Ansty Garden Community

Environmental Statement

Volume 2

November 2023

CHAPTER 10: AGRICULTURE AND SOILS

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10 Agriculture and Soils

10.1 Scope of Assessment

10.1.1 This chapter of the ES assesses the likely significant effects of the Proposed Development and Parkland Reserve Site in terms of agricultural land and soils. It is supported by **ES Volume 4, Appendix F**, which provides the Agricultural Land Classification (ALC) results for the Site and for the Parkland Reserve Site.

10.1.2 As outlined in **Chapter 1: Introduction** and **Chapter 3: EIA Methodology**, a separate outline planning application for the Parkland Reserve Site is being submitted in parallel. This planning application will comprise:

"*Change of use of farmland and woodland to parkland reserve to include public access and instigation of long-term management and rewilding regime, including establishment of pedestrian and cycle tracks, with new pedestrian and cycle access points off Cuckfield Road to the south and Staplefield Road to the north. Proposals to include the addition of a wooden viewing platform just south of the High Weald Landscape Trail where is crosses through the site. Sports pitches at Beech Farm Field to remain in sports use.*"

10.1.3 Given that the proposed works on the Parkland Reserve Site have the potential to result in significant effects on agriculture and soils, the Parkland Reserve Site has been assessed alongside the Proposed Development within this chapter.

10.1.4 The chapter describes: the assessment methodology; the baseline conditions currently existing at the Site and the Parkland Reserve Site; the likely significant effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; the likely residual effects after these measures have been employed; and the cumulative effects associated with the Proposed Development and the Parkland Reserve Site in combination with other developments within 5 km of the Site and the Parkland Reserve Site.

10.1.5 This chapter has given consideration to the 'Type 2' cumulative effects for committed developments within a 5 km radius from the boundary of the Site and the Parkland Reserve Site.

10.1.6 'Type 1' cumulative ('intra-project') effects, which are combined effects of individual EIA topic effects on a particular receptor, are considered in **ES Volume 2, Chapter 14: Effect Interactions**.

10.2 Key Legislation, Policy and Guidance Considerations

10.2.1 The assessment of potential effects on agricultural land, soils and businesses has been undertaken within the context of relevant planning policies, guidance documents and legislative instruments, as summarised below.

Legislation and Regulation

10.2.2 The Town and Country Planning (Development Management Procedure) (England) Order 2015[1] sets out the requirements for consultation with Natural England. This sets the threshold for consultation at the loss of at least 20 hectares of Best and Most Versatile (BMV) agricultural land, which is land of ALC Grades 1, 2 and 3a. There are fiver grades, with Grade 3 divided into subgrades, as follows:

- Grade 1: excellent quality;
- Grade 2: very good quality;
- Subgrade 3a: good quality;
- Subgrade 3b: moderate quality;
- Grade 4: poor quality; and
- Grade 5: very poor quality.

Planning Policy

National Planning Policy

10.2.3 The National Planning Policy Framework (NPPF)[2] (2023) paragraph 174 notes that planning policies and decisions should contribute to and enhance the natural and local environment by, inter alia, recognising "*the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land*".

10.2.4 Paragraph 175 deals with plan making. It requires plans to, inter alia, allocate land with the least environmental or amenity value, where consistent with other policies in the NPPF. Footnote 58 of the NPPF identifies 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*".

10.2.5 There is no definition of what constitutes "significant" development. However, the *"Guide to assessing development proposals on agricultural land"*[3] (Natural England, February 2021) advises local planning authorities to "*take account of smaller losses (under 20 hectares) if they're significant when making your decision*", suggesting that 20 ha is a suitable threshold for defining "significant" in most cases.

[1] The Town and Country Planning (Development Management Procedure) (England) Order 2015, SI 2015 No 595, Schedule 4 part y (2015)

[2] DLUHC, National Planning Policy Framework, (5 September 2023)

[3] Natural England, Guide to Assessing Development Proposals on Agricultural Land (5 February 2021)

Local Policy

10.2.6 The Mid-Sussex District Plan 2014 – 2031 (March 2018)[4], Policy DP12 "Protection and Enhancement of Countryside" explanatory text explains that "The Capacity of Mid Sussex District to Accommodate Development Study"[5] (Land Use Consultants, June 2014) identifies no Grade 1 ALC and very little Grade 2 ALC in the District, but Grade 3 ALC is common. It should be noted that this ES chapter does not seek to differentiate between the subgrades of Grade 3.

