar, if not greater, impact on BMV land.

6.1.4 Most land within the Borough is Provisionally mapped as Grade 3 (potential of BMV) with areas of 'high grade' Grade 1 and Grade 2 land (BMV) land and discrete patches of Grade 4 (non-BMV) (Plate 1). Therefore, relocating the Proposed Development elsewhere within the Borough could lead to a similar area of BMV land or a greater proportion of BMV land lying within the Site boundary.

6.1.5 The nature of the Proposed Development (a solar farm) is such that it provides potential for the land beneath and around the solar panels to continue in, albeit altered, agricultural use during the Proposed Development's operational lifetime, with potential for agricultural grazing still possible. Therefore, this land would only be temporarily removed from agricultural use during the construction period, returning to agricultural use in the operational phase, and resulting in minimal loss of/or disturbance to continued agricultural land use. Grazing of the Site is dependent upon demand and on other required aspects of the site design as agreed through planning, such as the alternative use of the land for biodiversity and nature conservation.

6.1.6 Approximately 50% of land within the Site would be covered by the solar arrays, which would be piled directly into the ground without prior soil removal. The only potential requirement for the stripping, temporary stockpiling or storage of topsoil would be associated with the construction of any required access tracks, control plant, substations and cabins (referred to here as 'built infrastructure'), this is estimated to be < 5 % of the site total area. Incorrect handling and storage of soils has the potential to lead to the loss of, or damage to soil resources. The traffic movements required during construction and decommissioning may also cause short-term damage to the soil through compaction or erosion. It is assumed that standard good practice soil management measures, such as those set out in Defra guidance for the sustainable use of soils on construction sites[8], would be adopted to ensure that the levels of loss and damage are minimised. This would ensure compliance with local and national planning policy regarding the protection and sustainable use of soil resources with mitigation for construction impacts being outlined in the Construction and Environment Management Plan and mitigation for decommissioning impacts being outlined in the Decommissioning Environmental Management Plan.

6.1.7 The areas beneath 'built infrastructure' would be restored back to agricultural use as part of the decommissioning of the Proposed Development. Therefore, this loss is longer-term, but also temporary.

6.1.8 Permanent grassland cover for the lifetime of the Proposed Development would be beneficial to the soil structure, as it would protect the soil from wind erosion when dry; scour erosion due to runoff from the PV panels; and damage from trafficking and surface water runoff during wet periods (traversing wet soil must be avoided).

6.1.9 If the Proposed Development was to go ahead, the clayey soils identified within the Site are at small risk of erosion[18] during stockpiling, and will require appropriate handling, and reinstatement in line with industry best practice guidance. Importantly, care must be taken to handle these soils when sufficiently dry as, in a wettened state (above the plastic limit) they are more susceptible to damage.

Appendix 1: Soil Survey Record and Agricultural Land Classification

APPENDIX 1: SOIL SURVEY RECORD AND AGRICULTURAL LAND CLASSIFICATION

Legend for non-self-explanatory terms:

Horizons - number of different horizons identified within the profile
Type - type of sample, auger core or soil profile pit dug using a spade
Depth - depth to the bottom of the (horizon number) horizon in cm
Texture - C - clay, ZC - silty clay, SC - sandy clay, CL - clay loam, SCL - sandy clay loam, ZCL - silty clay loam, SL - sandy loam, LS - loamy sand, S - sand;
CL and ZCL textures are subdivided into medium (M) and heavy (H) classes according to clay content, as follows: M medium (less than 27 % clay), H heavy (27-35 % clay); F, M and C refer to fine, medium and coarse, respectively, and are subdivisions of S, LS, SL, and SZL textures; O - organic, P - peat or peaty, HP - humified (highly decomposed peat), FP - fibrous peat, SFP - semi-fibrous peat; MZ - marine light silts
Matrix (main) colour - dominant colour of the soil; **Hue** - Munsell colour hue; **Value** - Munsell colour value; **Chroma** - Munsell colour chroma
Mottling - spots and blotches of different colour than the dominant matrix colour
Ped faces - surfaces of the primary soil fragments into which the soil naturally breaks up upon excavating
FeMn - ferri-manganifeours concertions
Biopores - 'yes' if >0.5 % biopores greater than 0.5 mm diameter present (by area)
Stones > 2 cm up to % - maximum percentage of 2 - 6 cm diameter stones
Stones > 6 cm up to % - maximum percentage of > 6 cm diameter stones
Type - H - All hard rocks or stones (those which cannot be scratched with a finger nail); SS - Soft, medium or coarse grained sandstones; SIM - Soft 'weathered' igneous or metamorphic rocks or stones; SL - Soft oolitic or dolomitic limestones; SFS - Soft fine-grained sandstones; SAZ - Soft, argillaceous or silty rocks or stones; CH - Chalk or chalk stones; GRH - Gravel[1] with non-porous (hard) stones; GRS - Gravel[1] with porous stones (mainly soft stone types listed);1 - Gravel with at least 70% rounded stones by volume
Structure type - SG - single grain; GR - granular; SAB - subangular blocky; AB - angular blocky; PR - prismatic; PL - platy; MAS - massive
Dev - Development, how well the structure is developed; W - weak; M - moderate; S - strong
Consistence - Soil consistence (strength); L - loose; VFR - very friable; FR - friable; FIR - firm; VFIR - very firm; EXFIR - extremely firm; EXHD - extremely hard
Gley - depth to gleying
SPL - depth to slowly permeable layer
Wetness Class - classification of the soil according to the depth and duration of waterlogging in the soil profile, the higher the class, the longer and at the shallower depth the soil is wet

Overall ALC - this part of the table combines results of the classification for each of the limitations

Soil profile descriptions

Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Matrix (main) colour: Hue	Matrix (main) colour: Value	Matrix (main) colour: Chroma	Peat-specific properties: Von Post	Peat-specific properties: Water content (B)	Peat-specific properties: Fine fibre content (F)	Peat-specific properties: Coarse fibre content (R)	Peat-specific properties: Wood remains (W)	Mottling: Abundan-ce up to %	Mottling: Hue	Mottling: Value	Mottling: Chroma
1	Core	0	no	1	30	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	71	MCL	2.5Y	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	7	3	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
2	Core	1	no	1	33	MCL	10YR	2	2	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	73	MCL	2.5Y	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	7	3	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
3	Core	3	no	1	22	HCL	10YR	2	2	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	60	MCL	2.5Y	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	7	3	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
4	Core	0	no	1	30	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	35	C	10YR	6	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				3	120	C	10YR	7	3	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
5	Core	3	no	1	40	MCL	10YR	2	2	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	65	MCL	2.5Y	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	7	3	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
6	Pit	0	no	1	25	HCL	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	65	HCL	10YR	5	6	n/a	n/a	n/a	n/a	n/a	40	10YR	4	2
				3	120	C	2.5Y	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
7	Core	1	no	1	34	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	72	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
8	Core	1	no	1	32	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	73	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
9	Core	0	no	1	23	HCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	62	HCL	2.5YR	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	SCL	2.5Y	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
10	Core	2	no	1	26	HCL	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	63	HCL	2.5Y	6	3	n/a	n/a	n/a	n/a	n/a	40	5Y	7	1
				3	120	C	5Y	7	1	n/a	n/a	n/a	n/a	n/a	40	2.5Y	6	6
				4														
				5														
11	Core	3	no	1	40	HCL	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	82	HCL	2.5Y	6	3	n/a	n/a	n/a	n/a	n/a	40	5Y	7	1
				3	120	C	5Y	7	1	n/a	n/a	n/a	n/a	n/a	40	2.5Y	6	6
				4														
				5														
12	Core	3	no	1	41	HCL	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	85	HCL	2.5Y	6	3	n/a	n/a	n/a	n/a	n/a	40	5Y	7	1
				3	120	C	5Y	7	1	n/a	n/a	n/a	n/a	n/a	40	2.5Y	6	6
				4														
				5														
14	Pit	0	no	1	35	HCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				3	100	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	8
				4														
				5														
15	Core	2	no	1	35	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	71	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
16	Core	2	no	1	26	HCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	HCL	2.5YR	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
17	Core	1	no	1	28	HCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	53	HCL	2.5Y	5	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	SCL	2.5Y	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
				1	40	C	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	81	HCL	2.5Y	6	3	n/a	n/a	n/a	n/a	n/a	40	5Y	7	1

Soil profile descriptions continued

Survey point	Ped faces				FeMn up to %	Biopores	Stones and rocks			Structure			Consistence	Calcareous	Gleying	SPL	Notes
	Colour different to matrix	Hue	Value	Chroma			> 2 cm up to %	> 6 cm up to %	Type	Type	Development	Ped size					
1	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	PR	W	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
2	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	PR	W	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
3	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	yes	10YR	5	4	0	yes	0	0	n/a	PR	W	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
4	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
5	no	n/a	n/a	n/a	0	yes	0	0	n/a	AB	M	M	FR	no	NO	NO	-
	yes	2.5Y	6	3	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	M	FIR	no	YES	YES	
6	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	PR	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	VC	VFIR	no	YES	YES	
7	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
8	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
9	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	M	M	FR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	FR	no	NO	YES	
10	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
11	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	NO	
12	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	NO	
14	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	W	C	VFIR	no	NO	YES	
15	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
16	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	M	M	FR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
17	no	n/a	n/a	n/a	0	yes	5	0	H	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	FR	no	NO	YES	
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	EXFIR	no	NO	YES	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
1	2	1	1	1	1	1	1	1	2	3a	1	**3a**	Droughti-ness
2	2	1	1	1	1	1	1	1	2	3a	1	**3a**	Droughti-ness
3	2	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
4	2	1	1	1	1	1	1	1	3a	1	1	**3a**	Wetness
5	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
6	2	1	1	1	1	1	1	1	3a	3a	3b	**3b**	Pattern
7	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
8	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
9	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
10	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
11	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
12	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
14	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
15	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
16	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
17	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness

Soil profile descriptions

Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundan-ce up to %	Hue	Value	Chroma
18	Core	0	no	3	120	C	5Y	7	1	n/a	n/a	n/a	n/a	n/a	40	2.5Y	6	6
				4														
				5														
19	Core	1	no	1	33	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	HZCL	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
20	Pit	0	no	1	30	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	55	HZCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
21	Core	1	no	1	27	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	50	HZCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
22	Core	1	no	1	25	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	52	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
23	Core	2	no	1	35	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	70	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
24	Core	5	no	1	33	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	70	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
25	Core	0	no	1	29	HCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	52	HCL	2.5Y	5	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	95	SCL	2.5Y	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
26	Core	1	no	1	36	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	HCL	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
27	Core	1	no	1	37	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	57	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	6
				4														
				5														
28	Core	1	no	1	27	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	49	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
29	Core	1	no	1	26	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	51	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
30	Pit	1	no	1	40	MCL	10YR	4	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	MCL	2.5Y	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
31	Core	6	no	1	39	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	71	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
32	Core	2	no	1	36	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	74	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
33	Core	1	no	1	37	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
34	Core	0	no	1	35	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	6
				2	71	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Hue	Value	Chroma	FeMn up to %	Biopo-res	Stones and rocks: > 2 cm up to %	> 6 cm up to %	Type	Structure: Type	Deve-lop-ment	Ped size	Consis-tence	Calca-reous	Gley-ing	SPL	Notes
18	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	W	M	FIR	no	YES	NO	
19	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	C	VFIR	no	YES	NO	
20	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
21	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
22	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
23	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
24	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	firm subsoil
	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	40	no	0	0	n/a	AB	M	M	VFIR	no	YES	NO	
25	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	C	FR	no	NO	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
26	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	lesser 2nd horizon
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	40	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	
27	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	FIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
28	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
29	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	C	FR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
30	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	0	5	SS	AB	M	C	EXFIR	no	NO	NO	
31	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	10	0	SS	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	5	10	SS	AB	M	C	EXFIR	no	NO	NO	
32	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	stone abundant
	no	n/a	n/a	n/a	1	yes	10	0	SS	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	5	5	SS	AB	M	C	EXFIR	no	NO	NO	
33	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	5	0	SS	AB	M	C	EXFIR	no	NO	YES	
34	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	-

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
18	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
19	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
20	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
21	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
22	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
23	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
24	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
25	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
26	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
27	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
28	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
29	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
30	2	1	1	1	1	1	1	1	2	1	1	**2**	Wetness
31	2	1	1	1	1	1	1	1	2	2	1	**2**	Wetness Droughti-ness
32	2	1	1	1	1	1	1	2	2	3a	1	**3a**	Droughti-ness
33	2	1	1	1	1	1	1	2	2	3a	1	**3a**	Droughti-ness
34	3	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness

Soil profile descriptions

Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundan-ce up to %	Hue	Value	Chroma
				5														
35	**Core**	0	no	1	32	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	6
				2	72	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
36	**Core**	1	no	1	36	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	78	C	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
37	**Core**	1	no	1	35	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	76	C	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
38	**Core**	1	no	1	38	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	56	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	6
				4														
				5														
39	**Core**	1	no	1	35	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	55	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	6
				4														
				5														
40	**Core**	5	no	1	22	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	55	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	7	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
41	**Core**	2	no	1	23	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	51	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	7	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
42	**Core**	2	no	1	39	HCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	73	C	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
43	**Pit**	1	no	1	29	HCL	10YR	4	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	69	HCL	10YR	6	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
44	**Core**	0	no	1	32	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	45	MCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
45	**Core**	3	no	1	36	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	6
				2	54	MCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
46	**Core**	0	no	1	28	MCL	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	70	MCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
47	**Pit**	2	no	1	25	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	68	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
48	**Pit**	1	no	1	45	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	70	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
49	**Core**	2	no	1	31	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	80	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
50	**Core**	0	no	1	38	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	85	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
				1	31	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6

Soil profile descriptions continued

Survey point	Ped faces				FeMn up to %	Biopo-res	Stones and rocks			Structure			Consis-tence	Calca-reous	Gley-ing	SPL	Notes
	Colour different to matrix	Hue	Value	Chroma			> 2 cm up to %	> 6 cm up to %	Type	Type	Deve-lop-ment	Ped size					
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	M	C	EXFIR	no	NO	YES	
35	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
36	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
37	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	40	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	
38	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	FIR	no	YES	YES	firm topsoil
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	40	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	
39	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	FIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	0	0	n/a	PR	M	C	VFIR	no	YES	NO	
40	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	0	0	n/a	PR	M	C	VFIR	no	YES	NO	
41	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	10	5	SS	AB	M	C	EXFIR	no	NO	NO	
42	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	S	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	yes	5	0	SS	PR	M	C	VFIR	no	NO	NO	
43	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
44	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	GR	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
45	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
46	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	20	yes	0	0	n/a	AB	M	F	FIR	no	YES	NO	
47	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
48	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
49	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
50	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	NO	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
35	3	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness
36	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
37	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
38	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
39	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
40	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
41	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
42	2	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness
43	2	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness
44	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
45	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
46	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
47	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
48	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
49	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
50	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness

Soil profile descriptions

Survey point	Type	Gradient	Soil disturbed or restored	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundance up to %	Hue	Value	Chroma
51	**Core**	1	no	2	51	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
52	**Core**	1	no	1	35	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	HCL	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
53	**Core**	1	no	1	37	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	78	HCL	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
54	**Core**	1	no	1	36	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	59	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	6
				4														
				5														
55	**Core**	1	no	1	28	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	HCL	10YR	7	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
56	**Core**	4	no	1	38	C	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
57	**Core**	1	no	1	39	C	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	77	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
58	**Core**	3	no	1	37	C	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	71	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	2.5YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
59	**Core**	3	no	1	27	MCL	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	54	HCL	2.5Y	5	6	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				3	120	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
60	**Core**	1	no	1	38	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	60	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
61	**Core**	0	no	1	32	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	63	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
62	**Pit**	2	no	1	25	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	71	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
63	**Core**	3	no	1	29	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	95	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
64	**Core**	3	no	1	34	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
65	**Core**	0	no	1	40	MCL	10YR	3	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	70	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
66	**Core**	0	no	1	42	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	75	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
67	**Core**	0	no	1	41	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	8
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Ped faces: Hue	Ped faces: Value	Ped faces: Chroma	FeMn up to %	Biopores	Stones and rocks: > 2 cm up to %	Stones and rocks: > 6 cm up to %	Stones and rocks: Type	Structure: Type	Structure: Development	Structure: Ped size	Consistence	Calcareous	Gleying	SPL	Notes
51	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
52	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	Flat field
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
53	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
54	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	bright orange mottles over grey. Topsoil structure firm
	no	n/a	n/a	n/a	40	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	FIR	no	YES	YES	
55	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	M	VC	VFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
56	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	10	5	SS	AB	M	C	EXFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	5	0	SS	AB	S	C	VFIR	no	YES	YES	
57	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	10	5	SS	AB	M	C	EXFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
58	no	n/a	n/a	n/a	0	yes	5	5	SS	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	10	10	SS	AB	M	C	EXFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
59	no	n/a	n/a	n/a	0	yes	0	0	n/a	AB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
60	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
61	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
62	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	5	5	H	PR	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
63	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	NO	
64	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	SAB	M	M	VFIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
65	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
66	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
67	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
51	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
52	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
53	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
54	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
55	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
56	2	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
57	2	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
58	2	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
59	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
60	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
61	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
62	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
63	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
64	3	1	1	1	1	1	1	1	3a	1	1	**3a**	Wetness
65	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
66	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
67	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness

Soil profile descriptions

Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundan-ce up to %	Hue	Value	Chroma
				4														
				5														
68	Core	3	no	1	33	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	54	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
69	Core	1	no	1	32	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	52	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
70	Pit	0	no	1	30	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	53	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
71	Core	1	no	1	33	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	55	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
72	Core	1	no	1	35	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	C	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
73	Core	1	no	1	38	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	51	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														
				5														
74	Core	4	no	1	31	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	58	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				4														
				5														
75	Pit	1	no	1	30	SCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	SCL	10YR	6	6	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				4														
				5														
76	Core	3	no	1	38	SCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	SCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				4														
				5														
77	Core	0	no	1	36	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	MCL	10YR	4	4	n/a	n/a	n/a	n/a	n/a	2	10YR	7	6
				3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
78	Pit	0	no	1	30	MCL	7.5YR	4	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	C	10YR	6	6	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				3	100	C	5Y	7	1	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
79	Core	0	no	1	34	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	70	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	100	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
80	Core	0	no	1	31	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	71	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
81	Core	0	no	1	30	HCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	50	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	SCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
82	Core	0	no	1	35	MCL	2.5Y	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	82	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
83	Core	0	no	1	35	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	72	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Ped faces: Hue	Ped faces: Value	Ped faces: Chroma	FeMn up to %	Biopo-res	Stones and rocks: > 2 cm up to %	Stones and rocks: > 6 cm up to %	Stones and rocks: Type	Structure: Type	Structure: Deve-lop-ment	Structure: Ped size	Consis-tence	Calca-reous	Gley-ing	SPL	Notes
68	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
69	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
70	no	n/a	n/a	n/a	1	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
71	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
72	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
73	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	S	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
74	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	AB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	VFIR	no	NO	YES	
75	no	n/a	n/a	n/a	0	yes	10	0	CH	AB	M	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	35	20	CH	AB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	VFIR	no	NO	YES	
76	no	n/a	n/a	n/a	0	yes	10	0	SS	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	5	10	CH	AB	M	C	VFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	VFIR	no	NO	YES	
77	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
78	no	n/a	n/a	n/a	0	yes	10	0	SS	SAB	M	F	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	yes	5	5	SS	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	W	F	FR	no	YES	YES	
79	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	W	F	FR	no	YES	YES	
80	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	0	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	W	F	FR	no	YES	YES	
81	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	M	VFIR	no	YES	YES	
82	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	M	VFIR	no	YES	NO	
83	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	M	VFIR	no	YES	YES	

ALC for areas represented by individual survey points

Survey point	Wetness class	Climate	Gradient	Summer flood risk	Winter flood risk	Topsoil texture	Soil Depth	Topsoil stoniness	Wetness	Droughti-ness	Other (see "Limited by" column)	ALC Grade	Limited by
68	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
69	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
70	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
71	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
72	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
73	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
74	2	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
75	2	1	1	1	1	1	1	2	2	3a	1	**3a**	Droughti-ness
76	3	1	1	1	1	1	1	2	3a	2	1	**3a**	Wetness
77	2	1	1	1	1	1	1	1	2	2	1	**2**	Wetness Droughti-ness
78	2	1	1	1	1	1	1	2	2	2	1	**2**	Topsoil stoniness Wetness Droughti-ness
79	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
80	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
81	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
82	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
83	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness

Soil profile descriptions																		
							Matrix (main) colour			Peat-specific properties					Mottling			
Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundan-ce up to %	Hue	Value	Chroma
84	Core	0	no	1	37	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	82	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
85	Core	0	no	1	37	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	75	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
86	Core	0	no	1	30	MCL	2.5Y	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
87	Core	1	no	1	33	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	55	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
88	Core	3	no	1	30	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	53	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
89	Core	2	no	1	36	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	56	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
90	Core	1	no	1	25	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	53	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
91	Core	2	no	1	25	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	57	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
92	Core	1	no	1	33	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	77	C	10YR	7	4	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				4														
				5														
93	Core	1	no	1	40	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	51	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														
				5														
93.1	Pit	3	no	1	26	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	45	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
94	Core	3	no	1	30	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	59	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				4														
				5														
95	Core	2	no	1	39	C	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	73	C	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
96	Core	0	no	1	30	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	73	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
97	Core	1	no	1	38	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	71	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
98	Core	2	no	1	41	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	68	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
				1	30	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	53	MCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Ped faces: Hue	Ped faces: Value	Ped faces: Chroma	FeMn up to %	Biopo-res	Stones and rocks: > 2 cm up to %	Stones and rocks: > 6 cm up to %	Stones and rocks: Type	Structure: Type	Structure: Deve-lop-ment	Structure: Ped size	Consis-tence	Calca-reous	Gley-ing	SPL	Notes
84	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	M	VFIR	no	YES	NO	
85	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	M	VFIR	no	YES	YES	
86	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	F	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	M	VFIR	no	YES	YES	
87	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
88	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	slight water logging patch
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
89	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	PR	S	VC	VFIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
90	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	mottling in 1-2 horizon then nearly pure grey in 3
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
91	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	poached cattle field
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
92	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
93	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	S	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	C	VFIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
93.1	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
94	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	AB	M	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	VFIR	no	NO	YES	
95	no	n/a	n/a	n/a	0	yes	10	0	SS	SAB	S	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	5	10	SS	AB	M	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
96	no	n/a	n/a	n/a	0	yes	10	5	SS	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	10	SS	AB	M	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
97	no	n/a	n/a	n/a	0	yes	15	0	SS	SAB	M	C	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	10	SS	AB	M	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
98	no	n/a	n/a	n/a	2	yes	5	0	SS	SAB	M	M	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	10	SS	AB	M	C	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
84	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
85	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
86	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
87	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
88	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
89	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
90	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
91	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
92	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
93	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
93.1	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
94	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
95	3	1	1	1	1	1	1	2	3b	3a	1	**3b**	Wetness
96	3	1	1	1	1	1	1	2	3a	3a	1	**3a**	Wetness Droughti-ness
97	3	1	1	1	1	1	1	3a	3a	3a	1	**3a**	Topsoil stoniness Wetness Droughti-ness
98	3	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness

Soil profile descriptions

Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundan-ce up to %	Hue	Value	Chroma
99	**Core**	3	no	3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
100	**Core**	0	no	1	32	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	65	MCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				4														
				5														
101	**Core**	1	no	1	42	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	85	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
102	**Core**	0	no	1	26	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	45	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
103	**Pit**	1	no	1	24	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	46	HCL	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	2.5Y	7	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
104	**Core**	0	no	1	25	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	47	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	2.5Y	7	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
105	**Core**	0	no	1	29	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	45	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	2.5Y	7	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
106	**Pit**	0	no	1	26	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	48	HZCL	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	HZCL	2.5Y	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
107	**Core**	0	no	1	27	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	45	C	10YR	7	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	2.5Y	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
108	**Core**	0	no	1	29	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	55	C	10YR	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	MCL	2.5Y	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
109	**Core**	2	no	1	32	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	54	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
110	**Core**	1	no	1	28	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	52	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
111	**Core**	1	no	1	24	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	53	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
112	**Core**	2	no	1	26	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	52	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
113	**Core**	1	no	1	36	HCL	10YR	5	4	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	52	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														
				5														
114	**Core**	0	no	1	35	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	85	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														
				5														
115	**Core**	0	no	1	32	MCL	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														

Soil profile descriptions continued

Survey point	Ped faces				FeMn up to %	Biopores	Stones and rocks			Structure			Consistence	Calcareous	Gleying	SPL	Notes
	Colour different to matrix	Hue	Value	Chroma			> 2 cm up to %	> 6 cm up to %	Type	Type	Development	Ped size					
99	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	
100	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
101	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	VFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
102	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
103	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	M	F	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
104	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	M	F	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
105	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	M	F	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
106	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	F	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	S	C	VFIR	no	YES	YES	
107	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	F	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	5	0	H	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	M	C	VFIR	no	NO	YES	
108	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	M	F	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	more mottling in 1st 2nd
109	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	horizon then 40% in 3rd
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
110	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	5	H	SAB	M	M	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
111	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	stones near shed
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
112	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	S	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
113	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	AB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
114	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	C	VFIR	no	YES	YES	
115	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
99	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
100	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
101	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
102	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
103	4	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
104	4	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
105	4	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
106	4	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
107	4	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
108	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
109	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
110	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
111	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
112	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
113	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
114	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
115	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness

	Soil profile descriptions																	
							Matrix (main) colour			Peat-specific properties					Mottling			
Survey point	Type	Gradient	Soil disturbed or restored	Horizon	Depth	Texture	Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundance up to %	Hue	Value	Chroma
				5														
116	Core	2	no	1	34	MCL	10YR	4	2	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	62	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														
				5														
117	Core	3	no	1	33	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	68	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				3	120	HCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	5	6
				4														
				5														
118	Core	1	no	1	41	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	81	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
119	Core	1	no	1	41	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	84	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
120	Core	1	no	1	44	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	83	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
121	Core	1	no	1	43	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	80	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
121	Core	1	no	1	43	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	80	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
122	Core	0	no	1	32	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	56	MCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
123	Core	2	no	1	43	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	80	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
123	Core	2	no	1	43	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	80	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
124	Core	0	no	1	31	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	5Y	3	1
				2	58	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
125	Core	0	no	1	32	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	70	MCL	2.5YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
126	Core	0	no	1	31	HCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	79	MCL	2.5YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	HCL	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
127	Core	2	no	1	22	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	54	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
128	Core	1	no	1	24	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	55	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
129	Core	1	no	1	33	HCL	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
				1	32	MCL	10YR	4	2	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Hue	Value	Chroma	FeMn up to %	Biopo-res	Stones and rocks: > 2 cm up to %	> 6 cm up to %	Type	Structure: Type	Deve-lop-ment	Ped size	Consis-tence	Calca-reous	Gley-ing	SPL	Notes
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	W	M	FIR	no	YES	NO	
116	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	W	M	FIR	no	YES	NO	
117	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
118	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
119	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
120	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
121	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
121	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
122	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
123	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
123	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
124	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	M	C	VFIR	no	YES	YES	
125	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	YES	YES	
126	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	H	SAB	M	M	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
127	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	H	SAB	M	M	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	VFIR	no	YES	YES	
128	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	
129	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	FIR	no	NO	NO	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
116	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
117	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
118	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
119	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
120	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
121	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
121	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
122	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
123	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
123	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
124	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
125	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
126	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
127	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
128	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
129	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness

Soil profile descriptions

Survey point	Type	Gradient	Soil disturbed or restored	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundance up to %	Hue	Value	Chroma
130	**Core**	3	no	2	80	MCL	2.5Y	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	7	6
				4														
				5														
132	**Pit**	0	no	1	65	HCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	72	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
133	**Core**	1	no	1	43	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	82	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
134	**Core**	0	no	1	42	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	95	MCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
135	**Core**	0	no	1	30	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	67	MCL	2.5Y	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
136	**Core**	0	no	1	24	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				2	76	MCL	2.5Y	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
137	**Core**	4	no	1	35	MCL	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	55	MCL	10YR	7	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
138	**Core**	1	no	1	45	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	82	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
139	**Core**	1	no	1	44	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	83	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
140	**Core**	1	no	1	41	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	81	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	8	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
142	**Pit**	0	no	1	55	C	10YR	4	6	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	71	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	3	6	n/a	n/a	n/a	n/a	n/a	40	7.5YR	6	6
				4														
				5														
143	**Core**	7	no	1	25	HCL	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	75	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	2	7.5YR	6	8
				3	120	C	10YR	3	6	n/a	n/a	n/a	n/a	n/a	40	7.5YR	5	8
				4														
				5														
144	**Core**	1	no	1	23	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	62	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
145	**Core**	1	no	1	21	C	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	2	7.5YR	6	8
				3	120	C	10YR	3	6	n/a	n/a	n/a	n/a	n/a	100	7.5YR	5	8
				4														
				5														
145	**Core**	1	no	1	21	C	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	2	7.5YR	6	8
				3	120	C	10YR	3	6	n/a	n/a	n/a	n/a	n/a	100	7.5YR	5	8
				4														
				5														
146	**Core**	1	no	1	21	C	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	72	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	2	7.5YR	6	8
				3	120	C	10YR	3	6	n/a	n/a	n/a	n/a	n/a	40	7.5YR	5	8
				4														
				5														
147	**Core**	0	no	1	28	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				3	120	MCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	7.5YR	5	8

Soil profile descriptions continued

Survey point	Ped faces				FeMn up to %	Biopores	Stones and rocks			Structure			Consistence	Calcareous	Gleying	SPL	Notes
	Colour different to matrix	Hue	Value	Chroma			> 2 cm up to %	> 6 cm up to %	Type	Type	Development	Ped size					
130	no	n/a	n/a	n/a	0	no	0	0	n/a	AB	M	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	NO	
132	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	10	0	SS	SAB	W	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
133	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	
134	no	n/a	n/a	n/a	0	yes	0	0	n/a	GR	M	F	FR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	
135	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	W	VC	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
136	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	YES	NO	-
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	W	VC	EXFIR	no	NO	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
137	no	n/a	n/a	n/a	0	yes	5	0	SS	AB	M	C	VFIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	5	0	SS	GR	W	F	VFR	no	YES	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
138	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	
139	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	
140	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	W	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	NO	
142	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	0	F	EXFIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	M	M	FIR	no	YES	YES	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	VC	EXFIR	no	NO	YES	
143	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	Slightly sloping
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	NO	YES	
144	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
145	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	100% mottling in 3rd horizon
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	NO	YES	
145	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	100% mottling in 3rd horizon
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	NO	YES	
146	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	-
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	NO	YES	
147	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	-
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	M	C	FIR	no	YES	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	YES	YES	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
130	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
132	2	1	1	1	1	1	1	1	3a	2	3b	**3b**	Pattern
133	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
134	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
135	3	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness
136	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
137	3	1	1	1	1	1	1	1	3a	2	3b	**3b**	Pattern
138	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
139	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
140	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
142	2	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
143	2	1	1	1	1	1	1	1	3a	1	1	**3a**	Wetness
144	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
145	2	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
145	2	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
146	2	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
147	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness

Soil profile descriptions

Survey point	Type	Gradient	Soil disturbed or restored	Horizon	Depth	Texture	Matrix (main) colour Hue	Value	Chroma	Peat-specific properties Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Mottling Abundance up to %	Hue	Value	Chroma
				4														
				5														
148	**Core**	0	no	1	28	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	66	HCL	10YR	6	4	n/a	n/a	n/a	n/a	n/a	100	10YR	6	8
				3	120	MCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				4														
				5														
149	**Core**	1	no	1	24	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	61	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
150	**Core**	1	no	1	23	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	61	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
151	**Core**	1	no	1	28	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	62	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
152	**Core**	2	no	1	23	C	10YR	5	1	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	61	MCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	2	7.5YR	6	8
				3	120	C	7.5YR	6	2	n/a	n/a	n/a	n/a	n/a	100	7.5YR	5	8
				4														
				5														
153	**Pit**	2	no	1	25	SCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	7.5YR	3	4
				2	85	SC	10YR	5	3	n/a	n/a	n/a	n/a	n/a	40	7.5YR	5	8
				3	100	C	7.5YR	6	2	n/a	n/a	n/a	n/a	n/a	100	7.5YR	5	8
				4														
				5														
154	**Core**	1	no	1	31	MCL	10YR	4	3	n/a	n/a	n/a	n/a	n/a	2	10YR	5	2
				2	78	HCL	2.5Y	5	4	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	HCL	5Y	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
155	**Core**	2	no	1	39	MCL	10YR	3	3	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	69	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	HCL	5Y	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	8
				4														
				5														
156	**Core**	2	no	1	23	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	54	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				3	120	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
157	**Core**	1	no	1	22	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	54	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				3	120	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
158	**Pit**	0	no	1	35	C	10YR	3	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	55	C	10YR	5	6	n/a	n/a	n/a	n/a	n/a	40	7.5YR	5	1
				3	100	C	2.5Y	5	3	n/a	n/a	n/a	n/a	n/a	20	10YR	5	6
				4														
				5														
159	**Core**	1	no	1	20	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	50	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	4	6
				4														
				5														
160	**Core**	1	no	1	35	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	55	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
161	**Core**	1	no	1	23	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	60	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
162	**Core**	1	no	1	23	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	61	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
164	**Core**	1	no	1	30	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	59	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														

Soil profile descriptions continued

Survey point	Ped faces				FeMn up to %	Biopo-res	Stones and rocks			Structure			Consis-tence	Calca-reous	Gley-ing	SPL	Notes
	Colour different to matrix	Hue	Value	Chroma			> 2 cm up to %	> 6 cm up to %	Type	Type	Deve-lop-ment	Ped size					
	no	n/a	n/a	n/a	2	yes	5	0	H	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	M	C	FIR	no	YES	NO	
148	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	W	VC	FIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
149	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	less grey coulor
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
150	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
151	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
152	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	0	n/a	SAB	M	M	VFIR	no	YES	NO	
153	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	W	VC	VFIR	no	YES	NO	-
	no	n/a	n/a	n/a	0	yes	5	0	SS	SAB	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	FIR	no	NO	YES	
154	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	M	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	W	C	FIR	no	YES	YES	
155	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	S	M	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
156	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
157	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	20	yes	0	0	n/a	SAB	M	M	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	5	H	SAB	M	M	FIR	no	NO	NO	
158	no	n/a	n/a	n/a	0	no	0	0	n/a	SAB	W	C	FIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	VC	EXFIR	no	YES	NO	
159	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	abrupt 3 horizon groundwater gley
	no	n/a	n/a	n/a	0	yes	0	0	n/a	AB	M	C	VFIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	VC	EXFIR	no	YES	NO	
160	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	yes	YES	YES	poorer structure bare patch in field
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
161	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
162	no	n/a	n/a	n/a	40	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	fe abundant in 3
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
164	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
148	3	1	1	1	1	1	1	1	3a	2	1	**3a**	Wetness
149	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
150	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
151	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
152	2	1	1	1	1	1	1	1	3b	1	1	**3b**	Wetness
153	2	1	1	1	1	1	1	1	2	1	3b	**3b**	Pattern
154	3	1	1	1	1	1	1	1	3a	3a	1	**3a**	Wetness Droughti-ness
155	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
156	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
157	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
158	2	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
159	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
160	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
161	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
162	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
164	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness

Soil profile descriptions

Survey point	Type	Gradient	Soil disturbed or restored	Horizon	Depth	Texture	Matrix (main) colour: Hue	Matrix (main) colour: Value	Matrix (main) colour: Chroma	Peat-specific properties: Von Post	Peat-specific properties: Water content (B)	Peat-specific properties: Fine fibre content (F)	Peat-specific properties: Coarse fibre content (R)	Peat-specific properties: Wood remains (W)	Mottling: Abundance up to %	Mottling: Hue	Mottling: Value	Mottling: Chroma
164	**Core**	1	no	1	30	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	0	0	0	0
				2	59	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
165	**Core**	3	no	1	29	MCL	10YR	4	2	n/a	n/a	n/a	n/a	n/a	20	5G	4	1
				2	59	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	8
				3	120	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
166	**Core**	5	no	1	20	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	56	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				3	120	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				4														
				5														
167	**Core**	1	no	1	23	HCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	58	MCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				3	120	HCL	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	4	6
				4														
				5														
168	**Core**	1	no	1	23	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	55	C	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	4	6
				3	120	C	10YR	7	1	n/a	n/a	n/a	n/a	n/a	100	10YR	4	6
				4														
				5														
181	**Core**	1	no	1	38	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	67	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
182	**Core**	1	no	1	39	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	71	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
183	**Pit**	1	no	1	35	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	69	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
184	**Core**	1	no	1	37	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	69	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
185	**Core**	1	no	1	35	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	74	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
186	**Core**	1	no	1	38	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	70	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
187	**Core**	1	no	1	35	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	71	SCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	SCL	10YR	6	1	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														
188	**Core**	1	no	1	36	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	67	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
189	**Core**	1	no	1	35	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	71	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
190	**Core**	1	no	1	38	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	70	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
191	**Pit**	1	no	1	37	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	69	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
				1	38	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	58	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Ped faces: Hue	Ped faces: Value	Ped faces: Chroma	FeMn up to %	Biopo-res	Stones and rocks: > 2 cm up to %	Stones and rocks: > 6 cm up to %	Stones and rocks: Type	Structure: Type	Structure: Deve-lop-ment	Structure: Ped size	Consis-tence	Calca-reous	Gley-ing	SPL	Notes
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	SAB	S	C	FIR	no	YES	NO	
164	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	5	0	H	SAB	M	M	FR	no	NO	NO	
	no	n/a	n/a	n/a	0	no	0	0	n/a	PR	W	C	EXFIR	no	YES	YES	
165	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	10	5	SS	SAB	S	C	FIR	no	YES	NO	
166	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	stony subsoil
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	C	FIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	0	n/a	AB	W	C	FIR	no	YES	YES	
167	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	M	VC	VFIR	no	YES	YES	More brown grey in 3rd
	no	n/a	n/a	n/a	2	yes	0	0	n/a	AB	M	C	EXFIR	no	NO	NO	
	no	n/a	n/a	n/a	20	no	0	0	n/a	PR	M	C	EXFIR	no	YES	YES	soft rush and poorer structure 3rd horizon brownish grey
168	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	VC	EXFIR	no	YES	YES	
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
181	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
182	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
183	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
184	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
185	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
186	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
187	no	n/a	n/a	n/a	40	no	0	0	n/a	AB	W	C	FIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
188	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
189	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
190	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	
191	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	no	NO	NO	
	no	n/a	n/a	n/a	2	no	0	0	n/a	PR	S	C	VFIR	no	YES	YES	

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
164	3	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
165	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
166	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
167	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
168	4	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
181	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
182	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
183	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
184	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
185	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
186	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
187	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
188	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
189	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
190	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
191	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness

Soil profile descriptions

Survey point	Type	Gradient	Soil disturbed or restored	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundance up to %	Hue	Value	Chroma
192	**Core**	1	no	3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
193	**Core**	1	no	1	36	MCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	71	SCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
194	**Core**	1	no	1	36	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	72	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
195	**Core**	1	no	1	39	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	68	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
196	**Core**	1	no	1	38	HCL	10YR	5	3	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	71	HCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	20	10YR	6	6
				3	120	C	10YR	6	1	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				4														
				5														
197	**Core**	1	no	1	39	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	2	10YR	6	6
				2	70	SCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	40	10YR	6	6
				3	120	SCL	10YR	6	2	n/a	n/a	n/a	n/a	n/a	100	10YR	6	6
				4														
				5														

Soil profile descriptions continued

Survey point	Ped faces: Colour different to matrix	Ped faces: Hue	Ped faces: Value	Ped faces: Chroma	FeMn up to %	Biopo-res	Stones and rocks: > 2 cm up to %	Stones and rocks: > 6 cm up to %	Stones and rocks: Type	Structure: Type	Structure: Deve-lop-ment	Structure: Ped size	Consis-tence	Calca-reous	Gley-ing	SPL	Notes
192	no	n/a	n/a	n/a	2	no	0	0	n/a	AB	M	VC	VFIR	no	YES	YES	-
193	no no no	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	0 2 2	yes no no	0 0 0	0 0 0	n/a n/a n/a	SAB AB AB	M S M	M C VC	FIR FIR VFIR	no no no	NO YES YES	NO YES YES	-
194	no no no	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	0 2 2	yes no no	0 0 0	0 0 0	n/a n/a n/a	SAB PR AB	M S M	M C VC	FIR VFIR VFIR	no no no	NO YES YES	NO YES YES	-
195	no no no	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	0 2 2	yes no no	0 0 0	0 0 0	n/a n/a n/a	SAB PR AB	M S M	M C VC	FIR VFIR VFIR	no no no	NO YES YES	NO YES YES	-
196	no no no	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	0 2 2	yes no no	0 0 0	0 0 0	n/a n/a n/a	SAB PR AB	M S M	M C VC	FIR VFIR VFIR	no no no	NO YES YES	NO YES YES	-
197	no no no	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	0 2 40	yes no no	0 0 0	0 0 0	n/a n/a n/a	SAB AB AB	M S W	M C C	FIR FIR FIR	no no no	NO YES YES	NO YES YES	-

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
192	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
193	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
194	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
195	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
196	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness
197	4	1	1	1	1	1	1	1	3b	2	1	**3b**	Wetness

Appendix 2: Soil Texture Laboratory Results

ANALYTICAL REPORT

Report Number	**79919-21**	**H448**	**WARDELL ARMSTRONG LLP**
Date Received	**10-DEC-2021**		**CITY QUADRANT**
Date Reported	**20-DEC-2021**		**11 WATERLOO SQUARE**
Project	**GM12014GMEM**		**NEWCASTLE UPON TYNE**
Reference	**KIRSTY ELLIOTT**		**NE1 4DP**
Order Number	**NT54484**		

Laboratory Reference		**SOIL538505**	**SOIL538506**	**SOIL538507**	**SOIL538508**	**SOIL538509**	**SOIL538510**	**SOIL538511**	**SOIL538512**	**SOIL538513**	**SOIL538514**
Sample Reference		**117 T/S AUGER**	**126 T/S AUGER**	**129 T/S AUGER**	**132 T/S H1 5-25**	**132 S/S H2 60-70**	**137 U S/S AUGER**	**137 L S/S AUGER**	**142 T/S H1 10-30**	**153 T/S H1 5-25**	**153 U S/S H2 40-60**
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Sand 2.00-0.063mm	% w/w	41	24	49	29	8	38	43	14	53	52
Silt 0.063-0.002mm	% w/w	34	46	23	40	40	43	40	41	21	15
Clay <0.002mm	% w/w	25	30	28	31	52	19	17	45	26	33
Textural Class **		MCL	HCL	HCL	HCL	C	MCL	SZL	C	SCL	SC

Notes

Analysis Notes
The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

Document Control

** Please see the attached document for the definition of textural classes.

Reported by
Myles Nicholson

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ANALYTICAL REPORT

Report Number	**79917-21**	**H448**	**WARDELL ARMSTRONG LLP**
Date Received	**10-DEC-2021**		**CITY QUADRANT**
Date Reported	**16-DEC-2021**		**11 WATERLOO SQUARE**
Project	**GM12014GMEM**		**NEWCASTLE UPON TYNE**
Reference	**KIRSTY ELLIOTT**		**NE1 4DP**
Order Number	**NT54484**		

Laboratory Reference		**SOIL538485**	**SOIL538486**	**SOIL538487**	**SOIL538488**	**SOIL538489**	**SOIL538490**	**SOIL538491**	**SOIL538492**	**SOIL538493**	**SOIL538494**
Sample Reference		**14 T/S H1 5-25**	**20 T/S H1 5-25**	**20 U S/S H2 30-50**	**30 T/S H1 5-25**	**30 U S/S H2**	**47 T/S H1 5-25**	**47 S/S H2 35-55**	**62 T/S H1 0-20**	**62 U S/S H2 35-55**	**70 T/S H1 5-25**
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Sand 2.00-0.063mm	% w/w	23	20	11	47	39	38	29	44	44	29
Silt 0.063-0.002mm	% w/w	44	55	57	32	36	38	47	30	29	44
Clay <0.002mm	% w/w	33	25	32	21	25	24	24	26	27	27
Textural Class **		HCL	MCL/MZCL	HZCL	MCL	MCL	MCL	MCL	MCL	HCL	HCL

Notes

Analysis Notes
The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
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Document Control

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ANALYTICAL REPORT

Report Number	**79918-21**	**H448**	**WARDELL ARMSTRONG LLP**
Date Received	**10-DEC-2021**		**CITY QUADRANT**
Date Reported	**17-DEC-2021**		**11 WATERLOO SQUARE**
Project	**GM12014GMEM**		**NEWCASTLE UPON TYNE**
Reference	**KIRSTY ELLIOTT**		**NE1 4DP**
Order Number	**NT54484**		

Laboratory Reference		**SOIL538495**	**SOIL538496**	**SOIL538497**	**SOIL538498**	**SOIL538499**	**SOIL538500**	**SOIL538501**	**SOIL538502**	**SOIL538503**	**SOIL538504**
Sample Reference		**75 T/S H1 5-25**	**78 T/S H1 5-25**	**78 U S/S H2 35-55**	**78 L S/S H3**	**103 T/S H1 5-25**	**103 U S/S H2 35-55**	**103 L S/S H3 65-70**	**106 T/S H1 5-25**	**106 U S/S H2 30-50**	**106 L S/S H3 60-70**
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Sand 2.00-0.063mm	% w/w	51	47	20	20	20	27	13	21	19	12
Silt 0.063-0.002mm	% w/w	22	24	29	28	46	40	39	49	50	58
Clay <0.002mm	% w/w	27	29	51	52	34	33	48	30	31	30
Textural Class **		SCL	HCL	C	C	HCL/HZCL	HCL	C	HCL	HZCL	HZCL

Notes

Analysis Notes
The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

Document Control

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ANALYTICAL REPORT

Report Number	**79920-21**	**H448**	**WARDELL ARMSTRONG LLP**
Date Received	**10-DEC-2021**		**CITY QUADRANT**
Date Reported	**20-DEC-2021**		**11 WATERLOO SQUARE**
Project	**GM12014GMEM**		**NEWCASTLE UPON TYNE**
Reference	**KIRST ELLIOTT**		**NE1 4DP**
Order Number	**NT54484**		

Laboratory Reference		**SOIL538515**	**SOIL538516**	**SOIL538517**							
Sample Reference		**153 L S/S 85-100**	**154 T/S AUGER**	**158 T/S H1 10-20**							
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**							
Sand 2.00-0.063mm	% w/w	26	46	23							
Silt 0.063-0.002mm	% w/w	25	31	40							
Clay <0.002mm	% w/w	49	23	37							
Textural Class **		C	MCL	C							

Notes

Analysis Notes
The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

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ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand, loamy sand, sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

- vf Very Fine (more than 2/3's of sand less than 0.106 mm)
- f Fine (more than 2/3's of sand less than 0.212 mm)
- c Coarse (more than 1/3 of sand greater than 0.6 mm)
- m Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam classes* according to clay content are indicated as follows:

- M medium (less than 27% clay)
- H heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

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Appendix 3: Droughtiness Calculations

APPENDIX 3: DROUGHTINESS CALCULATIONS

Abbreviations:

TAv – Total amount of soil water available to plants, considered to be the volumetric soil water content between 0.05 and 15 bar suction or, in case of sands and loamy sands, 0.10 and 15 bar suction. These suctions approximate to the conditions of field capacity and wilting point (when the plants can extract no more moisture from the soil).