10.2.7 In that context policy DP12 provides the following policy:

"*Agricultural land of Grade 3a and above will be protected from non-agricultural development proposals. Where significant development of agricultural land is demonstrated to be necessary, detailed field surveys should be undertaken and proposals should seek to use areas of poorer quality land in preference to that of higher quality*".

Technical Standards and Guidance

10.2.8 The following guidance is of relevance to the Proposed Development and the Parkland Reserve Site:

- Safeguarding our soils: a strategy for England, Department for Environment, Food and Rural Affairs (Defra[6]) (2009) – this explains the importance of soil as a resource;
- A new perspective on land and soil in Environmental Impact Assessment, Institute of Environmental Management and Assessment (IEMA[7]) (February 2022) – this IEMA guide sets out thresholds and significance criteria, and addresses soil properties as distinct from biomass production (ALC grade); and
- Construction Code of Practice for the Sustainable use of Soils on Construction Sites, Defra[8] (2009) – this document addresses good practice for handling soils being moved or stored on construction sites.

[4] Mid Sussex District Council, Mid Sussex District Local Plan 2014-2031 (March 2018)

[5] Land Use Consultants, The Capacity of Mid Sussex District to Accommodate Development (June 2014)

[6] Department for Environment, Food and Rural Affairs (Defra) Safeguarding our Soils (2009)

[7] Institute of Environmental Management and Assessment (IEMA) Guide: a new perspective on land and soil in Environmental Impact Assessment (February 2022)

[8] Defra, Construction Code of Practice for the Sustainable use of Soils on Construction Sites (2009)

10.3 Assessment Methodology

10.3.1 This section presents the methodology which has been used to assess the potential effects of the Proposed Development and Parkland Reserve Site in relation to the agricultural land quality and soils at the Site and Parkland Reserve Site.

Determination of Baseline

10.3.2 The study area for this assessment is both the 'Site' and the 'Parkland Reserve Site'.

10.3.3 To determine the agricultural land quality, it was necessary to carry out a detailed Agricultural Land Classification (ALC) survey, undertaken in November and December 2022[9] of the Site, and in May and June 2023 for the Parkland Reserve Site[10].

10.3.4 The agricultural land quality of the Site has been assessed by the use of the ALC, which was devised by the Ministry of Agriculture, Fisheries and Food (MAFF)[11]. The methodology was last revised in 1988 and classifies land according to the extent to which its inherent physical or chemical characteristics impose long-term limitations on agricultural use.

10.3.5 The ALC system divides land into five grades 1 to 5, with grade 3 divided into subgrades of 3a and 3b. The NPPF places Grades 1, 2 and 3a within the definition of 'best and most versatile agricultural land' (BMV). Natural England in their Technical Information Note TIN049 (2012)[12] estimate that approximately 42 % of agricultural land in England is of Grades 1, 2 and 3a. The Utilised Agricultural Area (i.e. the area of land actively farmed) of England on 1st June 2023[13] (Defra, 28th September 2023) was 8.8 million hectares. This indicates that over 3.7 million hectares of land in active agricultural use is of BMV quality. BMV therefore, is not considered a rare resource nationally.

10.3.6 The ALC report and plan for the Site are presented in **ES Volume 4, Appendix F1**. The ALC report and plan for the Parkland Reserve Site are presented in **ES Volume 4, Appendix F2**.

[9] This is reported in the **ES Volume 4, Appendix F1**

[10] These are reported in **ES Volume 4, Appendix F2**

[11] Ministry of Agriculture, Fisheries and Food (MAFF), Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for grading the quality of agricultural land (October 1988)

[12] Natural England Technical Information Note 049 (TIN049) (2012) – Agricultural Land Classification: protecting the best and most versatile agricultural land.

[13] Defra, Agricultural Land Use in England at 1 June 2022 (29th September 2022)

Prediction Methodology

10.3.7 The general approach to assessing the effects of development on agricultural land, soils and farm businesses was previously (prior to 2022) well established. In 2022, however, IEMA published a Guide and the methodology set out in that Guide has been adopted in this assessment, as it represents the most recent statement of good practice.

10.3.8 The IEMA Guide's methodology results in agricultural land losses having greater significance than was generally previously assessed in the ES methodologies. It was common, prior to 2022, for the magnitude of impact thresholds to be set at <5 ha, 5 - 20 ha, 20 - 50 ha and >50 ha. Under IEMA's Guide, however, they are set at 0 ha, <5 ha, 5 - 20 ha and >20 ha. Therefore, sites experience a major magnitude of change at a much lower threshold.