EAv – Easily available water, held in the soil between 0.05 and 2.0 bar suction, used for calculating cereal available water below 50 cm depth where root systems are less well developed, and the plant's ability to extract water is diminished.

Values of TAv and EAv are estimated for each horizon based on soil texture and structural condition according to the ALC guidelines (MAFF, 1988).

AP – crop adjusted available water capacity, a measure of the quantity of water held in the soil profile which can be taken up by a specific crop.

MD – the moisture deficit term used in the ALC droughtiness assessment is a crop-related meteorological variable which represents the balance between rainfall and potential evapotranspiration calculated over a critical portion of the growing season.

MB – moisture balance: MB=AP-MD, MB for wheat and potatoes determines limitation by droughtiness

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
1	1	30	MCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	166	48	0	30	30	18	100	0	0	540	102	-12	3a
										EAv	0	30	0	0	100	0	0	0													
	2	41	MCL	0	POOR	12	7			TAv	30	71	20	12	100	0	0	240			30	71	40	12	100	0	0	480			
										EAv	30	71	21	7	100	0	0	147													
	3	49	C	0	GOOD	21	15			TAv	71	120	0	21	100	0	0	0			71	120	0	21	100	0	0	0			
										EAv	71	120	49	15	100	0	0	735													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
2	1	33	MCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	166	48	0	33	33	18	100	0	0	594	104	-10	3a
										EAv	0	33	0	0	100	0	0	0													
	2	40	MCL	0	POOR	12	7			TAv	33	73	17	12	100	0	0	204			33	73	37	12	100	0	0	444			
										EAv	33	73	23	7	100	0	0	161													
	3	47	C	0	GOOD	21	15			TAv	73	120	0	21	100	0	0	0			73	120	0	21	100	0	0	0			
										EAv	73	120	47	15	100	0	0	705													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
3	1	22	HCL	0	GOOD	18				TAv	0	22	22	18	100	0	0	396	170	52	0	22	22	18	100	0	0	396	106	-8	2
										EAv	0	22	0	0	100	0	0	0													
	2	38	MCL	0	POOR	12	7			TAv	22	60	28	12	100	0	0	336			22	60	38	12	100	0	0	456			
										EAv	22	60	10	7	100	0	0	70													
	3	60	C	0	GOOD	21	15			TAv	60	120	0	21	100	0	0	0			60	120	10	21	100	0	0	210			
										EAv	60	120	60	15	100	0	0	900													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
4	1	30	HCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	199	80	0	30	30	18	100	0	0	540	136	22	1
										EAv	0	30	0	0	100	0	0	0													
	2	5	C	0	MODERATE	16	8			TAv	30	35	5	16	100	0	0	80			30	35	5	16	100	0	0	80			
										EAv	30	35	0	8	100	0	0	0													
	3	85	C	0	GOOD	21	15			TAv	35	120	15	21	100	0	0	315			35	120	35	21	100	0	0	735			
										EAv	35	120	70	15	100	0	0	1050													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
5	1	40	MCL	0	GOOD	18				TAv	0	40	40	18	100	0	0	720	139	20	0	40	40	18	100	0	0	720	110	-4	2
										EAv	0	40	0	0	100	0	0	0													
	2	25	MCL	0	POOR	12	7			TAv	40	65	10	12	100	0	0	120			40	65	25	12	100	0	0	300			
										EAv	40	65	15	7	100	0	0	105													
	3	55	C	0	MODERATE	16	8			TAv	65	120	0	16	100	0	0	0			65	120	5	16	100	0	0	80			
										EAv	65	120	55	8	100	0	0	440													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
6	1	25	HCL	0	GOOD	18				TAv	0	25	25	18	100	0	0	450	124	6	0	25	25	18	100	0	0	450	100	-14	3a
										EAv	0	25	0	0	100	0	0	0													
	2	40	HCL	0	POOR	12	7			TAv	25	65	25	12	100	0	0	300			25	65	40	12	100	0	0	480			
										EAv	25	65	15	7	100	0	0	105													
	3	55	C	0	POOR	13	7			TAv	65	120	0	13	100	0	0	0			65	120	5	13	100	0	0	65			
										EAv	65	120	55	7	100	0	0	385													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
7	1	34	HCL	0	GOOD	18				TAv	0	34	34	18	100	0	0	612	129	11	0	34	34	18	100	0	0	612	104	-9	2
										EAv	0	34	0	0	100	0	0	0													
	2	38	HCL	0	POOR	12	7			TAv	34	72	16	12	100	0	0	192			34	72	36	12	100	0	0	432			
										EAv	34	72	22	7	100	0	0	154													
	3	48	C	0	POOR	13	7			TAv	72	120	0	13	100	0	0	0			72	120	0	13	100	0	0	0			
										EAv	72	120	48	7	100	0	0	336													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
8	1	32	HCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	128	10	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	41	HCL	0	POOR	12	7			TAv	32	73	18	12	100	0	0	216			32	73	38	12	100	0	0	456			
										EAv	32	73	23	7	100	0	0	161													
	3	47	C	0	POOR	13	7			TAv	73	120	0	13	100	0	0	0			73	120	0	13	100	0	0	0			
										EAv	73	120	47	7	100	0	0	329													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
9	1	23	HCL	0	GOOD	18				TAv	0	23	23	18	100	0	0	414	155	37	0	23	23	18	100	0	0	414	116	2	2
										EAv	0	23	0	0	100	0	0	0													
	2	39	HCL	0	MODERATE	16	10			TAv	23	62	27	16	100	0	0	432			23	62	39	16	100	0	0	624			
										EAv	23	62	12	10	100	0	0	120													
	3	58	SCL	0	MODERATE	15	10			TAv	62	120	0	15	100	0	0	0			62	120	8	15	100	0	0	120			
										EAv	62	120	58	10	100	0	0	580													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
10	1	26	HCL	0	GOOD	18				TAv	0	26	26	18	100	0	0	468	125	7	0	26	26	18	100	0	0	468	100	-14	3a
										EAv	0	26	0	0	100	0	0	0													
	2	37	HCL	0	POOR	12	7			TAv	26	63	24	12	100	0	0	288			26	63	37	12	100	0	0	444			
										EAv	26	63	13	7	100	0	0	91													
	3	57	C	0	POOR	13	7			TAv	63	120	0	13	100	0	0	0			63	120	7	13	100	0	0	91			
										EAv	63	120	57	7	100	0	0	399													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
11	1	40	HCL	0	GOOD	18				TAv	0	40	40	18	100	0	0	720	133	15	0	40	40	18	100	0	0	720	108	-6	2
										EAv	0	40	0	0	100	0	0	0													
	2	42	HCL	0	POOR	12	7			TAv	40	82	10	12	100	0	0	120			40	82	30	12	100	0	0	360			
										EAv	40	82	32	7	100	0	0	224													
	3	38	C	0	POOR	13	7			TAv	82	120	0	13	100	0	0	0			82	120	0	13	100	0	0	0			
										EAv	82	120	38	7	100	0	0	266													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
12	1	41	HCL	0	GOOD	18				TAv	0	41	41	18	100	0	0	738	134	16	0	41	41	18	100	0	0	738	109	-5	2
										EAv	0	41	0	0	100	0	0	0													
	2	44	HCL	0	POOR	12	7			TAv	41	85	9	12	100	0	0	108			41	85	29	12	100	0	0	348			
										EAv	41	85	35	7	100	0	0	245													
	3	35	C	0	POOR	13	7			TAv	85	120	0	13	100	0	0	0			85	120	0	13	100	0	0	0			
										EAv	85	120	35	7	100	0	0	245													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
14	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	137	19	0	35	35	18	100	0	0	630	119	5	2
										EAv	0	35	0	0	100	0	0	0													
	2	25	MCL	0	MODERATE	16	10			TAv	35	60	15	16	100	0	0	240			35	60	25	16	100	0	0	400			
										EAv	35	60	10	10	100	0	0	100													
	3	40	HCL	0	MODERATE	16	10			TAv	60	100	0	16	100	0	0	0			60	100	10	16	100	0	0	160			
										EAv	60	100	40	10	100	0	0	400													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
15	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	36	HCL	0	POOR	12	7			TAv	35	71	15	12	100	0	0	180			35	71	35	12	100	0	0	420			
										EAv	35	71	21	7	100	0	0	147													
	3	49	C	0	POOR	13	7			TAv	71	120	0	13	100	0	0	0			71	120	0	13	100	0	0	0			
										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
16	1	26	HCL	0	GOOD	18				TAv	0	26	26	18	100	0	0	468	142	24	0	26	26	18	100	0	0	468	117	3	2
										EAv	0	26	0	0	100	0	0	0													
	2	49	HCL	0	MODERATE	16	10			TAv	26	75	24	16	100	0	0	384			26	75	44	16	100	0	0	704			
										EAv	26	75	25	10	100	0	0	250													
	3	45	C	0	POOR	13	7			TAv	75	120	0	13	100	0	0	0			75	120	0	13	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
17	1	28	HCL	5	GOOD	18		1.0	0.5	TAv	0	28	28	18	95	1	5	480	144	25	0	28	28	18	95	1	5	480	104	-10	3a
										EAv	0	28	0	0	95	1	5	0													
	2	25	HCL	0	POOR	12	7			TAv	28	53	22	12	100	0	0	264			28	53	25	12	100	0	0	300			
										EAv	28	53	3	7	100	0	0	21													
	3	67	SCL	0	MODERATE	15	10			TAv	53	120	0	15	100	0	0	0			53	120	17	15	100	0	0	255			
										EAv	53	120	67	10	100	0	0	670													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
18	1	40	C	0	GOOD	17				TAv	0	40	40	17	100	0	0	680	129	11	0	40	40	17	100	0	0	680	104	-10	2
										EAv	0	40	0	0	100	0	0	0													
	2	41	HCL	0	POOR	12	7			TAv	40	81	10	12	100	0	0	120			40	81	30	12	100	0	0	360			
										EAv	40	81	31	7	100	0	0	217													
	3	39	C	0	POOR	13	7			TAv	81	120	0	13	100	0	0	0			81	120	0	13	100	0	0	0			
										EAv	81	120	39	7	100	0	0	273													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
19	1	33	HCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	143	25	0	33	33	18	100	0	0	594	122	8	2
										EAv	0	33	0	0	100	0	0	0													
	2	36	HZCL	0	MODERATE	17	10			TAv	33	69	17	17	100	0	0	289			33	69	36	17	100	0	0	612			
										EAv	33	69	19	10	100	0	0	190													
	3	51	HCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
20	1	30	MCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	139	20	0	30	30	18	100	0	0	540	116	2	2
										EAv	0	30	0	0	100	0	0	0													
	2	25	HZCL	0	MODERATE	17	10			TAv	30	55	20	17	100	0	0	340			30	55	25	17	100	0	0	425			
										EAv	30	55	5	10	100	0	0	50													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
21	1	27	HCL	0	GOOD	18				TAv	0	27	27	18	100	0	0	486	137	19	0	27	27	18	100	0	0	486	114	0	2
										EAv	0	27	0	0	100	0	0	0													
	2	23	HZCL	0	MODERATE	17	10			TAv	27	50	23	17	100	0	0	391			27	50	23	17	100	0	0	391			
										EAv	27	50	0	10	100	0	0	0													
	3	70	C	0	POOR	13	7			TAv	50	120	0	13	100	0	0	0			50	120	20	13	100	0	0	260			
										EAv	50	120	70	7	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
22	1	25	HCL	0	GOOD	18				TAv	0	25	25	18	100	0	0	450	135	17	0	25	25	18	100	0	0	450	112	-2	2
										EAv	0	25	0	0	100	0	0	0													
	2	27	HCL	0	MODERATE	16	10			TAv	25	52	25	16	100	0	0	400			25	52	27	16	100	0	0	432			
										EAv	25	52	2	10	100	0	0	20													
	3	68	C	0	POOR	13	7			TAv	52	120	0	13	100	0	0	0			52	120	18	13	100	0	0	234			
										EAv	52	120	68	7	100	0	0	476													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
23	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	35	HCL	0	POOR	12	7			TAv	35	70	15	12	100	0	0	180			35	70	35	12	100	0	0	420			
										EAv	35	70	20	7	100	0	0	140													
	3	50	C	0	POOR	13	7			TAv	70	120	0	13	100	0	0	0			70	120	0	13	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
24	1	33	HCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	129	11	0	33	33	18	100	0	0	594	104	-10	3a
										EAv	0	33	0	0	100	0	0	0													
	2	37	HCL	0	POOR	12	7			TAv	33	70	17	12	100	0	0	204			33	70	37	12	100	0	0	444			
										EAv	33	70	20	7	100	0	0	140													
	3	50	C	0	POOR	13	7			TAv	70	120	0	13	100	0	0	0			70	120	0	13	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
25	1	29	HCL	0	GOOD	18				TAv	0	29	29	18	100	0	0	522	131	13	0	29	29	18	100	0	0	522	116	2	2
										EAv	0	29	0	0	100	0	0	0													
	2	23	HCL	0	MODERATE	16	10			TAv	29	52	21	16	100	0	0	336			29	52	23	16	100	0	0	368			
										EAv	29	52	2	10	100	0	0	20													
	3	43	SCL	0	MODERATE	15	10			TAv	52	95	0	15	100	0	0	0			52	95	18	15	100	0	0	270			
										EAv	52	95	43	10	100	0	0	430													
	4									TAv	95	95	0	0	100	0	0	0			95	95	0	0	100	0	0	0			
										EAv	95	95	0	0	100	0	0	0													
	5									TAv	95	95	0	0	100	0	0	0			95	95	0	0	100	0	0	0			
										EAv	95	95	0	0	100	0	0	0													
26	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	131	13	0	36	36	18	100	0	0	648	106	-8	2
										EAv	0	36	0	0	100	0	0	0													
	2	33	HCL	0	POOR	12	7			TAv	36	69	14	12	100	0	0	168			36	69	33	12	100	0	0	396			
										EAv	36	69	19	7	100	0	0	133													
	3	51	C	0	POOR	13	7			TAv	69	120	0	13	100	0	0	0			69	120	1	13	100	0	0	13			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
27	1	37	HCL	0	GOOD	18				TAv	0	37	37	18	100	0	0	666	131	13	0	37	37	18	100	0	0	666	108	-6	2
										EAv	0	37	0	0	100	0	0	0													
	2	20	HCL	0	POOR	12	7			TAv	37	57	13	12	100	0	0	156			37	57	20	12	100	0	0	240			
										EAv	37	57	7	7	100	0	0	49													
	3	63	C	0	POOR	13	7			TAv	57	120	0	13	100	0	0	0			57	120	13	13	100	0	0	169			
										EAv	57	120	63	7	100	0	0	441													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
28	1	27	HCL	0	GOOD	18				TAv	0	27	27	18	100	0	0	486	134	16	0	27	27	18	100	0	0	486	111	-3	2
										EAv	0	27	0	0	100	0	0	0													
	2	22	HCL	0	MODERATE	16	10			TAv	27	49	22	16	100	0	0	352			27	49	22	16	100	0	0	352			
										EAv	27	49	0	10	100	0	0	0													
	3	71	C	0	POOR	13	7			TAv	49	120	1	13	100	0	0	13			49	120	21	13	100	0	0	273			
										EAv	49	120	70	7	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
29	1	26	HCL	0	GOOD	18				TAv	0	26	26	18	100	0	0	468	135	16	0	26	26	18	100	0	0	468	112	-2	2
										EAv	0	26	0	0	100	0	0	0													
	2	25	HCL	0	MODERATE	16	10			TAv	26	51	24	16	100	0	0	384			26	51	25	16	100	0	0	400			
										EAv	26	51	1	10	100	0	0	10													
	3	69	C	0	POOR	13	7			TAv	51	120	0	13	100	0	0	0			51	120	19	13	100	0	0	247			
										EAv	51	120	69	7	100	0	0	483													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
30	1	40	MCL	0	GOOD	18				TAv	0	40	40	18	100	0	0	720	149	31	0	40	40	18	100	0	0	720	126	12	1
										EAv	0	40	0	0	100	0	0	0													
	2	20	MCL	0	GOOD	21	14			TAv	40	60	10	21	100	0	0	210			40	60	20	21	100	0	0	420			
										EAv	40	60	10	14	100	0	0	140													
	3	60	HCL	0	POOR	12	7			TAv	60	120	0	12	100	0	0	0			60	120	10	12	100	0	0	120			
										EAv	60	120	60	7	100	0	0	420													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
31	1	39	MCL	0	GOOD	18				TAv	0	39	39	18	100	0	0	702	146	28	0	39	39	18	100	0	0	702	106	-8	2
										EAv	0	39	0	0	100	0	0	0													
	2	32	HCL	5	POOR	12	7	3.0	2.0	TAv	39	71	11	12	95	3	5	127			39	71	31	12	95	3	5	358			
										EAv	39	71	21	7	95	2	5	142													
	3	49	HCL	0	MODERATE	16	10			TAv	71	120	0	16	100	0	0	0			71	120	0	16	100	0	0	0			
										EAv	71	120	49	10	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
32	1	36	MCL	10	GOOD	18		3.0	2.0	TAv	0	36	36	18	90	3	10	594	135	17	0	36	36	18	90	3	10	594	96	-18	3a
										EAv	0	36	0	0	90	2	10	0													
	2	38	HCL	15	POOR	12	7	3.0	2.0	TAv	36	74	14	12	85	3	15	149			36	74	34	12	85	3	15	362			
										EAv	36	74	24	7	85	2	15	150													
	3	46	HCL	0	MODERATE	16	10			TAv	74	120	0	16	100	0	0	0			74	120	0	16	100	0	0	0			
										EAv	74	120	46	10	100	0	0	460													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
33	1	37	MCL	10	GOOD	18		3.0	2.0	TAv	0	37	37	18	90	3	10	611	137	19	0	37	37	18	90	3	10	611	98	-16	3a
										EAv	0	37	0	0	90	2	10	0													
	2	38	HCL	10	POOR	12	7	3.0	2.0	TAv	37	75	13	12	90	3	10	144			37	75	33	12	90	3	10	366			
										EAv	37	75	25	7	90	2	10	163													
	3	45	HCL	0	MODERATE	16	10			TAv	75	120	0	16	100	0	0	0			75	120	0	16	100	0	0	0			
										EAv	75	120	45	10	100	0	0	450													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
34	1	35	MCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	144	25	0	35	35	18	100	0	0	630	103	-10	3a
										EAv	0	35	0	0	100	0	0	0													
	2	36	MCL	5	POOR	12	7	3.0	2.0	TAv	35	71	15	12	95	3	5	173			35	71	35	12	95	3	5	404			
										EAv	35	71	21	7	95	2	5	142													
	3	49	HCL	0	MODERATE	16	10			TAv	71	120	0	16	100	0	0	0			71	120	0	16	100	0	0	0			
										EAv	71	120	49	10	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
35	1	32	MCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	143	25	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	40	MCL	0	POOR	12	7			TAv	32	72	18	12	100	0	0	216			32	72	38	12	100	0	0	456			
										EAv	32	72	22	7	100	0	0	154													
	3	48	HCL	0	MODERATE	16	10			TAv	72	120	0	16	100	0	0	0			72	120	0	16	100	0	0	0			
										EAv	72	120	48	10	100	0	0	480													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
36	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	132	14	0	36	36	18	100	0	0	648	109	-5	2
										EAv	0	36	0	0	100	0	0	0													
	2	42	C	0	POOR	13	7			TAv	36	78	14	13	100	0	0	182			36	78	34	13	100	0	0	442			
										EAv	36	78	28	7	100	0	0	196													
	3	42	HCL	0	POOR	12	7			TAv	78	120	0	12	100	0	0	0			78	120	0	12	100	0	0	0			
										EAv	78	120	42	7	100	0	0	294													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
37	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	132	13	0	35	35	18	100	0	0	630	109	-5	2
										EAv	0	35	0	0	100	0	0	0													
	2	41	C	0	POOR	13	7			TAv	35	76	15	13	100	0	0	195			35	76	35	13	100	0	0	455			
										EAv	35	76	26	7	100	0	0	182													
	3	44	HCL	0	POOR	12	7			TAv	76	120	0	12	100	0	0	0			76	120	0	12	100	0	0	0			
										EAv	76	120	44	7	100	0	0	308													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
38	1	38	HCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	132	14	0	38	38	18	100	0	0	684	107	-7	2
										EAv	0	38	0	0	100	0	0	0													
	2	18	HCL	0	POOR	12	7			TAv	38	56	12	12	100	0	0	144			38	56	18	12	100	0	0	216			
										EAv	38	56	6	7	100	0	0	42													
	3	64	HCL	0	POOR	12	7			TAv	56	120	0	12	100	0	0	0			56	120	14	12	100	0	0	168			
										EAv	56	120	64	7	100	0	0	448													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
39	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	20	HCL	0	POOR	12	7			TAv	35	55	15	12	100	0	0	180			35	55	20	12	100	0	0	240			
										EAv	35	55	5	7	100	0	0	35													
	3	65	HCL	0	POOR	12	7			TAv	55	120	0	12	100	0	0	0			55	120	15	12	100	0	0	180			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
40	1	22	HCL	0	GOOD	18				TAv	0	22	22	18	100	0	0	396	125	7	0	22	22	18	100	0	0	396	101	-13	3a
										EAv	0	22	0	0	100	0	0	0													
	2	33	C	0	POOR	13	7			TAv	22	55	28	13	100	0	0	364			22	55	33	13	100	0	0	429			
										EAv	22	55	5	7	100	0	0	35													
	3	65	HCL	0	POOR	12	7			TAv	55	120	0	12	100	0	0	0			55	120	15	12	100	0	0	180			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
41	1	23	HCL	0	GOOD	18				TAv	0	23	23	18	100	0	0	414	126	7	0	23	23	18	100	0	0	414	101	-13	3a
										EAv	0	23	0	0	100	0	0	0													
	2	28	C	0	POOR	13	7			TAv	23	51	27	13	100	0	0	351			23	51	28	13	100	0	0	364			
										EAv	23	51	1	7	100	0	0	7													
	3	69	HCL	0	POOR	12	7			TAv	51	120	0	12	100	0	0	0			51	120	19	12	100	0	0	228			
										EAv	51	120	69	7	100	0	0	483													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
42	1	39	HCL	5	GOOD	18		3.0	2.0	TAv	0	39	39	18	95	3	5	673	141	23	0	39	39	18	95	3	5	673	103	-11	3a
										EAv	0	39	0	0	95	2	5	0													
	2	34	C	15	POOR	13	7	3.0	2.0	TAv	39	73	11	13	85	3	15	127			39	73	31	13	85	3	15	357			
										EAv	39	73	23	7	85	2	15	144													
	3	47	HCL	0	MODERATE	16	10			TAv	73	120	0	16	100	0	0	0			73	120	0	16	100	0	0	0			
										EAv	73	120	47	10	100	0	0	470													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
43	1	29	HCL	5	GOOD	18		3.0	2.0	TAv	0	29	29	18	95	3	5	500	123	5	0	29	29	18	95	3	5	500	97	-16	3a
										EAv	0	29	0	0	95	2	5	0													
	2	40	HCL	5	POOR	12	7	3.0	2.0	TAv	29	69	21	12	95	3	5	243			29	69	40	12	95	3	5	462			
										EAv	29	69	19	7	95	2	5	128													
	3	51	HCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
44	1	32	MCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	128	10	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	13	MCL	0	POOR	12	7			TAv	32	45	13	12	100	0	0	156			32	45	13	12	100	0	0	156			
										EAv	32	45	0	7	100	0	0	0													
	3	75	HCL	0	POOR	12	7			TAv	45	120	5	12	100	0	0	60			45	120	25	12	100	0	0	300			
										EAv	45	120	70	7	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
45	1	36	MCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	131	13	0	36	36	18	100	0	0	648	106	-8	2
										EAv	0	36	0	0	100	0	0	0													
	2	18	MCL	0	POOR	12	7			TAv	36	54	14	12	100	0	0	168			36	54	18	12	100	0	0	216			
										EAv	36	54	4	7	100	0	0	28													
	3	66	HCL	0	POOR	12	7			TAv	54	120	0	12	100	0	0	0			54	120	16	12	100	0	0	192			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
46	1	28	MCL	5	GOOD	18		3.0	2.0	TAv	0	28	28	18	95	3	5	483	124	6	0	28	28	18	95	3	5	483	99	-15	3a
										EAv	0	28	0	0	95	2	5	0													
	2	42	MCL	0	POOR	12	7			TAv	28	70	22	12	100	0	0	264			28	70	42	12	100	0	0	504			
										EAv	28	70	20	7	100	0	0	140													
	3	50	HCL	0	POOR	12	7			TAv	70	120	0	12	100	0	0	0			70	120	0	12	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
47	1	25	MCL	0	GOOD	18				TAv	0	25	25	18	100	0	0	450	139	21	0	25	25	18	100	0	0	450	116	2	2
										EAv	0	25	0	0	100	0	0	0													
	2	43	MCL	0	MODERATE	16	10			TAv	25	68	25	16	100	0	0	400			25	68	43	16	100	0	0	688			
										EAv	25	68	18	10	100	0	0	180													
	3	52	HCL	0	POOR	12	7			TAv	68	120	0	12	100	0	0	0			68	120	2	12	100	0	0	24			
										EAv	68	120	52	7	100	0	0	364													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
48	1	45	MCL	0	GOOD	18				TAv	0	45	45	18	100	0	0	810	144	26	0	45	45	18	100	0	0	810	121	7	2
										EAv	0	45	0	0	100	0	0	0													
	2	25	MCL	0	MODERATE	16	10			TAv	45	70	5	16	100	0	0	80			45	70	25	16	100	0	0	400			
										EAv	45	70	20	10	100	0	0	200													
	3	50	HCL	0	POOR	12	7			TAv	70	120	0	12	100	0	0	0			70	120	0	12	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
49	1	31	MCL	0	GOOD	18				TAv	0	31	31	18	100	0	0	558	144	26	0	31	31	18	100	0	0	558	118	4	2
										EAv	0	31	0	0	100	0	0	0													
	2	49	MCL	0	MODERATE	16	10			TAv	31	80	19	16	100	0	0	304			31	80	39	16	100	0	0	624			
										EAv	31	80	30	10	100	0	0	300													
	3	40	HCL	0	POOR	12	7			TAv	80	120	0	12	100	0	0	0			80	120	0	12	100	0	0	0			
										EAv	80	120	40	7	100	0	0	280													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
50	1	38	MCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	147	29	0	38	38	18	100	0	0	684	120	6	2
										EAv	0	38	0	0	100	0	0	0													
	2	47	MCL	0	MODERATE	16	10			TAv	38	85	12	16	100	0	0	192			38	85	32	16	100	0	0	512			
										EAv	38	85	35	10	100	0	0	350													
	3	35	HCL	0	POOR	12	7			TAv	85	120	0	12	100	0	0	0			85	120	0	12	100	0	0	0			
										EAv	85	120	35	7	100	0	0	245													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
51	1	31	HCL	0	GOOD	18				TAv	0	31	31	18	100	0	0	558	136	17	0	31	31	18	100	0	0	558	111	-3	2
										EAv	0	31	0	0	100	0	0	0													
	2	20	HCL	0	MODERATE	16	10			TAv	31	51	19	16	100	0	0	304			31	51	20	16	100	0	0	320			
										EAv	31	51	1	10	100	0	0	10													
	3	69	HCL	0	POOR	12	7			TAv	51	120	0	12	100	0	0	0			51	120	19	12	100	0	0	228			
										EAv	51	120	69	7	100	0	0	483													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
52	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	40	HCL	0	POOR	12	7			TAv	35	75	15	12	100	0	0	180			35	75	35	12	100	0	0	420			
										EAv	35	75	25	7	100	0	0	175													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
53	1	37	HCL	0	GOOD	18				TAv	0	37	37	18	100	0	0	666	131	13	0	37	37	18	100	0	0	666	106	-8	2
										EAv	0	37	0	0	100	0	0	0													
	2	41	HCL	0	POOR	12	7			TAv	37	78	13	12	100	0	0	156			37	78	33	12	100	0	0	396			
										EAv	37	78	28	7	100	0	0	196													
	3	42	HCL	0	POOR	12	7			TAv	78	120	0	12	100	0	0	0			78	120	0	12	100	0	0	0			
										EAv	78	120	42	7	100	0	0	294													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
54	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	131	13	0	36	36	18	100	0	0	648	106	-8	2
										EAv	0	36	0	0	100	0	0	0													
	2	23	HCL	0	POOR	12	7			TAv	36	59	14	12	100	0	0	168			36	59	23	12	100	0	0	276			
										EAv	36	59	9	7	100	0	0	63													
	3	61	HCL	0	POOR	12	7			TAv	59	120	0	12	100	0	0	0			59	120	11	12	100	0	0	132			
										EAv	59	120	61	7	100	0	0	427													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
55	1	28	HCL	0	GOOD	18				TAv	0	28	28	18	100	0	0	504	126	8	0	28	28	18	100	0	0	504	101	-13	3a
										EAv	0	28	0	0	100	0	0	0													
	2	47	HCL	0	POOR	12	7			TAv	28	75	22	12	100	0	0	264			28	75	42	12	100	0	0	504			
										EAv	28	75	25	7	100	0	0	175													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
56	1	38	C	5	GOOD	17		3.0	2.0	TAv	0	38	38	17	95	3	5	619	134	15	0	38	38	17	95	3	5	619	96	-18	3a
										EAv	0	38	0	0	95	2	5	0													
	2	37	HCL	15	POOR	12	7	3.0	2.0	TAv	38	75	12	12	85	3	15	128			38	75	32	12	85	3	15	341			
										EAv	38	75	25	7	85	2	15	156													
	3	45	HCL	5	MODERATE	16	10	3.0	2.0	TAv	75	120	0	16	95	3	5	0			75	120	0	16	95	3	5	0			
										EAv	75	120	45	10	95	2	5	432													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
57	1	39	C	5	GOOD	17		3.0	2.0	TAv	0	39	39	17	95	3	5	636	135	17	0	39	39	17	95	3	5	636	97	-17	3a
										EAv	0	39	0	0	95	2	5	0													
	2	38	HCL	15	POOR	12	7	3.0	2.0	TAv	39	77	11	12	85	3	15	117			39	77	31	12	85	3	15	330			
										EAv	39	77	27	7	85	2	15	169													
	3	43	HCL	0	MODERATE	16	10			TAv	77	120	0	16	100	0	0	0			77	120	0	16	100	0	0	0			
										EAv	77	120	43	10	100	0	0	430													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
58	1	37	C	10	GOOD	17		3.0	2.0	TAv	0	37	37	17	90	3	10	577	133	14	0	37	37	17	90	3	10	577	91	-22	3a
										EAv	0	37	0	0	90	2	10	0													
	2	34	HCL	20	POOR	12	7	3.0	2.0	TAv	37	71	13	12	80	3	20	133			37	71	33	12	80	3	20	337			
										EAv	37	71	21	7	80	2	20	126													
	3	49	HCL	0	MODERATE	16	10			TAv	71	120	0	16	100	0	0	0			71	120	0	16	100	0	0	0			
										EAv	71	120	49	10	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
59	1	27	MCL	0	GOOD	18				TAv	0	27	27	18	100	0	0	486	136	18	0	27	27	18	100	0	0	486	111	-3	2
										EAv	0	27	0	0	100	0	0	0													
	2	27	HCL	0	MODERATE	16	10			TAv	27	54	23	16	100	0	0	368			27	54	27	16	100	0	0	432			
										EAv	27	54	4	10	100	0	0	40													
	3	66	MCL	0	POOR	12	7			TAv	54	120	0	12	100	0	0	0			54	120	16	12	100	0	0	192			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
60	1	38	MCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	132	14	0	38	38	18	100	0	0	684	107	-7	2
										EAv	0	38	0	0	100	0	0	0													
	2	22	HCL	0	POOR	12	7			TAv	38	60	12	12	100	0	0	144			38	60	22	12	100	0	0	264			
										EAv	38	60	10	7	100	0	0	70													
	3	60	HCL	0	POOR	12	7			TAv	60	120	0	12	100	0	0	0			60	120	10	12	100	0	0	120			
										EAv	60	120	60	7	100	0	0	420													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
61	1	32	MCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	128	10	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	31	HCL	0	POOR	12	7			TAv	32	63	18	12	100	0	0	216			32	63	31	12	100	0	0	372			
										EAv	32	63	13	7	100	0	0	91													
	3	57	HCL	0	POOR	12	7			TAv	63	120	0	12	100	0	0	0			63	120	7	12	100	0	0	84			
										EAv	63	120	57	7	100	0	0	399													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
62	1	25	MCL	0	GOOD	18				TAv	0	25	25	18	100	0	0	450	120	2	0	25	25	18	100	0	0	450	94	-20	3a
										EAv	0	25	0	0	100	0	0	0													
	2	46	HCL	10	POOR	12	7	1.0	0.5	TAv	25	71	25	12	90	1	10	273			25	71	45	12	90	1	10	491			
										EAv	25	71	21	7	90	1	10	133													
	3	49	HCL	0	POOR	12	7			TAv	71	120	0	12	100	0	0	0			71	120	0	12	100	0	0	0			
										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
63	1	29	MCL	0	GOOD	18				TAv	0	29	29	18	100	0	0	522	126	8	0	29	29	18	100	0	0	522	101	-12	3a
										EAv	0	29	0	0	100	0	0	0													
	2	66	HCL	0	POOR	12	7			TAv	29	95	21	12	100	0	0	252			29	95	41	12	100	0	0	492			
										EAv	29	95	45	7	100	0	0	315													
	3	25	HCL	0	POOR	12	7			TAv	95	120	0	12	100	0	0	0			95	120	0	12	100	0	0	0			
										EAv	95	120	25	7	100	0	0	175													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
64	1	34	MCL	0	GOOD	18				TAv	0	34	34	18	100	0	0	612	157	39	0	34	34	18	100	0	0	612	136	22	1
										EAv	0	34	0	0	100	0	0	0													
	2	35	HCL	0	GOOD	21	14			TAv	34	69	16	21	100	0	0	336			34	69	35	21	100	0	0	735			
										EAv	34	69	19	14	100	0	0	266													
	3	51	HCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
65	1	40	MCL	0	GOOD	18				TAv	0	40	40	18	100	0	0	720	143	25	0	40	40	18	100	0	0	720	120	6	2
										EAv	0	40	0	0	100	0	0	0													
	2	30	HCL	0	MODERATE	16	10			TAv	40	70	10	16	100	0	0	160			40	70	30	16	100	0	0	480			
										EAv	40	70	20	10	100	0	0	200													
	3	50	HCL	0	POOR	12	7			TAv	70	120	0	12	100	0	0	0			70	120	0	12	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
66	1	42	MCL	0	GOOD	18				TAv	0	42	42	18	100	0	0	756	145	27	0	42	42	18	100	0	0	756	120	7	2
										EAv	0	42	0	0	100	0	0	0													
	2	33	HCL	0	MODERATE	16	10			TAv	42	75	8	16	100	0	0	128			42	75	28	16	100	0	0	448			
										EAv	42	75	25	10	100	0	0	250													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
67	1	41	MCL	0	GOOD	18				TAv	0	41	41	18	100	0	0	738	145	27	0	41	41	18	100	0	0	738	120	6	2
										EAv	0	41	0	0	100	0	0	0													
	2	34	HCL	0	MODERATE	16	10			TAv	41	75	9	16	100	0	0	144			41	75	29	16	100	0	0	464			
										EAv	41	75	25	10	100	0	0	250													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
68	1	33	HCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	137	19	0	33	33	18	100	0	0	594	114	0	2
										EAv	0	33	0	0	100	0	0	0													
	2	21	HCL	0	MODERATE	16	10			TAv	33	54	17	16	100	0	0	272			33	54	21	16	100	0	0	336			
										EAv	33	54	4	10	100	0	0	40													
	3	66	C	0	POOR	13	7			TAv	54	120	0	13	100	0	0	0			54	120	16	13	100	0	0	208			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
69	1	32	HCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	136	18	0	32	32	18	100	0	0	576	113	-1	2
										EAv	0	32	0	0	100	0	0	0													
	2	20	HCL	0	MODERATE	16	10			TAv	32	52	18	16	100	0	0	288			32	52	20	16	100	0	0	320			
										EAv	32	52	2	10	100	0	0	20													
	3	68	C	0	POOR	13	7			TAv	52	120	0	13	100	0	0	0			52	120	18	13	100	0	0	234			
										EAv	52	120	68	7	100	0	0	476													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
70	1	30	HCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	136	18	0	30	30	18	100	0	0	540	113	-1	2
										EAv	0	30	0	0	100	0	0	0													
	2	23	HCL	0	MODERATE	16	10			TAv	30	53	20	16	100	0	0	320			30	53	23	16	100	0	0	368			
										EAv	30	53	3	10	100	0	0	30													
	3	67	C	0	POOR	13	7			TAv	53	120	0	13	100	0	0	0			53	120	17	13	100	0	0	221			
										EAv	53	120	67	7	100	0	0	469													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
71	1	33	HCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	131	12	0	33	33	18	100	0	0	594	108	-6	2
										EAv	0	33	0	0	100	0	0	0													
	2	22	C	0	POOR	13	7			TAv	33	55	17	13	100	0	0	221			33	55	22	13	100	0	0	286			
										EAv	33	55	5	7	100	0	0	35													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
72	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	132	13	0	35	35	18	100	0	0	630	109	-5	2
										EAv	0	35	0	0	100	0	0	0													
	2	40	C	0	POOR	13	7			TAv	35	75	15	13	100	0	0	195			35	75	35	13	100	0	0	455			
										EAv	35	75	25	7	100	0	0	175													
	3	45	C	0	POOR	13	7			TAv	75	120	0	13	100	0	0	0			75	120	0	13	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
73	1	38	HCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	137	19	0	38	38	18	100	0	0	684	114	0	2
										EAv	0	38	0	0	100	0	0	0													
	2	13	HCL	0	MODERATE	16	10			TAv	38	51	12	16	100	0	0	192			38	51	13	16	100	0	0	208			
										EAv	38	51	1	10	100	0	0	10													
	3	69	C	0	POOR	13	7			TAv	51	120	0	13	100	0	0	0			51	120	19	13	100	0	0	247			
										EAv	51	120	69	7	100	0	0	483													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
74	1	31	HCL	0	GOOD	18				TAv	0	31	31	18	100	0	0	558	136	18	0	31	31	18	100	0	0	558	113	0	2
										EAv	0	31	0	0	100	0	0	0													
	2	27	C	0	MODERATE	16	8			TAv	31	58	19	16	100	0	0	304			31	58	27	16	100	0	0	432			
										EAv	31	58	8	8	100	0	0	64													
	3	62	HCL	0	POOR	12	7			TAv	58	120	0	12	100	0	0	0			58	120	12	12	100	0	0	144			
										EAv	58	120	62	7	100	0	0	434													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
75	1	30	SCL	10	GOOD	17		10.0	7.0	TAv	0	30	30	17	90	10	10	489	124	6	0	30	30	17	90	10	10	489	98	-16	3a
										EAv	0	30	0	0	90	7	10	0													
	2	30	SCL	55	MODERATE	15	10	10.0	7.0	TAv	30	60	20	15	45	10	55	245			30	60	30	15	45	10	55	368			
										EAv	30	60	10	10	45	7	55	84													
	3	60	HCL	0	POOR	12	7			TAv	60	120	0	12	100	0	0	0			60	120	10	12	100	0	0	120			
										EAv	60	120	60	7	100	0	0	420													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
76	1	38	SCL	10	GOOD	17		3.0	2.0	TAv	0	38	38	17	90	3	10	593	132	14	0	38	38	17	90	3	10	593	105	-9	2
										EAv	0	38	0	0	90	2	10	0													
	2	37	SCL	15	MODERATE	15	10	10.0	7.0	TAv	38	75	12	15	85	10	15	171			38	75	32	15	85	10	15	456			
										EAv	38	75	25	10	85	7	15	239													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
77	1	36	MCL	5	GOOD	18		3.0	2.0	TAv	0	36	36	18	95	3	5	621	139	21	0	36	36	18	95	3	5	621	116	2	2
										EAv	0	36	0	0	95	2	5	0													
	2	33	MCL	0	MODERATE	16	10			TAv	36	69	14	16	100	0	0	224			36	69	33	16	100	0	0	528			
										EAv	36	69	19	10	100	0	0	190													
	3	51	HCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
78	1	30	MCL	10	GOOD	18		3.0	2.0	TAv	0	30	30	18	90	3	10	495	134	16	0	30	30	18	90	3	10	495	123	9	2
										EAv	0	30	0	0	90	2	10	0													
	2	30	C	10	GOOD	21	15	3.0	2.0	TAv	30	60	20	21	90	3	10	384			30	60	30	21	90	3	10	576			
										EAv	30	60	10	15	90	2	10	137													
	3	40	C	0	MODERATE	16	8			TAv	60	100	0	16	100	0	0	0			60	100	10	16	100	0	0	160			
										EAv	60	100	40	8	100	0	0	320													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
79	1	34	MCL	0	GOOD	18				TAv	0	34	34	18	100	0	0	612	124	6	0	34	34	18	100	0	0	612	104	-9	2
										EAv	0	34	0	0	100	0	0	0													
	2	36	MCL	0	POOR	12	7			TAv	34	70	16	12	100	0	0	192			34	70	36	12	100	0	0	432			
										EAv	34	70	20	7	100	0	0	140													
	3	30	HCL	0	MODERATE	16	10			TAv	70	100	0	16	100	0	0	0			70	100	0	16	100	0	0	0			
										EAv	70	100	30	10	100	0	0	300													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
80	1	31	MCL	0	GOOD	18				TAv	0	31	31	18	100	0	0	558	156	38	0	31	31	18	100	0	0	558	118	4	2
										EAv	0	31	0	0	100	0	0	0													
	2	40	MCL	0	MODERATE	16	10			TAv	31	71	19	16	100	0	0	304			31	71	39	16	100	0	0	624			
										EAv	31	71	21	10	100	0	0	210													
	3	49	HCL	0	MODERATE	16	10			TAv	71	120	0	16	100	0	0	0			71	120	0	16	100	0	0	0			
										EAv	71	120	49	10	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
81	1	30	HCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	142	24	0	30	30	18	100	0	0	540	112	-2	2
										EAv	0	30	0	0	100	0	0	0													
	2	20	MCL	0	MODERATE	16	10			TAv	30	50	20	16	100	0	0	320			30	50	20	16	100	0	0	320			
										EAv	30	50	0	10	100	0	0	0													
	3	70	SCL	0	POOR	13	8			TAv	50	120	0	13	100	0	0	0			50	120	20	13	100	0	0	260			
										EAv	50	120	70	8	100	0	0	560													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
82	1	35	MCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	146	28	0	35	35	18	100	0	0	630	119	5	2
										EAv	0	35	0	0	100	0	0	0													
	2	47	MCL	0	MODERATE	16	10			TAv	35	82	15	16	100	0	0	240			35	82	35	16	100	0	0	560			
										EAv	35	82	32	10	100	0	0	320													
	3	38	HCL	0	POOR	12	7			TAv	82	120	0	12	100	0	0	0			82	120	0	12	100	0	0	0			
										EAv	82	120	38	7	100	0	0	266													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
83	1	35	MCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	143	25	0	35	35	18	100	0	0	630	119	5	2
										EAv	0	35	0	0	100	0	0	0													
	2	37	MCL	0	MODERATE	16	10			TAv	35	72	15	16	100	0	0	240			35	72	35	16	100	0	0	560			
										EAv	35	72	22	10	100	0	0	220													
	3	48	HCL	0	POOR	12	7			TAv	72	120	0	12	100	0	0	0			72	120	0	12	100	0	0	0			
										EAv	72	120	48	7	100	0	0	336													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
84	1	37	MCL	0	GOOD	18				TAv	0	37	37	18	100	0	0	666	146	28	0	37	37	18	100	0	0	666	119	6	2
										EAv	0	37	0	0	100	0	0	0													
	2	45	MCL	0	MODERATE	16	10			TAv	37	82	13	16	100	0	0	208			37	82	33	16	100	0	0	528			
										EAv	37	82	32	10	100	0	0	320													
	3	38	HCL	0	POOR	12	7			TAv	82	120	0	12	100	0	0	0			82	120	0	12	100	0	0	0			
										EAv	82	120	38	7	100	0	0	266													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
85	1	37	MCL	0	GOOD	18				TAv	0	37	37	18	100	0	0	666	144	26	0	37	37	18	100	0	0	666	119	6	2
										EAv	0	37	0	0	100	0	0	0													
	2	38	MCL	0	MODERATE	16	10			TAv	37	75	13	16	100	0	0	208			37	75	33	16	100	0	0	528			
										EAv	37	75	25	10	100	0	0	250													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
86	1	30	MCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	141	23	0	30	30	18	100	0	0	540	118	4	2
										EAv	0	30	0	0	100	0	0	0													
	2	39	MCL	0	MODERATE	16	10			TAv	30	69	20	16	100	0	0	320			30	69	39	16	100	0	0	624			
										EAv	30	69	19	10	100	0	0	190													
	3	51	HCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
87	1	33	HCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	136	18	0	33	33	18	100	0	0	594	114	0	2
										EAv	0	33	0	0	100	0	0	0													
	2	22	C	0	MODERATE	16	8			TAv	33	55	17	16	100	0	0	272			33	55	22	16	100	0	0	352			
										EAv	33	55	5	8	100	0	0	40													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
88	1	30	HCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	135	17	0	30	30	18	100	0	0	540	113	-1	2
										EAv	0	30	0	0	100	0	0	0													
	2	23	C	0	MODERATE	16	8			TAv	30	53	20	16	100	0	0	320			30	53	23	16	100	0	0	368			
										EAv	30	53	3	8	100	0	0	24													
	3	67	C	0	POOR	13	7			TAv	53	120	0	13	100	0	0	0			53	120	17	13	100	0	0	221			
										EAv	53	120	67	7	100	0	0	469													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
89	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	132	14	0	36	36	18	100	0	0	648	109	-5	2
										EAv	0	36	0	0	100	0	0	0													
	2	20	C	0	POOR	13	7			TAv	36	56	14	13	100	0	0	182			36	56	20	13	100	0	0	260			
										EAv	36	56	6	7	100	0	0	42													
	3	64	C	0	POOR	13	7			TAv	56	120	0	13	100	0	0	0			56	120	14	13	100	0	0	182			
										EAv	56	120	64	7	100	0	0	448													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
90	1	25	C	0	GOOD	17				TAv	0	25	25	17	100	0	0	425	124	6	0	25	25	17	100	0	0	425	101	-13	3a
										EAv	0	25	0	0	100	0	0	0													
	2	28	C	0	POOR	13	7			TAv	25	53	25	13	100	0	0	325			25	53	28	13	100	0	0	364			
										EAv	25	53	3	7	100	0	0	21													
	3	67	C	0	POOR	13	7			TAv	53	120	0	13	100	0	0	0			53	120	17	13	100	0	0	221			
										EAv	53	120	67	7	100	0	0	469													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
91	1	25	C	0	GOOD	17				TAv	0	25	25	17	100	0	0	425	124	6	0	25	25	17	100	0	0	425	101	-13	3a
										EAv	0	25	0	0	100	0	0	0													
	2	32	C	0	POOR	13	7			TAv	25	57	25	13	100	0	0	325			25	57	32	13	100	0	0	416			
										EAv	25	57	7	7	100	0	0	49													
	3	63	C	0	POOR	13	7			TAv	57	120	0	13	100	0	0	0			57	120	13	13	100	0	0	169			
										EAv	57	120	63	7	100	0	0	441													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
92	1	33	HCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	131	12	0	33	33	18	100	0	0	594	108	-6	2
										EAv	0	33	0	0	100	0	0	0													
	2	44	C	0	POOR	13	7			TAv	33	77	17	13	100	0	0	221			33	77	37	13	100	0	0	481			
										EAv	33	77	27	7	100	0	0	189													
	3	43	C	0	POOR	13	7			TAv	77	120	0	13	100	0	0	0			77	120	0	13	100	0	0	0			
										EAv	77	120	43	7	100	0	0	301													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
93	1	40	HCL	0	GOOD	18				TAv	0	40	40	18	100	0	0	720	137	19	0	40	40	18	100	0	0	720	114	0	2
										EAv	0	40	0	0	100	0	0	0													
	2	11	HCL	0	MODERATE	16	10			TAv	40	51	10	16	100	0	0	160			40	51	11	16	100	0	0	176			
										EAv	40	51	1	10	100	0	0	10													
	3	69	C	0	POOR	13	7			TAv	51	120	0	13	100	0	0	0			51	120	19	13	100	0	0	247			
										EAv	51	120	69	7	100	0	0	483													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
93.1	1	26	HCL	0	GOOD	18				TAv	0	26	26	18	100	0	0	468	133	15	0	26	26	18	100	0	0	468	110	-4	2
										EAv	0	26	0	0	100	0	0	0													
	2	19	C	0	MODERATE	16	8			TAv	26	45	19	16	100	0	0	304			26	45	19	16	100	0	0	304			
										EAv	26	45	0	8	100	0	0	0													
	3	75	C	0	POOR	13	7			TAv	45	120	5	13	100	0	0	65			45	120	25	13	100	0	0	325			
										EAv	45	120	70	7	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
94	1	30	HCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	136	18	0	30	30	18	100	0	0	540	114	0	2
										EAv	0	30	0	0	100	0	0	0													
	2	29	C	0	MODERATE	16	8			TAv	30	59	20	16	100	0	0	320			30	59	29	16	100	0	0	464			
										EAv	30	59	9	8	100	0	0	72													
	3	61	HCL	0	POOR	12	7			TAv	59	120	0	12	100	0	0	0			59	120	11	12	100	0	0	132			
										EAv	59	120	61	7	100	0	0	427													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
95	1	39	C	10	GOOD	17		3.0	2.0	TAv	0	39	39	17	90	3	10	608	121	3	0	39	39	17	90	3	10	608	96	-17	3a
										EAv	0	39	0	0	90	2	10	0													
	2	34	C	15	POOR	13	7	3.0	2.0	TAv	39	73	11	13	85	3	15	127			39	73	31	13	85	3	15	357			
										EAv	39	73	23	7	85	2	15	144													
	3	47	HCL	0	POOR	12	7			TAv	73	120	0	12	100	0	0	0			73	120	0	12	100	0	0	0			
										EAv	73	120	47	7	100	0	0	329													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
96	1	30	MCL	15	GOOD	18		3.0	2.0	TAv	0	30	30	18	85	3	15	473	117	-1	0	30	30	18	85	3	15	473	92	-22	3a
										EAv	0	30	0	0	85	2	15	0													
	2	43	MCL	10	POOR	12	7	3.0	2.0	TAv	30	73	20	12	90	3	10	222			30	73	40	12	90	3	10	444			
										EAv	30	73	23	7	90	2	10	150													
	3	47	HCL	0	POOR	12	7			TAv	73	120	0	12	100	0	0	0			73	120	0	12	100	0	0	0			
										EAv	73	120	47	7	100	0	0	329													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
97	1	38	MCL	15	GOOD	18		3.0	2.0	TAv	0	38	38	18	85	3	15	599	121	3	0	38	38	18	85	3	15	599	95	-18	3a
										EAv	0	38	0	0	85	2	15	0													
	2	33	MCL	10	POOR	12	7	3.0	2.0	TAv	38	71	12	12	90	3	10	133			38	71	32	12	90	3	10	355			
										EAv	38	71	21	7	90	2	10	137													
	3	49	HCL	0	POOR	12	7			TAv	71	120	0	12	100	0	0	0			71	120	0	12	100	0	0	0			
										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
98	1	41	MCL	5	GOOD	18		3.0	2.0	TAv	0	41	41	18	95	3	5	707	129	11	0	41	41	18	95	3	5	707	103	-11	3a
										EAv	0	41	0	0	95	2	5	0													
	2	27	MCL	10	POOR	12	7	3.0	2.0	TAv	41	68	9	12	90	3	10	100			41	68	27	12	90	3	10	300			
										EAv	41	68	18	7	90	2	10	117													
	3	52	HCL	0	POOR	12	7			TAv	68	120	0	12	100	0	0	0			68	120	2	12	100	0	0	24			
										EAv	68	120	52	7	100	0	0	364													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
99	1	30	MCL	5	GOOD	18		3.0	2.0	TAv	0	30	30	18	95	3	5	518	125	7	0	30	30	18	95	3	5	518	100	-14	3a
										EAv	0	30	0	0	95	2	5	0													
	2	23	MCL	0	POOR	12	7			TAv	30	53	20	12	100	0	0	240			30	53	23	12	100	0	0	276			
										EAv	30	53	3	7	100	0	0	21													
	3	67	HCL	0	POOR	12	7			TAv	53	120	0	12	100	0	0	0			53	120	17	12	100	0	0	204			
										EAv	53	120	67	7	100	0	0	469													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
100	1	32	MCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	128	10	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	33	MCL	0	POOR	12	7			TAv	32	65	18	12	100	0	0	216			32	65	33	12	100	0	0	396			
										EAv	32	65	15	7	100	0	0	105													
	3	55	HCL	0	POOR	12	7			TAv	65	120	0	12	100	0	0	0			65	120	5	12	100	0	0	60			
										EAv	65	120	55	7	100	0	0	385													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
101	1	42	C	0	GOOD	17				TAv	0	42	42	17	100	0	0	714	131	13	0	42	42	17	100	0	0	714	108	-6	2
										EAv	0	42	0	0	100	0	0	0													
	2	43	C	0	POOR	13	7			TAv	42	85	8	13	100	0	0	104			42	85	28	13	100	0	0	364			
										EAv	42	85	35	7	100	0	0	245													
	3	35	C	0	POOR	13	7			TAv	85	120	0	13	100	0	0	0			85	120	0	13	100	0	0	0			
										EAv	85	120	35	7	100	0	0	245													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
102	1	26	HCL	0	GOOD	18				TAv	0	26	26	18	100	0	0	468	133	15	0	26	26	18	100	0	0	468	110	-4	2
										EAv	0	26	0	0	100	0	0	0													
	2	19	C	0	MODERATE	16	8			TAv	26	45	19	16	100	0	0	304			26	45	19	16	100	0	0	304			
										EAv	26	45	0	8	100	0	0	0													
	3	75	C	0	POOR	13	7			TAv	45	120	5	13	100	0	0	65			45	120	25	13	100	0	0	325			
										EAv	45	120	70	7	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
103	1	24	HCL	0	GOOD	18				TAv	0	24	24	18	100	0	0	432	192	74	0	24	24	18	100	0	0	432	129	15	1
										EAv	0	24	0	0	100	0	0	0													
	2	22	HCL	0	MODERATE	16	10			TAv	24	46	22	16	100	0	0	352			24	46	22	16	100	0	0	352			
										EAv	24	46	0	10	100	0	0	0													
	3	74	C	0	GOOD	21	15			TAv	46	120	4	21	100	0	0	84			46	120	24	21	100	0	0	504			
										EAv	46	120	70	15	100	0	0	1050													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
104	1	25	HCL	0	GOOD	18				TAv	0	25	25	18	100	0	0	450	192	73	0	25	25	18	100	0	0	450	129	15	1
										EAv	0	25	0	0	100	0	0	0													
	2	22	C	0	MODERATE	16	8			TAv	25	47	22	16	100	0	0	352			25	47	22	16	100	0	0	352			
										EAv	25	47	0	8	100	0	0	0													
	3	73	C	0	GOOD	21	15			TAv	47	120	3	21	100	0	0	63			47	120	23	21	100	0	0	483			
										EAv	47	120	70	15	100	0	0	1050													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
105	1	29	HCL	0	GOOD	18				TAv	0	29	29	18	100	0	0	522	193	75	0	29	29	18	100	0	0	522	130	16	1
										EAv	0	29	0	0	100	0	0	0													
	2	16	C	0	MODERATE	16	8			TAv	29	45	16	16	100	0	0	256			29	45	16	16	100	0	0	256			
										EAv	29	45	0	8	100	0	0	0													
	3	75	C	0	GOOD	21	15			TAv	45	120	5	21	100	0	0	105			45	120	25	21	100	0	0	525			
										EAv	45	120	70	15	100	0	0	1050													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
106	1	26	HCL	0	GOOD	18				TAv	0	26	26	18	100	0	0	468	172	54	0	26	26	18	100	0	0	468	130	17	1
										EAv	0	26	0	0	100	0	0	0													
	2	22	HZCL	0	MODERATE	17	10			TAv	26	48	22	17	100	0	0	374			26	48	22	17	100	0	0	374			
										EAv	26	48	0	10	100	0	0	0													
	3	72	HZCL	0	GOOD	21	12			TAv	48	120	2	21	100	0	0	42			48	120	22	21	100	0	0	462			
										EAv	48	120	70	12	100	0	0	840													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
107	1	27	HCL	0	GOOD	18				TAv	0	27	27	18	100	0	0	486	193	75	0	27	27	18	100	0	0	486	130	16	1
										EAv	0	27	0	0	100	0	0	0													
	2	18	C	0	MODERATE	16	8			TAv	27	45	18	16	100	0	0	288			27	45	18	16	100	0	0	288			
										EAv	27	45	0	8	100	0	0	0													
	3	75	C	0	GOOD	21	15			TAv	45	120	5	21	100	0	0	105			45	120	25	21	100	0	0	525			
										EAv	45	120	70	15	100	0	0	1050													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
108	1	29	HCL	5	GOOD	18		1.0	0.5	TAv	0	29	29	18	95	1	5	497	172	53	0	29	29	18	95	1	5	497	115	1	2
										EAv	0	29	0	0	95	1	5	0													
	2	26	C	0	POOR	13	7			TAv	29	55	21	13	100	0	0	273			29	55	26	13	100	0	0	338			
										EAv	29	55	5	7	100	0	0	35													
	3	65	MCL	0	GOOD	21	14			TAv	55	120	0	21	100	0	0	0			55	120	15	21	100	0	0	315			
										EAv	55	120	65	14	100	0	0	910													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
109	1	32	HCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	130	12	0	32	32	18	100	0	0	576	107	-7	2
										EAv	0	32	0	0	100	0	0	0													
	2	22	C	0	POOR	13	7			TAv	32	54	18	13	100	0	0	234			32	54	22	13	100	0	0	286			
										EAv	32	54	4	7	100	0	0	28													
	3	66	C	0	POOR	13	7			TAv	54	120	0	13	100	0	0	0			54	120	16	13	100	0	0	208			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
110	1	28	C	0	GOOD	17				TAv	0	28	28	17	100	0	0	476	132	14	0	28	28	17	100	0	0	476	109	-4	2
										EAv	0	28	0	0	100	0	0	0													
	2	24	C	0	MODERATE	16	8			TAv	28	52	22	16	100	0	0	352			28	52	24	16	100	0	0	384			
										EAv	28	52	2	8	100	0	0	16													
	3	68	C	0	POOR	13	7			TAv	52	120	0	13	100	0	0	0			52	120	18	13	100	0	0	234			
										EAv	52	120	68	7	100	0	0	476													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
111	1	24	C	10	GOOD	17		1.0	0.5	TAv	0	24	24	17	90	1	10	370	120	2	0	24	24	17	90	1	10	370	97	-17	3a
										EAv	0	24	0	0	90	1	10	0													
	2	29	C	0	POOR	13	7			TAv	24	53	26	13	100	0	0	338			24	53	29	13	100	0	0	377			
										EAv	24	53	3	7	100	0	0	21													
	3	67	C	0	POOR	13	7			TAv	53	120	0	13	100	0	0	0			53	120	17	13	100	0	0	221			
										EAv	53	120	67	7	100	0	0	469													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
112	1	26	C	0	GOOD	17				TAv	0	26	26	17	100	0	0	442	124	6	0	26	26	17	100	0	0	442	101	-12	3a
										EAv	0	26	0	0	100	0	0	0													
	2	26	C	0	POOR	13	7			TAv	26	52	24	13	100	0	0	312			26	52	26	13	100	0	0	338			
										EAv	26	52	2	7	100	0	0	14													
	3	68	C	0	POOR	13	7			TAv	52	120	0	13	100	0	0	0			52	120	18	13	100	0	0	234			
										EAv	52	120	68	7	100	0	0	476													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
Data inputs						Av. water (soil)		Av. water (stones)		Droughtiness calculations: AP wheat											AP potatoes										
113	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	137	19	0	36	36	18	100	0	0	648	114	0	2
										EAv	0	36	0	0	100	0	0	0													
	2	16	HCL	0	MODERATE	16	10			TAv	36	52	14	16	100	0	0	224			36	52	16	16	100	0	0	256			
										EAv	36	52	2	10	100	0	0	20													
	3	68	C	0	POOR	13	7			TAv	52	120	0	13	100	0	0	0			52	120	18	13	100	0	0	234			
										EAv	52	120	68	7	100	0	0	476													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
114	1	35	MCL	5	GOOD	18		3.0	2.0	TAv	0	35	35	18	95	3	5	604	144	26	0	35	35	18	95	3	5	604	116	3	2
										EAv	0	35	0	0	95	2	5	0													
	2	50	MCL	0	MODERATE	16	10			TAv	35	85	15	16	100	0	0	240			35	85	35	16	100	0	0	560			
										EAv	35	85	35	10	100	0	0	350													
	3	35	HCL	0	POOR	12	7			TAv	85	120	0	12	100	0	0	0			85	120	0	12	100	0	0	0			
										EAv	85	120	35	7	100	0	0	245													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
115	1	32	MCL	5	GOOD	18		3.0	2.0	TAv	0	32	32	18	95	3	5	552	141	22	0	32	32	18	95	3	5	552	116	2	2
										EAv	0	32	0	0	95	2	5	0													
	2	43	MCL	0	MODERATE	16	10			TAv	32	75	18	16	100	0	0	288			32	75	38	16	100	0	0	608			
										EAv	32	75	25	10	100	0	0	250													
	3	45	HCL	0	POOR	12	7			TAv	75	120	0	12	100	0	0	0			75	120	0	12	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
116	1	34	MCL	5	GOOD	18		3.0	2.0	TAv	0	34	34	18	95	3	5	587	137	19	0	34	34	18	95	3	5	587	113	-1	2
										EAv	0	34	0	0	95	2	5	0													
	2	28	MCL	0	MODERATE	16	10			TAv	34	62	16	16	100	0	0	256			34	62	28	16	100	0	0	448			
										EAv	34	62	12	10	100	0	0	120													
	3	58	HCL	0	POOR	12	7			TAv	62	120	0	12	100	0	0	0			62	120	8	12	100	0	0	96			
										EAv	62	120	58	7	100	0	0	406													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
117	1	33	MCL	0	GOOD	18				TAv	0	33	33	18	100	0	0	594	141	23	0	33	33	18	100	0	0	594	118	4	2
										EAv	0	33	0	0	100	0	0	0													
	2	35	MCL	0	MODERATE	16	10			TAv	33	68	17	16	100	0	0	272			33	68	35	16	100	0	0	560			
										EAv	33	68	18	10	100	0	0	180													
	3	52	HCL	0	POOR	12	7			TAv	68	120	0	12	100	0	0	0			68	120	2	12	100	0	0	24			
										EAv	68	120	52	7	100	0	0	364													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
118	1	41	C	0	GOOD	17				TAv	0	41	41	17	100	0	0	697	130	12	0	41	41	17	100	0	0	697	107	-6	2
										EAv	0	41	0	0	100	0	0	0													
	2	40	C	0	POOR	13	7			TAv	41	81	9	13	100	0	0	117			41	81	29	13	100	0	0	377			
										EAv	41	81	31	7	100	0	0	217													
	3	39	C	0	POOR	13	7			TAv	81	120	0	13	100	0	0	0			81	120	0	13	100	0	0	0			
										EAv	81	120	39	7	100	0	0	273													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
119	1	41	C	0	GOOD	17				TAv	0	41	41	17	100	0	0	697	130	12	0	41	41	17	100	0	0	697	107	-6	2
										EAv	0	41	0	0	100	0	0	0													
	2	43	C	0	POOR	13	7			TAv	41	84	9	13	100	0	0	117			41	84	29	13	100	0	0	377			
										EAv	41	84	34	7	100	0	0	238													
	3	36	C	0	POOR	13	7			TAv	84	120	0	13	100	0	0	0			84	120	0	13	100	0	0	0			