10.3.9 Prior to 2022, it was common practice to place all land of BMV into the 'high' sensitivity category. The IEMA Guide's methodology places Grades 1 and 2, however, into a 'very high' sensitivity. The result is that where land of Grades 1 and 2 are involved in a development, the significance has increased.

10.3.10 It is estimated in TIN049 that there are of the order of 1.85 million hectares of Grade 1 and Grade 2 agricultural land in active use in England. The losses, and the significance of impacts assessed under the IEMA Guide, therefore, need to be considered in that context, including against the scarcity or abundance of the resource nationwide and more locally.

10.3.11 Natural England need to be consulted where more than 20 ha of Grades 1, 2 and 3a land (BMV) is potentially affected. It is logical, therefore, that a development that triggers this consultation threshold is considered significant in EIA terms, and that a development that falls below the consultation trigger may be significant in local terms, but not in EIA terms. The thresholds used follow this approach.

10.3.12 The significance criteria which have been used within this assessment have been devised by the project's agricultural consultants (Kernon Countryside Consultants Ltd), based on professional judgement, whilst taking into account the IEMA Guide[14]. The assessment process sets out the sensitivity of receptors and magnitude of impact in **Table 10.1** and **Table 10.2**, respectively, and then uses the matrix presented in **Table 10.3** to determine the resulting significance of the effects. They place all land of BMV quality into the high sensitivity category, in accordance with the IEMA Guide; therefore, a worst-case scenario has been assessed.

10.3.13 It should be noted that the criteria used within this assessment (i.e. sensitivity of receptors, magnitude of impact and the subsequent matrix) to determine the

[14] Reference 7, ibid

significance of effects within this ES chapter deviates from that set out in **Chapter 3: EIA Methodology**. The criteria have been formed to be specific to agricultural land; as such, it has been based on the IEMA Guide, professional judgement and experience relating to the assessment of agriculture and soils.

10.3.14 There are three key areas of consideration within the assessment: agricultural land, soils and the agricultural businesses affected, as set out below:

- **Agricultural land**: The assessment considers whether the Proposed Development and the Parkland Reserve Site will have a direct, long-term impact on the agricultural land and in particular agricultural land quality as measured by the ALC.
- **Soils**: The assessment considers whether the Proposed Development and the Parkland Reserve Site will have a direct, short term or long-term impact on the soils during the construction and operational phases.
- **Agricultural business**: The assessment considers whether the Proposed Development and the Parkland Reserve Site will have a direct or an indirect, long-term impact (beneficial or adverse) on the agricultural business.

Sensitivity of Receptors

10.3.15 The sensitivity of each receptor was evaluated as being high, medium, low, or negligible based upon a review of the baseline position of each receptor. The receptors and their definition of sensitivity of a receptor (being high, medium, low or negligible) is based on a scale which is set out in **Table 10.1**.

Table 10.1: Receptor Sensitivity Descriptions

Sensitivity	ALC / biomass production	Sensitivity of topsoil and subsoil	Agricultural businesses
High	Land of ALC Grades 1, 2 and 3a (BMV)	High clay soils where the field capacity days (FCD) is >150, or medium textured soils where the FCD is >225.	-
Medium	Land of ALC Subgrade 3b	High clay soils where the FCD is <150, or medium textured soils where the FCD is <225.	Full time businesses, and farm businesses where the location of land is particularly important such as dairy farms. Farms affected outside the Site and Parkland Site boundary.
Low	Land of ALC Grades 4 and 5	Soils with a high sand fraction where the FCD is <225.	Part-time farms with low sensitivity to change, e.g.

Sensitivity	ALC / biomass production	Sensitivity of topsoil and subsoil	Agricultural businesses
			arable land held on short term arrangements.
Negligible	Land of ALC Grades 4 and 5 with only indirect links	-	Agricultural land that is not farmed or does not form part of a farm business.

Notes: FCD is field capacity days, which is days when the soils are saturated with water.

Magnitude of Impact

10.3.16 The magnitude of impact to a receptor has been determined by considering the estimated deviation from the baseline conditions both before, and, if required, after mitigation. The scale used for determining the magnitude of impact has been based on **Table 10.2**.