										EAv	84	120	36	7	100	0	0	252													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
120	1	44	C	0	GOOD	17				TAv	0	44	44	17	100	0	0	748	132	14	0	44	44	17	100	0	0	748	109	-5	2
										EAv	0	44	0	0	100	0	0	0													
	2	39	C	0	POOR	13	7			TAv	44	83	6	13	100	0	0	78			44	83	26	13	100	0	0	338			
										EAv	44	83	33	7	100	0	0	231													
	3	37	C	0	POOR	13	7			TAv	83	120	0	13	100	0	0	0			83	120	0	13	100	0	0	0			
										EAv	83	120	37	7	100	0	0	259													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
121	1	43	C	0	GOOD	17				TAv	0	43	43	17	100	0	0	731	131	13	0	43	43	17	100	0	0	731	108	-6	2
										EAv	0	43	0	0	100	0	0	0													
	2	37	C	0	POOR	13	7			TAv	43	80	7	13	100	0	0	91			43	80	27	13	100	0	0	351			
										EAv	43	80	30	7	100	0	0	210													
	3	40	C	0	POOR	13	7			TAv	80	120	0	13	100	0	0	0			80	120	0	13	100	0	0	0			
										EAv	80	120	40	7	100	0	0	280													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
121	1	43	C	0	GOOD	17				TAv	0	43	43	17	100	0	0	731	131	13	0	43	43	17	100	0	0	731	108	-6	2
										EAv	0	43	0	0	100	0	0	0													
	2	37	C	0	POOR	13	7			TAv	43	80	7	13	100	0	0	91			43	80	27	13	100	0	0	351			
										EAv	43	80	30	7	100	0	0	210													
	3	40	C	0	POOR	13	7			TAv	80	120	0	13	100	0	0	0			80	120	0	13	100	0	0	0			
										EAv	80	120	40	7	100	0	0	280													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
122	1	32	MCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	128	10	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	24	MCL	0	POOR	12	7			TAv	32	56	18	12	100	0	0	216			32	56	24	12	100	0	0	288			
										EAv	32	56	6	7	100	0	0	42													
	3	64	HCL	0	POOR	12	7			TAv	56	120	0	12	100	0	0	0			56	120	14	12	100	0	0	168			
										EAv	56	120	64	7	100	0	0	448													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
123	1	43	C	0	GOOD	17				TAv	0	43	43	17	100	0	0	731	131	13	0	43	43	17	100	0	0	731	108	-6	2
										EAv	0	43	0	0	100	0	0	0													
	2	37	C	0	POOR	13	7			TAv	43	80	7	13	100	0	0	91			43	80	27	13	100	0	0	351			
										EAv	43	80	30	7	100	0	0	210													
	3	40	C	0	POOR	13	7			TAv	80	120	0	13	100	0	0	0			80	120	0	13	100	0	0	0			
										EAv	80	120	40	7	100	0	0	280													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
123	1	43	C	0	GOOD	17				TAv	0	43	43	17	100	0	0	731	131	13	0	43	43	17	100	0	0	731	108	-6	2
										EAv	0	43	0	0	100	0	0	0													
	2	37	C	0	POOR	13	7			TAv	43	80	7	13	100	0	0	91			43	80	27	13	100	0	0	351			
										EAv	43	80	30	7	100	0	0	210													
	3	40	C	0	POOR	13	7			TAv	80	120	0	13	100	0	0	0			80	120	0	13	100	0	0	0			
										EAv	80	120	40	7	100	0	0	280													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
124	1	31	MCL	0	GOOD	18				TAv	0	31	31	18	100	0	0	558	128	10	0	31	31	18	100	0	0	558	103	-11	3a
										EAv	0	31	0	0	100	0	0	0													
	2	27	HCL	0	POOR	12	7			TAv	31	58	19	12	100	0	0	228			31	58	27	12	100	0	0	324			
										EAv	31	58	8	7	100	0	0	56													
	3	62	HCL	0	POOR	12	7			TAv	58	120	0	12	100	0	0	0			58	120	12	12	100	0	0	144			
										EAv	58	120	62	7	100	0	0	434													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
125	1	32	MCL	0	GOOD	18				TAv	0	32	32	18	100	0	0	576	128	10	0	32	32	18	100	0	0	576	103	-11	3a
										EAv	0	32	0	0	100	0	0	0													
	2	38	MCL	0	POOR	12	7			TAv	32	70	18	12	100	0	0	216			32	70	38	12	100	0	0	456			
										EAv	32	70	20	7	100	0	0	140													
	3	50	HCL	0	POOR	12	7			TAv	70	120	0	12	100	0	0	0			70	120	0	12	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
126	1	31	HCL	0	GOOD	18				TAv	0	31	31	18	100	0	0	558	128	10	0	31	31	18	100	0	0	558	103	-11	3a
										EAv	0	31	0	0	100	0	0	0													
	2	48	MCL	0	POOR	12	7			TAv	31	79	19	12	100	0	0	228			31	79	39	12	100	0	0	468			
										EAv	31	79	29	7	100	0	0	203													
	3	41	HCL	0	POOR	12	7			TAv	79	120	0	12	100	0	0	0			79	120	0	12	100	0	0	0			
										EAv	79	120	41	7	100	0	0	287													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
127	1	22	C	5	GOOD	17		1.0	0.5	TAv	0	22	22	17	95	1	5	356	121	3	0	22	22	17	95	1	5	356	98	-16	3a
										EAv	0	22	0	0	95	1	5	0													
	2	32	C	0	POOR	13	7			TAv	22	54	28	13	100	0	0	364			22	54	32	13	100	0	0	416			
										EAv	22	54	4	7	100	0	0	28													
	3	66	C	0	POOR	13	7			TAv	54	120	0	13	100	0	0	0			54	120	16	13	100	0	0	208			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
128	1	24	HCL	5	GOOD	18		1.0	0.5	TAv	0	24	24	18	95	1	5	412	124	6	0	24	24	18	95	1	5	412	101	-13	3a
										EAv	0	24	0	0	95	1	5	0													
	2	31	C	0	POOR	13	7			TAv	24	55	26	13	100	0	0	338			24	55	31	13	100	0	0	403			
										EAv	24	55	5	7	100	0	0	35													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
129	1	33	HCL	5	GOOD	18		3.0	2.0	TAv	0	33	33	18	95	3	5	569	126	8	0	33	33	18	95	3	5	569	101	-13	3a
										EAv	0	33	0	0	95	2	5	0													
	2	42	MCL	0	POOR	12	7			TAv	33	75	17	12	100	0	0	204			33	75	37	12	100	0	0	444			
										EAv	33	75	25	7	100	0	0	175													
	3	45	C	0	POOR	13	7			TAv	75	120	0	13	100	0	0	0			75	120	0	13	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
130	1	32	MCL	5	GOOD	18		3.0	2.0	TAv	0	32	32	18	95	3	5	552	126	8	0	32	32	18	95	3	5	552	101	-13	3a
										EAv	0	32	0	0	95	2	5	0													
	2	48	MCL	0	POOR	12	7			TAv	32	80	18	12	100	0	0	216			32	80	38	12	100	0	0	456			
										EAv	32	80	30	7	100	0	0	210													
	3	40	C	0	POOR	13	7			TAv	80	120	0	13	100	0	0	0			80	120	0	13	100	0	0	0			
										EAv	80	120	40	7	100	0	0	280													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
132	1	65	HCL	0	GOOD	18				TAv	0	65	50	18	100	0	0	900	128	10	0	65	65	18	100	0	0	1170	123	9	2
										EAv	0	65	15	0	100	0	0	0													
	2	7	C	10	POOR	13	7	3.0	2.0	TAv	65	72	0	13	90	3	10	0			65	72	5	13	90	3	10	60			
										EAv	65	72	7	7	90	2	10	46													
	3	48	C	0	POOR	13	7			TAv	72	120	0	13	100	0	0	0			72	120	0	13	100	0	0	0			
										EAv	72	120	48	7	100	0	0	336													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
133	1	43	C	0	GOOD	17				TAv	0	43	43	17	100	0	0	731	131	13	0	43	43	17	100	0	0	731	108	-6	2
										EAv	0	43	0	0	100	0	0	0													
	2	39	C	0	POOR	13	7			TAv	43	82	7	13	100	0	0	91			43	82	27	13	100	0	0	351			
										EAv	43	82	32	7	100	0	0	224													
	3	38	C	0	POOR	13	7			TAv	82	120	0	13	100	0	0	0			82	120	0	13	100	0	0	0			
										EAv	82	120	38	7	100	0	0	266													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
134	1	42	MCL	0	GOOD	18				TAv	0	42	42	18	100	0	0	756	134	16	0	42	42	18	100	0	0	756	109	-5	2
										EAv	0	42	0	0	100	0	0	0													
	2	53	MCL	0	POOR	12	7			TAv	42	95	8	12	100	0	0	96			42	95	28	12	100	0	0	336			
										EAv	42	95	45	7	100	0	0	315													
	3	25	C	0	POOR	13	7			TAv	95	120	0	13	100	0	0	0			95	120	0	13	100	0	0	0			
										EAv	95	120	25	7	100	0	0	175													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
135	1	30	MCL	0	GOOD	18				TAv	0	30	30	18	100	0	0	540	127	9	0	30	30	18	100	0	0	540	102	-12	3a
										EAv	0	30	0	0	100	0	0	0													
	2	37	MCL	0	POOR	12	7			TAv	30	67	20	12	100	0	0	240			30	67	37	12	100	0	0	444			
										EAv	30	67	17	7	100	0	0	119													
	3	53	C	0	POOR	13	7			TAv	67	120	0	13	100	0	0	0			67	120	3	13	100	0	0	39			
										EAv	67	120	53	7	100	0	0	371													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
136	1	24	C	0	GOOD	17				TAv	0	24	24	17	100	0	0	408	121	3	0	24	24	17	100	0	0	408	96	-18	3a
										EAv	0	24	0	0	100	0	0	0													
	2	52	MCL	0	POOR	12	7			TAv	24	76	26	12	100	0	0	312			24	76	46	12	100	0	0	552			
										EAv	24	76	26	7	100	0	0	182													
	3	44	C	0	POOR	13	7			TAv	76	120	0	13	100	0	0	0			76	120	0	13	100	0	0	0			
										EAv	76	120	44	7	100	0	0	308													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
137	1	35	MCL	5	GOOD	18		3.0	2.0	TAv	0	35	35	18	95	3	5	604	143	25	0	35	35	18	95	3	5	604	120	6	2
										EAv	0	35	0	0	95	2	5	0													
	2	20	MCL	5	GOOD	21	14	3.0	2.0	TAv	35	55	15	21	95	3	5	302			35	55	20	21	95	3	5	402			
										EAv	35	55	5	14	95	2	5	67													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
138	1	45	C	0	GOOD	17				TAv	0	45	45	17	100	0	0	765	132	14	0	45	45	17	100	0	0	765	109	-5	2
										EAv	0	45	0	0	100	0	0	0													
	2	37	C	0	POOR	13	7			TAv	45	82	5	13	100	0	0	65			45	82	25	13	100	0	0	325			
										EAv	45	82	32	7	100	0	0	224													
	3	38	C	0	POOR	13	7			TAv	82	120	0	13	100	0	0	0			82	120	0	13	100	0	0	0			
										EAv	82	120	38	7	100	0	0	266													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
139	1	44	C	0	GOOD	17				TAv	0	44	44	17	100	0	0	748	132	14	0	44	44	17	100	0	0	748	109	-5	2
										EAv	0	44	0	0	100	0	0	0													
	2	39	C	0	POOR	13	7			TAv	44	83	6	13	100	0	0	78			44	83	26	13	100	0	0	338			
										EAv	44	83	33	7	100	0	0	231													
	3	37	C	0	POOR	13	7			TAv	83	120	0	13	100	0	0	0			83	120	0	13	100	0	0	0			
										EAv	83	120	37	7	100	0	0	259													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
140	1	41	C	0	GOOD	17				TAv	0	41	41	17	100	0	0	697	130	12	0	41	41	17	100	0	0	697	107	-6	2
										EAv	0	41	0	0	100	0	0	0													
	2	40	C	0	POOR	13	7			TAv	41	81	9	13	100	0	0	117			41	81	29	13	100	0	0	377			
										EAv	41	81	31	7	100	0	0	217													
	3	39	C	0	POOR	13	7			TAv	81	120	0	13	100	0	0	0			81	120	0	13	100	0	0	0			
										EAv	81	120	39	7	100	0	0	273													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
142	1	55	C	0	GOOD	17				TAv	0	55	50	17	100	0	0	850	132	14	0	55	55	17	100	0	0	935	118	4	2
										EAv	0	55	5	0	100	0	0	0													
	2	16	C	0	MODERATE	16	8			TAv	55	71	0	16	100	0	0	0			55	71	15	16	100	0	0	240			
										EAv	55	71	16	8	100	0	0	128													
	3	49	C	0	POOR	13	7			TAv	71	120	0	13	100	0	0	0			71	120	0	13	100	0	0	0			
										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
143	1	25	HCL	0	GOOD	18				TAv	0	25	25	18	100	0	0	450	167	48	0	25	25	18	100	0	0	450	140	26	1
										EAv	0	25	0	0	100	0	0	0													
	2	50	C	0	GOOD	21	15			TAv	25	75	25	21	100	0	0	525			25	75	45	21	100	0	0	945			
										EAv	25	75	25	15	100	0	0	375													
	3	45	C	0	POOR	13	7			TAv	75	120	0	13	100	0	0	0			75	120	0	13	100	0	0	0			
										EAv	75	120	45	7	100	0	0	315													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
144	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	133	14	0	23	23	17	100	0	0	391	112	-2	2
										EAv	0	23	0	0	100	0	0	0													
	2	39	C	0	MODERATE	16	8			TAv	23	62	27	16	100	0	0	432			23	62	39	16	100	0	0	624			
										EAv	23	62	12	8	100	0	0	96													
	3	58	C	0	POOR	13	7			TAv	62	120	0	13	100	0	0	0			62	120	8	13	100	0	0	104			
										EAv	62	120	58	7	100	0	0	406													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
145	1	21	C	0	GOOD	17				TAv	0	21	21	17	100	0	0	357	154	36	0	21	21	17	100	0	0	357	131	17	1
										EAv	0	21	0	0	100	0	0	0													
	2	39	C	0	GOOD	21	15			TAv	21	60	29	21	100	0	0	609			21	60	39	21	100	0	0	819			
										EAv	21	60	10	15	100	0	0	150													
	3	60	C	0	POOR	13	7			TAv	60	120	0	13	100	0	0	0			60	120	10	13	100	0	0	130			
										EAv	60	120	60	7	100	0	0	420													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
145	1	21	C	0	GOOD	17				TAv	0	21	21	17	100	0	0	357	154	36	0	21	21	17	100	0	0	357	131	17	1
										EAv	0	21	0	0	100	0	0	0													
	2	39	C	0	GOOD	21	15			TAv	21	60	29	21	100	0	0	609			21	60	39	21	100	0	0	819			
										EAv	21	60	10	15	100	0	0	150													
	3	60	C	0	POOR	13	7			TAv	60	120	0	13	100	0	0	0			60	120	10	13	100	0	0	130			
										EAv	60	120	60	7	100	0	0	420													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
146	1	21	C	0	GOOD	17				TAv	0	21	21	17	100	0	0	357	163	45	0	21	21	17	100	0	0	357	139	25	1
										EAv	0	21	0	0	100	0	0	0													
	2	51	C	0	GOOD	21	15			TAv	21	72	29	21	100	0	0	609			21	72	49	21	100	0	0	1029			
										EAv	21	72	22	15	100	0	0	330													
	3	48	C	0	POOR	13	7			TAv	72	120	0	13	100	0	0	0			72	120	0	13	100	0	0	0			
										EAv	72	120	48	7	100	0	0	336													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
147	1	28	MCL	0	GOOD	18				TAv	0	28	28	18	100	0	0	504	140	22	0	28	28	18	100	0	0	504	117	3	2
										EAv	0	28	0	0	100	0	0	0													
	2	41	HCL	0	MODERATE	16	10			TAv	28	69	22	16	100	0	0	352			28	69	41	16	100	0	0	656			
										EAv	28	69	19	10	100	0	0	190													
	3	51	MCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
148	1	28	MCL	5	GOOD	18		1.0	0.5	TAv	0	28	28	18	95	1	5	480	137	19	0	28	28	18	95	1	5	480	114	0	2
										EAv	0	28	0	0	95	1	5	0													
	2	38	HCL	0	MODERATE	16	10			TAv	28	66	22	16	100	0	0	352			28	66	38	16	100	0	0	608			
										EAv	28	66	16	10	100	0	0	160													
	3	54	MCL	0	POOR	12	7			TAv	66	120	0	12	100	0	0	0			66	120	4	12	100	0	0	48			
										EAv	66	120	54	7	100	0	0	378													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
149	1	24	C	0	GOOD	17				TAv	0	24	24	17	100	0	0	408	135	17	0	24	24	17	100	0	0	408	112	-2	2
										EAv	0	24	0	0	100	0	0	0													
	2	37	MCL	0	MODERATE	16	10			TAv	24	61	26	16	100	0	0	416			24	61	37	16	100	0	0	592			
										EAv	24	61	11	10	100	0	0	110													
	3	59	C	0	POOR	13	7			TAv	61	120	0	13	100	0	0	0			61	120	9	13	100	0	0	117			
										EAv	61	120	59	7	100	0	0	413													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
150	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	135	17	0	23	23	17	100	0	0	391	112	-2	2
										EAv	0	23	0	0	100	0	0	0													
	2	38	MCL	0	MODERATE	16	10			TAv	23	61	27	16	100	0	0	432			23	61	38	16	100	0	0	608			
										EAv	23	61	11	10	100	0	0	110													
	3	59	C	0	POOR	13	7			TAv	61	120	0	13	100	0	0	0			61	120	9	13	100	0	0	117			
										EAv	61	120	59	7	100	0	0	413													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
151	1	28	C	0	GOOD	17				TAv	0	28	28	17	100	0	0	476	135	17	0	28	28	17	100	0	0	476	112	-1	2
										EAv	0	28	0	0	100	0	0	0													
	2	34	MCL	0	MODERATE	16	10			TAv	28	62	22	16	100	0	0	352			28	62	34	16	100	0	0	544			
										EAv	28	62	12	10	100	0	0	120													
	3	58	C	0	POOR	13	7			TAv	62	120	0	13	100	0	0	0			62	120	8	13	100	0	0	104			
										EAv	62	120	58	7	100	0	0	406													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
152	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	153	34	0	23	23	17	100	0	0	391	131	17	1
										EAv	0	23	0	0	100	0	0	0													
	2	38	MCL	0	GOOD	21	14			TAv	23	61	27	21	100	0	0	567			23	61	38	21	100	0	0	798			
										EAv	23	61	11	14	100	0	0	154													
	3	59	C	0	POOR	13	7			TAv	61	120	0	13	100	0	0	0			61	120	9	13	100	0	0	117			
										EAv	61	120	59	7	100	0	0	413													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
153	1	25	SCL	0	GOOD	17				TAv	0	25	25	17	100	0	0	425	150	31	0	25	25	17	100	0	0	425	128	14	1
										EAv	0	25	0	0	100	0	0	0													
	2	60	SC	0	GOOD	19	14			TAv	25	85	25	19	100	0	0	475			25	85	45	19	100	0	0	855			
										EAv	25	85	35	14	100	0	0	490													
	3	15	C	0	POOR	13	7			TAv	85	100	0	13	100	0	0	0			85	100	0	13	100	0	0	0			
										EAv	85	100	15	7	100	0	0	105													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
154	1	31	MCL	5	GOOD	18		3.0	2.0	TAv	0	31	31	18	95	3	5	535	125	7	0	31	31	18	95	3	5	535	100	-14	3a
										EAv	0	31	0	0	95	2	5	0													
	2	47	HCL	0	POOR	12	7			TAv	31	78	19	12	100	0	0	228			31	78	39	12	100	0	0	468			
										EAv	31	78	28	7	100	0	0	196													
	3	42	HCL	0	POOR	12	7			TAv	78	120	0	12	100	0	0	0			78	120	0	12	100	0	0	0			
										EAv	78	120	42	7	100	0	0	294													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
155	1	39	MCL	0	GOOD	18				TAv	0	39	39	18	100	0	0	702	132	14	0	39	39	18	100	0	0	702	107	-6	2
										EAv	0	39	0	0	100	0	0	0													
	2	30	MCL	0	POOR	12	7			TAv	39	69	11	12	100	0	0	132			39	69	30	12	100	0	0	360			
										EAv	39	69	19	7	100	0	0	133													
	3	51	HCL	0	POOR	12	7			TAv	69	120	0	12	100	0	0	0			69	120	1	12	100	0	0	12			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
156	1	23	HCL	0	GOOD	18				TAv	0	23	23	18	100	0	0	414	135	17	0	23	23	18	100	0	0	414	110	-4	2
										EAv	0	23	0	0	100	0	0	0													
	2	31	MCL	0	MODERATE	16	10			TAv	23	54	27	16	100	0	0	432			23	54	31	16	100	0	0	496			
										EAv	23	54	4	10	100	0	0	40													
	3	66	HCL	0	POOR	12	7			TAv	54	120	0	12	100	0	0	0			54	120	16	12	100	0	0	192			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
157	1	22	C	0	GOOD	17				TAv	0	22	22	17	100	0	0	374	132	14	0	22	22	17	100	0	0	374	108	-6	2
										EAv	0	22	0	0	100	0	0	0													
	2	32	MCL	0	MODERATE	16	10			TAv	22	54	28	16	100	0	0	448			22	54	32	16	100	0	0	512			
										EAv	22	54	4	10	100	0	0	40													
	3	66	HCL	0	POOR	12	7			TAv	54	120	0	12	100	0	0	0			54	120	16	12	100	0	0	192			
										EAv	54	120	66	7	100	0	0	462													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
158	1	35	C	0	GOOD	17				TAv	0	35	35	17	100	0	0	595	133	15	0	35	35	17	100	0	0	595	124	10	2
										EAv	0	35	0	0	100	0	0	0													
	2	20	C	5	GOOD	21	15	1.0	0.5	TAv	35	55	15	21	95	1	5	300			35	55	20	21	95	1	5	400			
										EAv	35	55	5	15	95	1	5	71													
	3	45	C	0	MODERATE	16	8			TAv	55	100	0	16	100	0	0	0			55	100	15	16	100	0	0	240			
										EAv	55	100	45	8	100	0	0	360													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
159	1	20	C	0	GOOD	17				TAv	0	20	20	17	100	0	0	340	131	13	0	20	20	17	100	0	0	340	108	-6	2
										EAv	0	20	0	0	100	0	0	0													
	2	30	C	0	MODERATE	16	8			TAv	20	50	30	16	100	0	0	480			20	50	30	16	100	0	0	480			
										EAv	20	50	0	8	100	0	0	0													
	3	70	C	0	POOR	13	7			TAv	50	120	0	13	100	0	0	0			50	120	20	13	100	0	0	260			
										EAv	50	120	70	7	100	0	0	490													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
160	1	35	C	0	GOOD	17				TAv	0	35	35	17	100	0	0	595	133	15	0	35	35	17	100	0	0	595	111	-3	2
										EAv	0	35	0	0	100	0	0	0													
	2	20	C	0	MODERATE	16	8			TAv	35	55	15	16	100	0	0	240			35	55	20	16	100	0	0	320			
										EAv	35	55	5	8	100	0	0	40													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
161	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	132	14	0	23	23	17	100	0	0	391	111	-3	2
										EAv	0	23	0	0	100	0	0	0													
	2	37	C	0	MODERATE	16	8			TAv	23	60	27	16	100	0	0	432			23	60	37	16	100	0	0	592			
										EAv	23	60	10	8	100	0	0	80													
	3	60	C	0	POOR	13	7			TAv	60	120	0	13	100	0	0	0			60	120	10	13	100	0	0	130			
										EAv	60	120	60	7	100	0	0	420													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
162	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	132	14	0	23	23	17	100	0	0	391	112	-2	2
										EAv	0	23	0	0	100	0	0	0													
	2	38	C	0	MODERATE	16	8			TAv	23	61	27	16	100	0	0	432			23	61	38	16	100	0	0	608			
										EAv	23	61	11	8	100	0	0	88													
	3	59	C	0	POOR	13	7			TAv	61	120	0	13	100	0	0	0			61	120	9	13	100	0	0	117			
										EAv	61	120	59	7	100	0	0	413													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
164	1	30	C	0	GOOD	17				TAv	0	30	30	17	100	0	0	510	133	15	0	30	30	17	100	0	0	510	112	-2	2
										EAv	0	30	0	0	100	0	0	0													
	2	29	C	0	MODERATE	16	8			TAv	30	59	20	16	100	0	0	320			30	59	29	16	100	0	0	464			
										EAv	30	59	9	8	100	0	0	72													
	3	61	C	0	POOR	13	7			TAv	59	120	0	13	100	0	0	0			59	120	11	13	100	0	0	143			
										EAv	59	120	61	7	100	0	0	427													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
164	1	30	C	0	GOOD	17				TAv	0	30	30	17	100	0	0	510	133	15	0	30	30	17	100	0	0	510	112	-2	2
										EAv	0	30	0	0	100	0	0	0													
	2	29	C	0	MODERATE	16	8			TAv	30	59	20	16	100	0	0	320			30	59	29	16	100	0	0	464			
										EAv	30	59	9	8	100	0	0	72													
	3	61	C	0	POOR	13	7			TAv	59	120	0	13	100	0	0	0			59	120	11	13	100	0	0	143			
										EAv	59	120	61	7	100	0	0	427													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
165	1	29	MCL	5	GOOD	18		1.0	0.5	TAv	0	29	29	18	95	1	5	497	124	6	0	29	29	18	95	1	5	497	99	-15	3a
										EAv	0	29	0	0	95	1	5	0													
	2	30	MCL	0	POOR	12	7			TAv	29	59	21	12	100	0	0	252			29	59	30	12	100	0	0	360			
										EAv	29	59	9	7	100	0	0	63													
	3	61	HCL	0	POOR	12	7			TAv	59	120	0	12	100	0	0	0			59	120	11	12	100	0	0	132			
										EAv	59	120	61	7	100	0	0	427													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
166	1	20	C	0	GOOD	17				TAv	0	20	20	17	100	0	0	340	126	8	0	20	20	17	100	0	0	340	101	-12	3a
										EAv	0	20	0	0	100	0	0	0													
	2	36	MCL	15	MODERATE	16	10	3.0	2.0	TAv	20	56	30	16	85	3	15	422			20	56	36	16	85	3	15	506			
										EAv	20	56	6	10	85	2	15	53													
	3	64	HCL	0	POOR	12	7			TAv	56	120	0	12	100	0	0	0			56	120	14	12	100	0	0	168			
										EAv	56	120	64	7	100	0	0	448													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
167	1	23	HCL	0	GOOD	18				TAv	0	23	23	18	100	0	0	414	123	5	0	23	23	18	100	0	0	414	98	-16	3a
										EAv	0	23	0	0	100	0	0	0													
	2	35	MCL	0	POOR	12	7			TAv	23	58	27	12	100	0	0	324			23	58	35	12	100	0	0	420			
										EAv	23	58	8	7	100	0	0	56													
	3	62	HCL	0	POOR	12	7			TAv	58	120	0	12	100	0	0	0			58	120	12	12	100	0	0	144			
										EAv	58	120	62	7	100	0	0	434													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
168	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	123	5	0	23	23	17	100	0	0	391	100	-14	3a
										EAv	0	23	0	0	100	0	0	0													
	2	32	C	0	POOR	13	7			TAv	23	55	27	13	100	0	0	351			23	55	32	13	100	0	0	416			
										EAv	23	55	5	7	100	0	0	35													
	3	65	C	0	POOR	13	7			TAv	55	120	0	13	100	0	0	0			55	120	15	13	100	0	0	195			
										EAv	55	120	65	7	100	0	0	455													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
181	1	38	HCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	132	14	0	38	38	18	100	0	0	684	107	-7	2
										EAv	0	38	0	0	100	0	0	0													
	2	29	HCL	0	POOR	12	7			TAv	38	67	12	12	100	0	0	144			38	67	29	12	100	0	0	348			
										EAv	38	67	17	7	100	0	0	119													
	3	53	C	0	POOR	13	7			TAv	67	120	0	13	100	0	0	0			67	120	3	13	100	0	0	39			
										EAv	67	120	53	7	100	0	0	371													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
182	1	39	HCL	0	GOOD	18				TAv	0	39	39	18	100	0	0	702	132	14	0	39	39	18	100	0	0	702	107	-6	2
										EAv	0	39	0	0	100	0	0	0													
	2	32	HCL	0	POOR	12	7			TAv	39	71	11	12	100	0	0	132			39	71	31	12	100	0	0	372			
										EAv	39	71	21	7	100	0	0	147													
	3	49	C	0	POOR	13	7			TAv	71	120	0	13	100	0	0	0			71	120	0	13	100	0	0	0			
										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
183	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	34	HCL	0	POOR	12	7			TAv	35	69	15	12	100	0	0	180			35	69	34	12	100	0	0	408			
										EAv	35	69	19	7	100	0	0	133													
	3	51	C	0	POOR	13	7			TAv	69	120	0	13	100	0	0	0			69	120	1	13	100	0	0	13			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
184	1	37	HCL	0	GOOD	18				TAv	0	37	37	18	100	0	0	666	131	13	0	37	37	18	100	0	0	666	106	-8	2
										EAv	0	37	0	0	100	0	0	0													
	2	32	HCL	0	POOR	12	7			TAv	37	69	13	12	100	0	0	156			37	69	32	12	100	0	0	384			
										EAv	37	69	19	7	100	0	0	133													
	3	51	C	0	POOR	13	7			TAv	69	120	0	13	100	0	0	0			69	120	1	13	100	0	0	13			
										EAv	69	120	51	7	100	0	0	357													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
185	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	39	HCL	0	POOR	12	7			TAv	35	74	15	12	100	0	0	180			35	74	35	12	100	0	0	420			
										EAv	35	74	24	7	100	0	0	168													
	3	46	C	0	POOR	13	7			TAv	74	120	0	13	100	0	0	0			74	120	0	13	100	0	0	0			
										EAv	74	120	46	7	100	0	0	322													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
186	1	38	HCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	132	14	0	38	38	18	100	0	0	684	107	-7	2
										EAv	0	38	0	0	100	0	0	0													
	2	32	HCL	0	POOR	12	7			TAv	38	70	12	12	100	0	0	144			38	70	32	12	100	0	0	384			
										EAv	38	70	20	7	100	0	0	140													
	3	50	C	0	POOR	13	7			TAv	70	120	0	13	100	0	0	0			70	120	0	13	100	0	0	0			
										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																					
						Av. water (soil)		Av. water (stones)		AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
187	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	139	20	0	35	35	18	100	0	0	630	109	-5	2
										EAv	0	35	0	0	100	0	0	0													
	2	36	SCL	0	POOR	13	8			TAv	35	71	15	13	100	0	0	195			35	71	35	13	100	0	0	455			
										EAv	35	71	21	8	100	0	0	168													
	3	49	SCL	0	POOR	13	8			TAv	71	120	0	13	100	0	0	0			71	120	0	13	100	0	0	0			
										EAv	71	120	49	8	100	0	0	392													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
188	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	131	13	0	36	36	18	100	0	0	648	106	-8	2
										EAv	0	36	0	0	100	0	0	0													
	2	31	HCL	0	POOR	12	7			TAv	36	67	14	12	100	0	0	168			36	67	31	12	100	0	0	372			
										EAv	36	67	17	7	100	0	0	119													
	3	53	C	0	POOR	13	7			TAv	67	120	0	13	100	0	0	0			67	120	3	13	100	0	0	39			
										EAv	67	120	53	7	100	0	0	371													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
189	1	35	HCL	0	GOOD	18				TAv	0	35	35	18	100	0	0	630	130	12	0	35	35	18	100	0	0	630	105	-9	2
										EAv	0	35	0	0	100	0	0	0													
	2	36	HCL	0	POOR	12	7			TAv	35	71	15	12	100	0	0	180			35	71	35	12	100	0	0	420			
										EAv	35	71	21	7	100	0	0	147													
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										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
190	1	38	HCL	0	GOOD	18				TAv	0	38	38	18	100	0	0	684	132	14	0	38	38	18	100	0	0	684	107	-7	2
										EAv	0	38	0	0	100	0	0	0													
	2	32	HCL	0	POOR	12	7			TAv	38	70	12	12	100	0	0	144			38	70	32	12	100	0	0	384			
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										EAv	70	120	50	7	100	0	0	350													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
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										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

Data inputs						Av. water (soil)		Av. water (stones)		Droughtiness calculations: AP wheat											AP potatoes										
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
194	1	36	HCL	0	GOOD	18				TAv	0	36	36	18	100	0	0	648	131	13	0	36	36	18	100	0	0	648	106	-8	2
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	3	48	C	0	POOR	13	7			TAv	72	120	0	13	100	0	0	0			72	120	0	13	100	0	0	0			
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										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
195	1	39	HCL	0	GOOD	18				TAv	0	39	39	18	100	0	0	702	132	14	0	39	39	18	100	0	0	702	108	-6	2
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	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
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										EAv	38	71	21	7	100	0	0	147													
	3	49	C	0	POOR	13	7			TAv	71	120	0	13	100	0	0	0			71	120	0	13	100	0	0	0			
										EAv	71	120	49	7	100	0	0	343													
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
197	1	39	MCL	0	GOOD	18				TAv	0	39	39	18	100	0	0	702	147	29	0	39	39	18	100	0	0	702	117	3	2
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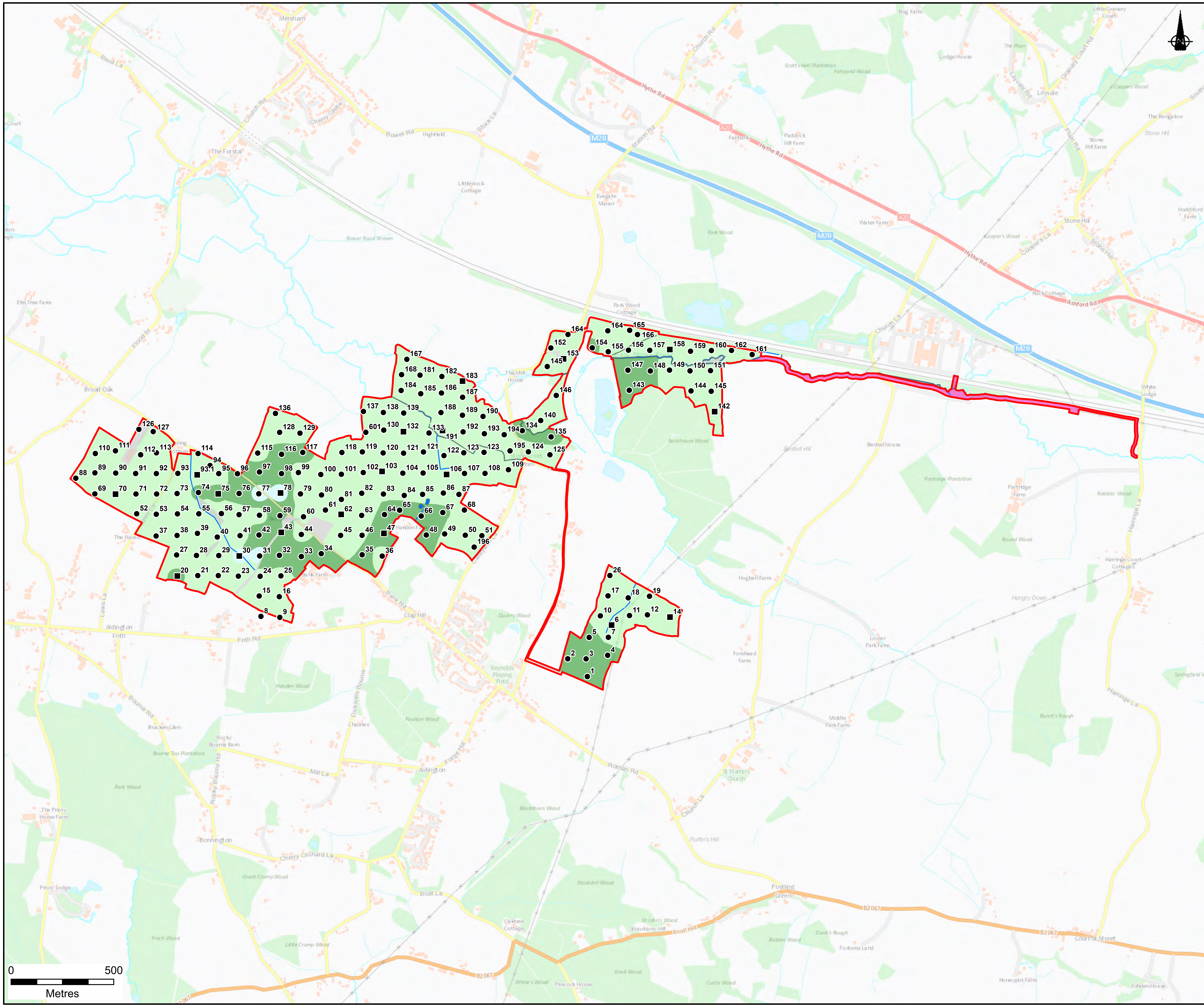
	4									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													
	5									TAv	120	120	0	0	100	0	0	0			120	120	0	0	100	0	0	0			
										EAv	120	120	0	0	100	0	0	0													

DRAWING GM12014/002



KEY

- Site Boundary
- Survey Point
  - Auger Core
  - Profile Pit
- Watercourses
- Agricultural Land Classification
  - Grade 2
  - Non Agricultural
  - Subgrade 3a
  - Subgrade 3b
  - Not Surveyed

Notes:

Boundaries are indicative.

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REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
E	TITLEBLOCK AMENDMENTS	04/22	SRW	KE	HK
D	KEY AMENDMENTS	03/22	SRW	KE	HK
C	TITLEBLOCK AMENDMENTS	03/22	SRW	KE	HK
B	AMENDMENTS TO SITE BOUNDARY	02/22	SRW	KE	HK
A	FIRST ISSUE	02/22	SRW	KE	HK

CLIENT

EVOLUTION POWER LIMITED

PROJECT

STONESTREET GREEN SOLAR

DRAWING TITLE

AGRICULTURAL LAND CLASSIFICATION

DRG No	REV
GM12014/002	E

DRG SIZE	SCALE	DATE
A2	1:12,500	April 2022

DRAWN BY	CHECKED BY	APPROVED BY
SW	KE	HK

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Stonestreet Green Solar

Environmental Impact Assessment Scoping Report

Appendix 3: Listed Buildings within 1km

Planning Inspectorate Reference EN010135

April 2022

Appendix 3: Listed Buildings within 1km

Listed Buildings within 1km of the Site Boundary			
NHLE reference	**Receptor**	**Importance**	**Distance from the site boundary**
1054042	Church of St Mary	Grade I	525m north
1071208	Church of St Martin	Grade I	805m south-east
1071209	Court Lodge Farmhouse	Grade II*	820m south-east
1184521	Ruffyn's Hill Farmhouse and walls projecting	Grade II*	680m south-east
1184555	Cobb's Hall	Grade II*	350m south
1233498	Stonegreen Hall	Grade II*	460m north-west
1233761	Stonelees	Grade II*	65m west
1362798	Evegate Manor	Grade II*	580m north
1054020	Elm Tree Farmhouse	Grade II	988m north-east
1061062	Ashdown Cottages	Grade II	830m north
1061063	Old Mill House	Grade II	971m north
1061065	Glebe Farm House	Grade II	657m north
1061098	Belle Vue	Grade II	932m north
1071180	Evegate Mill	Grade II	91m north
1071186	The Bourne Tap	Grade II	695m south
1071207	Parsonage Farmhouse	Grade II	745m south-east
1071210	Stable/barn about 50 metres west of Court Lodge Farmhouse	Grade II	685m south-east
1071211	Church Farmhouse	Grade II	645m south-east
1071212	Grove Cottage	Grade II	842m south-east
1071213	Former dairy building about 25 metres north west of Hogben Farmhouse	Grade II	395m east
1071214	Hogben House	Grade II	504m south-east
1071215	Street Farmhouse	Grade II	605m south-east
1071216	Clap Hill House, Harold Cottages	Grade II	244m south
1071217	Shepherd's Cottage, Shepherd's House	Grade II	559m south
1071218	Homelands	Grade II	652m south
1071219	Hand pump about 5 metres west of Quested's Cottage	Grade II	39m south
1071220	Poulton Farmhouse	Grade II	264m south
1071224	Wykhurst	Grade II	898m south-east
1071225	Barn about 20 metres east of Ruffyn's Hill Farmhouse	Grade II	711m south
1071226	Belarica Cottage, Beulah	Grade II	193m south
1071228	Bourne Farmhouse	Grade II	600m south-west

1071248	Barn and 2 stable ranges attached, about 20 metres north of Bank Farmhouse	Grade II	72m south
1071249	The Old Cottage	Grade II	25m east
1184279	Tickner Cottage	Grade II	659m south-east
1184281	Church Hill Cottage	Grade II	571m south-east
1184334	1 and 2, Clap Hill	Grade II	273m south
1184361	By The Way	Grade II	279m south
1184383	Quested's Cottage	Grade II	31m south
1184459	Goldwell	Grade II	28m east
1184484	Symnells and walled forecourt	Grade II	42m east
1184539	Stable/stock house about 20 metres north east of Ruffyn's Hill Farmhouse	Grade II	696m south-east
1185259	Water Farm House	Grade II	729m north
1185369	Evegate Millhouse	Grade II	86m north
1185387	Stable/outbuilding about 20 yards north west of Evegate Mill House	Grade II	107m north
1233284	Stonegreen Cottage	Grade II	440m north-west
1233287	Stable/storage and wall attached about 30 metres north east of Little Stonegreen	Grade II	585m north-west
1233288	Long Row	Grade II	775m north-west
1233506	Little Stonegreen	Grade II	596m north-west
1233509	Granary Cottage	Grade II	812m north-west
1233526	Chequer Tree Farmhouse	Grade II	814m west
1233686	Gill Cottage	Grade II	959m west
1233766	Elm Tree Farmhouse	Grade II	689m west
1234023	The Grange	Grade II	986m west
1276500	Little Gill Farmhouse	Grade II	955m west
1276571	Outbuilding about 50 metres north of Little Stonegreen	Grade II	619m north-west
1276581	Collier Hill Cottage	Grade II	891m west
1276698	Stables about 20 metres north east of Little Stonegreen	Grade II	601m north-west
1300112	Pattisons Farmhouse	Grade II	844m south
1300136	Goodwin Farmhouse	Grade II	130m south
1300148	Oast house about 50 metres west of Poulton Farmhouse	Grade II	270m south
1300164	Walnut Tree Inn	Grade II	200m south-east
1300182	Oak House	Grade II	329m south-east
1300185	Old Chestnut House	Grade II	606m south-east
1300208	Barn about 30 metres north west of Hogben Farmhouse	Grade II	392m east

1344201	Barn complex about 66 metres west of Somerfield Court	Grade II	960m east
1344202	Guinea Hall	Grade II	790m east
1362752	Bank Farmhouse and walls attached	Grade II	44m south
1362753	Symnel Cottage	Grade II	113m south-east
1362775	Lychgate and quadrant walls attached to churchyard of St Martin	Grade II	689m south-east
1362776	Barn and cartsheds about 50 metres south west of Court Lodge Farmhouse	Grade II	707m south-east
1362777	Stock yard and sheds about 75 metres west of Court Lodge Farmhouse	Grade II	636m south-east
1362778	Hogben Farmhouse	Grade II	402m south-east
1362779	Forehead Farmhouse	Grade II	341m south-east
1362780	Stable/outhouse about 10 metres north of Goldwell	Grade II	15m south-east
1362781	Barton Farm	Grade II	968m south
1362782	Granary/stowage about 35 metres north east of Ruffyn's Hill Farmhouse	Grade II	696m south-east
1362797	Stable/granary about 20 metres north west of Water Farm House	Grade II	760m north
Listed Buildings within the Initial Zone of Theoretical Visibility Visual Envelope			
NHLE reference	**Receptor**	**Importance**	**Distance from the site boundary**
1233902	Church of St Mary	Grade I	3.35km north-west
1233281	Mersham Manor	Grade I	1.24km north-west
1276693	Church of St John The Baptist	Grade I	1.24km north-west
1071165	Church of St Mary	Grade I	1.3km north
1362769	St Augustines Priory (medieval buildings)	Grade I	1.6km south
1276466	Mill House Swanton Mill	Grade II*	1.1km north-west
1233497	Barn about 30 metres north west of Mersham Manor	Grade II*	1.24km north-west
1276692	Bower Farmhouse	Grade II*	1.13km north
1185326	Lodge House	Grade II*	1.56km north
1071191	Church of St Peter and St Paul	Grade II*	2.9km south
1300006	Barn about 50 metres south west of Court Lodge	Grade II*	2.9km south

Stonestreet Green Solar

Stonestreet Green Solar

Environmental Impact Assessment Scoping Report

Appendix 4: Consultation Correspondence with Ashford Borough Council and Kent County Council on the Water Environment

Planning Inspectorate Reference EN010135

April 2022

BARTON WILLMORE now Stantec

[redacted]

From: foi@ashford.gov.uk
Sent: 06 December 2021 17:13
To: [redacted]
Subject: FOI 10173
Attachments: FOI 10173_2.docx

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear [redacted]

Please find attached related correspondence concerning your recent information request.

Kind regards

Freedom of Information Team

Corporate Policy Economic Development Communications

Ask For: Freedom of Information Team
Email: FOI@ashford.gov.uk

ASHFORD BOROUGH COUNCIL

Civic Centre
Tannery Lane
Ashford
Kent TN23 1PL
01233 331111

www.ashford.gov.uk
@ashfordcouncil
AshfordBoroughCouncil

Our Ref: FOI-10173
Date: 6 December 2021

Dear [redacted]

Thank you for your online request of 10 November 2021 requesting:

> *I am preparing a water resources EIA for a Nationally Significant Infrastructure Project whereby the application process will be made through a Development Consent Order. I would be grateful if you could provide me the following within 5 km of the site located at TR 05954 37400:*

- *for each Private Water Supply within the 3km search area:*
  - *supply type (domestic or commercial)*
  - *location(s) of the water source – national grid reference*
  - *source type (watercourse, spring, borehole etc.)*
  - *location and name / address of premise(s) that received the water*
  - *estimated maximum average volume of water provided by the supply and the number of persons served by the supply.*
- *Also in relation to flooding and flood risk, please could you provide information on:*
  - *historical flooding*
  - *known drainage/flood issues*
  - *what would expect to see/scope of works for an FRA of this type/magnitude*

My colleagues in our Planning service (Local Planning Authority) have indicated that they do not hold the requested information and have advised asking the Water Authority and or the Environment Agency.

I have however also asked my colleagues in the council's Environmental Health team to check their records as they do hold some information associated to Private Water Supplies. I will revert back to you if I am provided with anything.

Please do note however that if these are associated to private individuals the information I will be able to provide (if held) may be minimal.

Kind regards

Freedom of Information team

If you believe the Council has not complied with the Freedom of Information Act in relation to your request, you have the right to ask for an internal review. Internal review requests must be submitted no later than 40 working days after the date on which you believe that the Council failed to comply with the legislation and must be addressed to: Freedom of Information Manager, Ashford Borough Council, Civic Centre, Tannery Lane, Ashford, Kent, TN23 1PL or email foi@ashford.gov.uk. The Council's procedure for internal reviews can be viewed at https://www.ashford.gov.uk/freedom-of-information. Please remember to quote the reference number above in any future communications.

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, SK9 5AF; www.ico.org.uk; Tel. 0303 123 1113.

Ask For: Freedom of Information Team
Email: FOI@ashford.gov.uk

ASHFORD
BOROUGH COUNCIL

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Tannery Lane
Ashford
Kent TN23 1PL
01233 331111

www.ashford.gov.uk
@ashfordcouncil
AshfordBoroughCouncil

Our Ref: FOI-10173
Date: 6 December 2021

Dear [redacted]

Further to my earlier correspondence I have heard back from my colleagues within the Environmental Health team and they have indicated that:

They hold information on one private water supply (that we are aware of), this is just outside the 3km radius.

Post Code Location is TN25 6QL

Source Type Unknown.

Average volume of water, unknown.

Kind regards

Freedom of Information Team

If you believe the Council has not complied with the Freedom of Information Act in relation to your request, you have the right to ask for an internal review. Internal review requests must be submitted no later than 40 working days after the date on which you believe that the Council failed to comply with the legislation and must be addressed to: Freedom of Information Manager, Ashford Borough Council, Civic Centre, Tannery Lane, Ashford, Kent, TN23 1PL or email foi@ashford.gov.uk. The Council's procedure for internal reviews can be viewed at https://www.ashford.gov.uk/freedom-of-information. Please remember to quote the reference number above in any future communications.

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, SK9 5AF; www.ico.org.uk; Tel. 0303 123 1113.

[redacted]

From: Kent County Council <kcc.information@email.icasework.com>
Sent: 21 January 2022 16:41
To: [redacted]
Subject: Information request (ref: 26995668)
Attachments: Response (not held).pdf

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Information request
Our reference: 26995668

Dear [redacted]

Thank you for your request for information received on 21 January 2022.

Please find attached our response to your request.

Yours sincerely,

[redacted]
Information Access Officer

NOTE: Please do not edit the subject line when replying to this email.

Please ask for: [redacted]
Reference: 26995668
Email:
kcc.information@email.icasework.com
Date: 21 January 2022

Dear [redacted]

Thank you for your request for information made under the Environmental Information Regulations 2004 relating to private water supply. Please see the response provided below:

Wardell Armstrong is working on a project located at national grid reference (NGR) TR 05954 37400. Could you please also provide me with digital copies of the following within 5km of TR 05954 37400:

**** Private water supplies (licence holder, licence number, coordinates, quantity abstracted, groundwater levels, purpose of abstraction, source of abstraction)***

KCC does not hold information on private water supplies.

If you are unhappy with this response, and believe KCC has not complied with legislation, you have 40 working days from the date of this response to ask for a review. You can do this by following our complaints process; details can be found at this link https://www.kent.gov.uk/about-the-council/complaints-and-compliments#tab-10 on our website. Please quote reference 26995668.

If you remain dissatisfied following an internal review, you can appeal to the Information Commissioner, who oversees compliance with the Freedom of Information Act 2000. Details of what you need to do, should you wish to pursue this course of action, are available from the Information Commissioner's website http://ico.org.uk/concerns

I will now close your request as of this date.

Yours sincerely

[redacted]
Strategic and Corporate Services

[redacted]

From: KSL Enquiries <KSLE@environment-agency.gov.uk>
Sent: 12 January 2022 12:53
To: [redacted]
Subject: KSL 245817 CM - GM12014: Data Request - Flood Risk
Attachments: KSL 245817 CM - Product 6 (level grids only) data licence.pdf; KSL 245817 CM - Historic Flood Extents Map.pdf

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear [redacted]

RE: KSL 245817 CM - GM12014: Data Request – Flood Risk

Thank you for your enquiry which was received on 10 November 2021.
We apologise for the delay in replying and for any inconvenience caused. Thank you for your patience.
We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

In partial response to your enquiry and relating to flood risk;

Flood level data for watercourses

The following information is not available under the Open Government Licence. We are licensing the supplied data to you under the Environment Agency Conditional Licence .
However, you must first check the supporting information attached, to determine if the conditions on use are suitable for your purposes. If the conditions for use are not suitable for your purposes, this information is not provided with a licence for use, and the data is provided for the right to read only.

Here is a sharefile link to the level grids for our Ashford 2012 model and the 2016 climate change updates: https://ea.sharefile.com/d-s4518c593ccdc4ca5a76f303c6a70cd2a. The link will expire after 23 days from today's date.

The data is for the East Stour River, downstream of Aldington Flood Storage Reservoir. Whilst this is the best available data at this time, please be aware that a new fluvial modelling study covering this area is currently being undertaken. The project is estimated to be completed in 2022/23. The outputs from this new study will be used to inform our Flood Map. You may wish to contact us at a later date to ascertain whether flood risk has changed in this area, and if we have any new information for you.

We do not have data for the ordinary watercourses that are closer to the grid reference location supplied.

Historical flooding records

We hold records of historic flood events from rivers and the sea. Information on the floods that may have affected the area local to your site are provided below and in the attached map.

Dates of historic flood events in this area – March 1974, November 2000 and February 2001.

Please note that our records are not comprehensive. We would therefore advise that you make further enquiries locally with specific reference to flooding at this location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

We map flooding to land, not individual properties. Our historic flood event record outlines are an indication of the geographical extent of an observed flood event. Our historic flood event outlines do not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.

Please be aware that flooding can come from different sources. Examples of these are:

- from rivers or the sea
- surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system)
- overflowing or backing up of sewer or drainage systems which have been overwhelmed
- groundwater rising up from underground aquifers

Currently the Environment Agency can only supply flood risk data relating to the chance of flooding from rivers or the sea. However you should be aware that in recent years, there has been an increase in flood damage caused by surface water flooding or drainage systems that have been overwhelmed.

Any known drainage/flood issues

Please refer to the Aldington Flood Storage Reservoir upstream of your grid reference location. This is a link to the reservoir inundation mapping, explaining when and how to use them: https://www.gov.uk/guidance/reservoir-flood-maps-when-and-how-to-use-them.

Except where otherwise stated above or online, please refer to the Open Government Licence ,which explains the permitted use of this information.

If you have any further queries or if you'd like us to review the information we have provided under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 please contact us within two months.

Kind Regards,

[redacted]
Customers & Engagement Officer
Kent, South London & East Sussex

Environment Agency | Orchard House | Endeavour Park | London Road | West Malling | Kent | ME19 5SH

From: [redacted]
Sent: 10 November 2021 11:39
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Subject: 211110/lk14 - GM12014: Data Request

Good morning,

Wardell Armstrong is working on a project located at national grid reference (NGR) TR 05954 37400. Could you please also provide me with digital copies of the following within 5km of TR 05954 37400:

- Consented surface water and groundwater abstractions
    - licence holder
    - licence number
    - coordinates of abstraction source
    - quantity abstracted
    - groundwater levels
    - purpose of abstraction
    - source type of abstraction e.g. spring/ river/ borehole

- The following information for any surface water and groundwater discharges:
    - receiving waterbody / groundwater / to land
    - quantity of discharge per day

- Groundwater levels both historical and recent level monitoring
- Groundwater contour plans

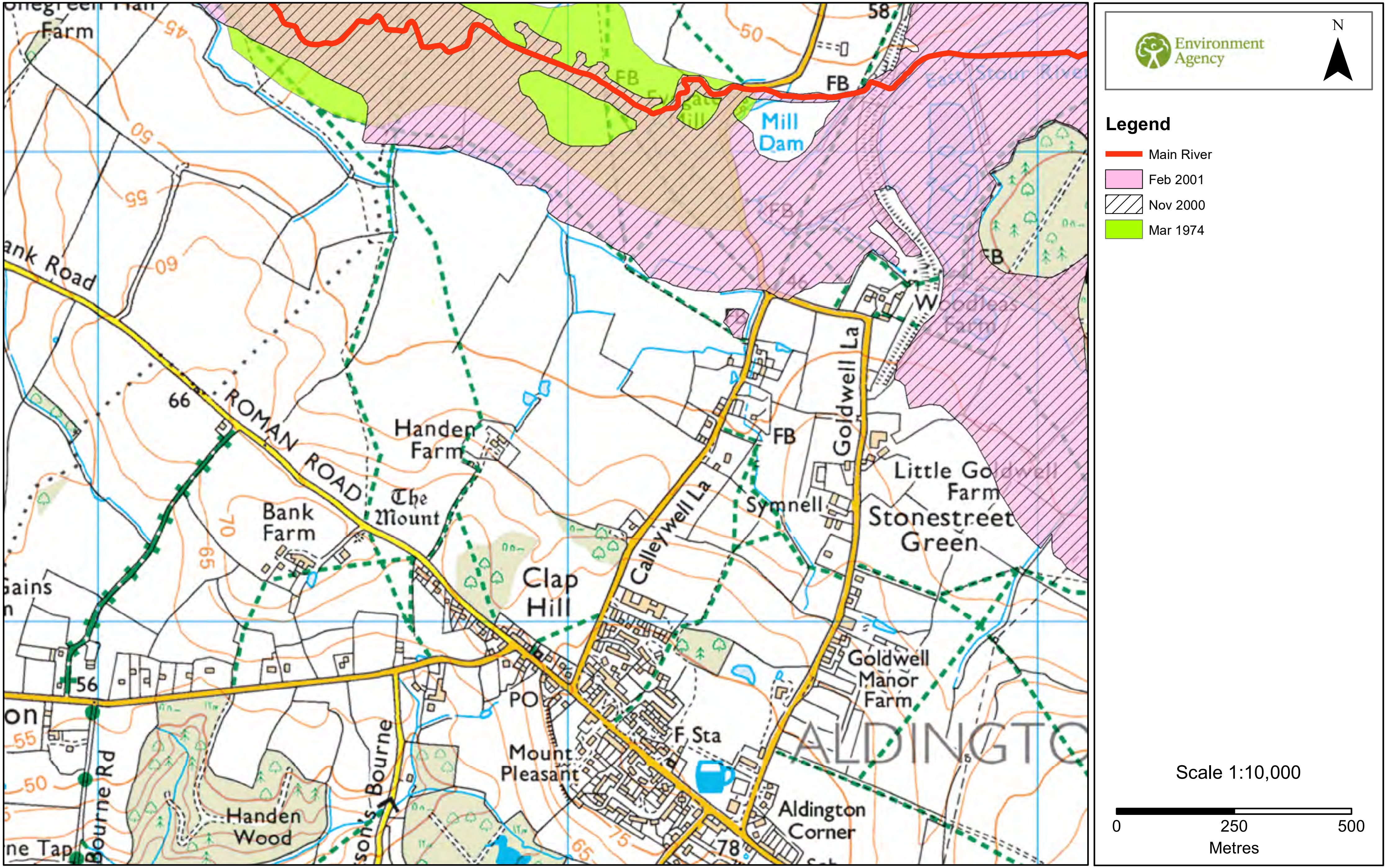
- WFD programme of measures from the catchment planning system, for the following waterbodies:
    - Romney Marsh between Appledore and West Hythe Water Body - GB107040019700
    - East Stour Water Body - GB107040019640
    - Aylesford Stream Water Body - GB107040019650

- The following information relating to flood risk:
    - Flood level data for watercourses
    - Historical flooding records
    - Any known drainage/flood issues

Many thanks

[redacted]

Historic Flood Extents Map centred on TR 05954 37400
Created 04 January 2022 [Ref: KSL 245817 CM]



Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

[redacted]

Our ref: KSL 245817 CM

Your ref: 211110/lk14 - GM12014

Date: 5th January 2022

Dear [redacted]

Enquiry regarding level grids for South Ashford 2D Modelling Study 2012 and climate change updates 2016

Thank you for your enquiry which was received on 10th November 2021.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. The information is attached.

The following information is not available under the Open Government Licence but we may be able to license it to you under the Environment Agency Conditional Licence:

Abstract

Name	Products 6 (level grids only)
Description	Model output (level) data for South Ashford 2D Modelling Study 2012 and climate change updates 2016
Licence	Environment Agency Conditional Licence
Conditions	1.0 You may use the Information for your internal or personal purposes and may only sublicense others to use it if you do so under a written licence which includes the terms of these conditions and the agreement and in particular may not allow any period of use longer than the period licensed to you. 2.0 Notwithstanding the fact that the standard wording of the Environment Agency Conditional Licence indicates that it is perpetual, this Licence has a limited duration of 5 years at the end of which it will terminate automatically without notice. 3.0 We have restricted use of the Information as a result of legal restrictions placed upon us to protect the rights or confidentialities of others. In this instance it is because of third

Environment Agency, Orchard House, Endeavour Park, London Road, West Malling, Kent, ME19 5SH
Email: enquiries@environment-agency.gov.uk
www.gov.uk/environment-agency

	party data. If you contact us in writing (this includes email) we will, as far as confidentiality rules allow, provide you with details including, if available, how you might seek permission from a third party to extend your use rights. 4.1 The Information may contain some data that we believe is within the definition of "personal data" under the Data Protection Act 1998 but we consider that we will not be in breach of the Act if we disclose it to you with conditions set out in this condition and the conditions above. This personal data comprises names of individuals or commentary relating to property that may be owned by an individual or commentary relating to the activities of an individual. 4.2 Under the Act a person who holds and uses or passes to others personal data is responsible for any compliance with the Act and so we have no option but to warn you that this means you have responsibility to check that you are compliant with the Act in respect of this personal data. 5.0 The location of public water supply abstraction sources must not be published to a resolution more detailed than 1km2. Information about the operation of flood assets should not be published.. 6.1 Where we have supplied model data which may include model inputs or outputs you agree to supply to the Environment Agency copies of any assessments/studies and related outputs, modifications or derivatives created pursuant to the supply to you of the Information, all of which are hereinafter referred to as "the Data". 6.2 You agree, in the public interest to grant to the Environment Agency a perpetual royalty free non-exclusive licence to use the Data or any part thereof for its internal purposes or to use it in any way as part of Environment Agency derivative products which it supplies free of charge to others such as incorporation into the Environment Agency's Open Data mapping products.
Information Warnings	Please be aware that model data is not raw, factual or measured but comprises of estimations or modelled results based on the data available to us.
Attribution	Contains Environment Agency information © Environment Agency and/or database rights. May contain Ordnance Survey data © Crown copyright 2022 Ordnance Survey 100024198.

However, you MUST first check the supporting information and the above link to determine if the conditions on use are suitable for your purposes. If they aren't, this information is not provided with a licence for use, and the data is provided for read right only.

Data Available Online

Many of our flood datasets are available online:

- Flood Map For Planning (Flood Zone 2, Flood Zone 3 ,Flood Storage Areas, Flood Defences, Areas Benefiting from Defences)
- Risk of Flooding from Rivers and Sea
- Historic Flood Map
- Current Flood Warnings

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Yours sincerely

East Kent Partnerships and Strategic Overview Team
Kent, South London and East Sussex Area

[redacted]

From: KSL Enquiries <KSLE@environment-agency.gov.uk>
Sent: 19 January 2022 13:44
To: [redacted]
Subject: KSL 245817 CM - GM12014: Data Request - WFD programme
Attachments: Measures for Data Request Checked.xlsb

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear [redacted]

KSL 245817 CM - GM12014: Data Request - WFD programme

Thank you for your enquiry which was received on 10 November 2021.
We apologise for the delay in replying and for any inconvenience caused. Thank you for your patience.
We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Regarding WFD programme of measures from the catchment planning system, for the following waterbodies:

- Romney Marsh between Appledore and West Hythe Water Body - GB107040019700
- East Stour Water Body - GB107040019640
- Aylesford Stream Water Body - GB107040019650

Please find attached a list of measures related to the three water bodies as requested. Measures will require funding/resource to go ahead, except for Water Industry National Environment Programme measures. Please also be advised that these measures are due for review which we plan to undertake this year so this list is subject to change.

In addition we have the following information

Romney Marsh between Appledore and West Hythe Water Body - GB107040019700
The Royal Military Canal is the primary watercourse in this catchment and it is connected to a network of ditches and channels. The flat marsh landscape is dominated by intensive agriculture.
Nutrient inputs from agriculture and sewage treatment are reasons for not achieving good status for Phosphate and dissolved oxygen (DO).
Fluctuations in DO levels are to an extent a natural feature of this type of static, marsh watercourse, however actions to reduce nutrient inputs and good water level management practices would be beneficial.
The water body has been identified as heavily modified for land drainage purposes. Any measures to mitigate the protected use should be planned and implemented at an operational catchment scale, and will require liaison with the Internal Drainage Board (IDB).

East Stour Water Body - GB107040019640
Water quality and flow in the East Stour are likely to impact four downstream river water bodies. High nutrient levels in this water body could have a detrimental impact on Stodmarsh National Nature Reserve (NNR).
The fish population lacks resilience, and opportunities to improve passage and habitat should be sought.
Generally the river is impacted by a combination of water quality (particularly high phosphate), habitat fragmentation and occasional low flows. Groundwater quality issues should also be addressed.

Aylesford Stream Water Body - GB107040019650

The Aylesford Stream issues from the Lower Greensand (GW) formation which runs parallel to the chalk escarpment of the North Downs. Along the Lower Greensand throughout Kent, the groundwater is impacted by nitrates and pesticides, with local impact by solvents, hydrocarbons and heavy metals. Development pressure, bank erosion, highway and commercial run-off, siltation, obstruction to fish passage and spread of invasive species could result in further detriment unless effective action is taken.

Please also refer to Catchment Data Explorer tool on data.gov

Please refer to the Open Government Licence , except where otherwise stated (e.g. online), which explains the permitted use of this information.

If you have any further queries or if you'd like us to review the information we have provided under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 please contact us within two months and we will happily do this for you.

Kind regards,

[redacted]
Customers & Engagement Officer
Kent, South London & East Sussex

Environment Agency | Orchard House | Endeavour Park | London Road | West Malling | Kent | ME19 5SH

From: [redacted]
Sent: 10 November 2021 11:39
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Subject: 211110/lk14 - GM12014: Data Request

Good morning,

Wardell Armstrong is working on a project located at national grid reference (NGR) TR 05954 37400. Could you please also provide me with digital copies of the following within 5km of TR 05954 37400:

- Consented surface water and groundwater abstractions
  - licence holder
  - licence number
  - coordinates of abstraction source
  - quantity abstracted
  - groundwater levels
  - purpose of abstraction
  - source type of abstraction e.g. spring/ river/ borehole

- The following information for any surface water and groundwater discharges:
  - receiving waterbody / groundwater / to land
  - quantity of discharge per day

- Groundwater levels both historical and recent level monitoring
- Groundwater contour plans

- WFD programme of measures from the catchment planning system, for the following waterbodies:
  - Romney Marsh between Appledore and West Hythe Water Body - GB107040019700
  - East Stour Water Body - GB107040019640
  - Aylesford Stream Water Body - GB107040019650

- The following information relating to flood risk:
    - Flood level data for watercourses
    - Historical flooding records
    - Any known drainage/flood issues

Many thanks

[redacted]

Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.

Water Body ID	Water Body Name	Operational Catchment	Management Catchment	Title
GB107040019650	Aylesford Stream	Stour Upper	Stour	Investigate and address agricultural run-off
GB107040019640	East Stour	Stour Upper	Stour	PR19 WINEP measure: Phosphorus improvement scheme at Sellindge WWTW
GB107040019640	East Stour	Stour Upper	Stour	Pollution prevention farm visits with abstraction visits to reduce diffuse pollution
GB107040019640	East Stour	Stour Upper	Stour	Pollution prevention visits to investigate urban and transport drainage
GB107040019640	East Stour	Stour Upper	Stour	Catchment sensitive farming pollution prevention visit
GB107040019640	East Stour	Stour Upper	Stour	Pre and post fish surveys planned - Upstream of confluence with Horton Priory Dyke
GB107040019640	East Stour	Stour Upper	Stour	Improve maintenance at M20 balancing lagoons
GB107040019640	East Stour	Stour Upper	Stour	Pollution prevention visits to ascertain which properties are contributing to diffuse pollution
GB107040019640	East Stour	Stour Upper	Stour	Habitat improvements associated with McCarthur Glen expansion (Ashford Outlet Centre)
GB107040019640	East Stour	Stour Upper	Stour	Ashford International Station Enhancement Scheme
GB107040019640	East Stour	Stour Upper	Stour	Willesborough Dykes Nature Park - in-channel and floodplain improvements
GB107040019640	East Stour	Stour Upper	Stour	Investigate and improve fish passage at Aldington FSR
GB107040019640	East Stour	Stour Upper	Stour	Agricultural Improvement Measure
GB107040019640	East Stour	Stour Upper	Stour	Habitat protection / creation at Junction 10a
GB107040019640	East Stour	Stour Upper	Stour	Investigate and mitigate mis-connections / CSO operations in Willesborough and Aylesford Green
GB107040019640	East Stour	Stour Upper	Stour	Walk over survey to assess possible habitat improvements and removal/alteration of fish obstructions
GB107040019640	East Stour	Stour Upper	Stour	Gibbons Brook (Sellindge) Enhancement Scheme
GB107040019640	East Stour	Stour Upper	Stour	Investigate the degree, extent and source of excess silt within the waterbody
GB107040019640	East Stour	Stour Upper	Stour	In channel work associated with re-development of Folkestone Race Course
GB107040019640	East Stour	Stour Upper	Stour	Pollution prevention visits to ascertain which properties are contributing to diffuse pollution
GB107040019640	East Stour	Stour Upper	Stour	River restoration project at Cheeseman's Green.
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Sub-catchment wide. Agricultural pollution prevention under cross-compliance, CSF, standalone visits
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Sub-catchment wide. Rural drainage pollution prevention to improve rural drainage discharge quality.
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Abstraction visits
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Set back track and reprofile bank at Bourne Lane, Hamstreet
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Use Government drain as a habitat area adjacent to RMC and manage as a nature reserve
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Add 2 stage channel in sections of Government drain, manage as nature reserve
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Revise and implement an integrated Water Level Management Plan. This action is sub-catchment wide
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Sub catchment wide - implement vegetation management strategy to include control of invasive species.
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Develop and implement a catchment desilting plan. This action is subcatchment wide.
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	Identify improvements to fish passage
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	PR19 WINEP measure: No deterioration of Phosphorus scheme at Hamstreet WWTW
GB107040019700	Romney Marsh between Appledore and West Hythe	Reading Cradlebridge and RMC	Rother	PR19 WINEP measure: Improvement to Hamstreet WWTW infrastructure

[redacted]

From: KSL Enquiries <KSLE@environment-agency.gov.uk>
Sent: 12 January 2022 14:02
To: [redacted]
Subject: KSL 245817 CM - GM12014: Data Request - discharges

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear [redacted]

KSL 245817 CM - GM12014: Data Request - discharges

Thank you for your enquiry which was received on 10 November 2021.
We apologise for the delay in replying and for any inconvenience caused. Thank you for your patience.
We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Regarding surface water and groundwater discharges in the first instance please refer to **https://environment.data.gov.uk/public-register/view/search-water-discharge-consents** and **https://data.gov.uk/dataset/55b8eaa8-60df-48a8-929a-060891b7a109/consented-discharges-to-controlled-waters-with-conditions** where you should be able to find the information you are looking for.

Please refer to the data licencing information available online at the above links.

If you have any further queries or if you'd like us to review the information we have provided under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 please contact us within two months and we will happily do this for you.

Kind regards,

[redacted]
Customers & Engagement Officer
Kent, South London & East Sussex

Environment Agency | Orchard House | Endeavour Park | London Road | West Malling | Kent | ME19 5SH

From: [redacted]
Sent: 10 November 2021 11:39
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Subject: 211110/lk14 - GM12014: Data Request

Good morning,

Wardell Armstrong is working on a project located at national grid reference (NGR) TR 05954 37400. Could you please also provide me with digital copies of the following within 5km of TR 05954 37400:

- Consented surface water and groundwater abstractions

- licence holder
- licence number
- coordinates of abstraction source
- quantity abstracted
- groundwater levels
- purpose of abstraction
- source type of abstraction e.g. spring/ river/ borehole

- The following information for any surface water and groundwater discharges:
    - receiving waterbody / groundwater / to land
    - quantity of discharge per day

- Groundwater levels both historical and recent level monitoring
- Groundwater contour plans

- WFD programme of measures from the catchment planning system, for the following waterbodies:
    - Romney Marsh between Appledore and West Hythe Water Body - GB107040019700
    - East Stour Water Body - GB107040019640
    - Aylesford Stream Water Body - GB107040019650

- The following information relating to flood risk:
    - Flood level data for watercourses
    - Historical flooding records
    - Any known drainage/flood issues

Many thanks

[redacted]

wardell armstrong

Stonestreet Green Solar

Environmental Impact Assessment Scoping Report

Appendix 5: Consultation Correspondence with Ashford Borough Council on Noise

Planning Inspectorate Reference EN010135

April 2022

[redacted]

From: [redacted]
Sent: 16 December 2021 11:01
To: [redacted]

[redacted]

Subject: RE: Stonestreet Green Solar - DCO Application - Noise Assessment

CAUTION: This email originated from outside the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Morning [redacted]

Thank you for your email. I don't think we've received anything as yet – however I've copied in my colleague who picks up the vast majority of our planning consultations.

The proposed methodology appears satisfactory to us. However, not being overly familiar with solar plants, I would query whether there are normally any LFN noise issues associated with the mentioned plant that may require additional review above standard BS4142 assessment methodology. We would welcome comment with this regard on any report that comes forth.

Kind regards
[redacted]

[redacted]
Team Leader – Environmental Protection & Licensing
Ashford Borough Council

Ashford Borough Council

From: [redacted]
Sent: 16 December 2021 09:09
To: [redacted]
Cc: [redacted]
Subject: Stonestreet Green Solar - DCO Application - Noise Assessment

[CYBER SECURITY WARNING] This email is from an external source - be careful of attachments and links. Please remember your Cyber Security training and report suspicious emails.

Hello [redacted]

I sent a copy of the email below to [redacted] on Friday last week, so this may have crossed your desk already!

Wardell Armstrong have been commissioned to undertake a noise assessment as part of the DCO Application and EIA for a solar farm project at Stonestreet Green, Kent.

The current extent of the Application Site is shown in Figure 01 attached.

At this stage the exact location and specification of the plant proposed to be installed is unknown, however it is likely that typical infrastructure associated with solar generation would include Transformers, Inverters and battery storage infrastructure.
The noise emissions of some items of plant are likely to increase during the hours of daylight.

Noise sensitive receptors around the site have been identified and clustered into those likely to have a similar background noise level.
For each cluster of receptors, a representative monitoring position has been identified for unattended monitoring (at least 24 hours).
The road network around the site consists of small narrow lanes which are unlikely to be busy with traffic constantly.
It is considered likely that the background noise level will be mainly influenced by the M20 and the HS1 Rail Line, as such the clusters have been divided with a similar distance from the M20.
Where identified receptors are not within a cluster, short term attended monitoring will be undertaken during the day and night.

At this stage 6no unattended monitoring positions are proposed, pending access to the property or representative locations inside the redline, as:

1. Spring Cottage, Roman Road
2. The Haven
3. Adlington Primary School
4. Woodleas Farm
5. Handen Farm
6. Evegate Mill

Further to this, short term monitoring will be conducted at Parkwood Cottage, to the north of the rail line and Forehead Farm to the east of the Application Site.

Following baseline noise monitoring, a noise modelling exercise will be undertaken to predict the noise level at each of the identified receptors in order for a BS4142 assessment to be undertaken.

It is proposed that the LOAEL be defined as a rating level, inclusive of any character penalties, not exceeding the measured background noise level.
It is proposed that the SOAEL be defined as a rating level, inclusive of any character penalties, not exceeding the measured background noise level + 5dB.

Where construction methodologies are known, an assessment of construction noise will be undertaken including inclusion of an NVMP into the wider CEMP.

We intend to mobilise monitoring to the area soon in the new year once there is a spell of settled weather and access can be arranged.

At this stage, we would appreciate any comments Ashford Council may have regarding the proposed monitoring and assessment methodology.

If you require any further information or have any questions relating to the proposal, please do not hesitate to contact me.

Many Thanks,

[redacted]

[redacted] | Associate Director - Acoustics
Wardell Armstrong LLP
41-50 Futura Park, Aspinall Way, Middlebrook, Bolton, BL6 6SU

[redacted]