Table 10.2: Magnitude of Impact Descriptors

Magnitude of Impact	Definition	
	Effects on Agricultural Land (Soils)	**Effects on Farm Businesses (Agricultural businesses)**
High	Development would directly lead to the loss (including permanent sealing or land quality downgrading) of over 20 hectares of soil-related features; or potential for improvement in one or more soil functions over an area of more than 20 ha.	The impact of development would render a full-time agricultural business non-viable.
Medium	Development would directly lead to the loss (including permanent sealing or land quality downgrading) over an area of between 5 and 20 hectares of soil-related features; or potential improvement in one or more soil functions over an area of between 5 ha and 20 ha.	The impact of the development would require significant changes in the day-to-day management of a full-time agricultural business, or closure of a part time agricultural business. Loss of buildings or impacts on drainage or water supplies affecting the potential for at least 5 ha of adjacent land to be farmed fully.
Low	Development would directly lead to the loss (including permanent sealing or land downgrading) of less than 5 hectares of soil-related functions; or potential for improvement in one of more soil functions over an area of less than 5 ha.	Land take would require only minor changes in the day-today management / structure of a full-time agricultural business or land take would have a significant effect on a part time business. Minor effects, direct or indirect, on surrounding land beyond the boundaries of the Site and Parkland Reserve Site.

Magnitude of Impact	Definition	
	Effects on Agricultural Land (Soils)	**Effects on Farm Businesses (Agricultural businesses)**
Negligible	No discernible loss or reduction or improvement of soil functions or volumes.	Land take would require only negligible changes in the day-to-day management of a full-time agricultural business or land would require only minor changes to a part time farm business.

Impact Significance

10.3.17 **Table 10.3** provides a matrix which has been used for determining the significance of an effect based on the sensitivity of the receptor and magnitude of impact.

Table 10.3: Criteria for Assessing Effect Significance

Magnitude of Impact	Sensitivity of Receptor/ Receiving Environment to Change / Effect			
	High	**Medium**	**Low**	**Negligible**
High	Major beneficial / adverse	Moderate beneficial / adverse	Minor beneficial / adverse	Minor beneficial / adverse
Medium	Moderate beneficial / adverse	Minor beneficial / adverse	Minor beneficial / adverse	Negligible
Low	Minor beneficial / adverse	Minor beneficial / adverse	Negligible	Negligible
Negligible	Minor beneficial / adverse	Negligible	Negligible	Negligible

10.3.18 Effects which are classified as 'major' are considered significant in EIA terms. Effects which are classified as 'moderate' are not considered to be significant in EIA terms. This is based on professional judgement and experience. Consequently, the loss of less than 20ha of BMV is not considered significant in EIA terms. Therefore, an effect below the threshold for consultation with Natural England, whilst a moderate impact, is not significant in EIA terms. Effects which are classified as 'minor' or 'negligible' are considered 'not significant' in development management and EIA terms.

Limitations and Assumptions

10.3.19 There were no limitations in the collection of data at the Site and the Parkland Reserve Site.

10.3.20 The ALC methodology was last revised in 1988. This methodology uses a climate data set from 1950-1980 as it the standard recognised approach. There is no indication that there will be a revision of the ALC methodology.

10.4 Scoping and Consultation

10.4.1 A formal scoping process with MSDC was not undertaken and no statutory undertakers were directly consulted to advise on the scope of the ES Chapter. However, the ES Chapter has been prepared based on significant previous experience and local knowledge and understanding. No specific elements of agriculture and soils have been scoped out of the assessment.

10.5 Baseline Assessment and Identification of Key Receptors

10.5.1 The ALC methodology provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The ALC system divides agricultural land into five grades. Grade 1 of the ALC is described as being of excellent quality and Grade 5, at the other end of the scale, is described as being of very poor quality. The current guidelines and criteria for ALC were published by the Ministry of Agriculture, Fisheries and Food (MAFF) in 1988 ('Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land'[15]).

10.5.2 The ALC methodology is described in Natural England's Technical Information Note TIN049[16]. This explains how ALC is carried out and that 42 % of England is estimated to be of BMV.

ALC Survey Results

10.5.3 This chapter describes the land quality of the Site first, as that is the area where physical land sealing or disturbance is proposed, which would result in the greatest potential impact. The chapter then describes the Parkland Reserve Site.

The Site

10.5.4 A total of 76 auger bore sites were examined over the Site and the land was graded in accordance with the ALC methodology. Four soil pits (the location of which is identified in Annex 2b of **ES Volume 4, Appendix F1**) were dug to better describe profiles, and six samples were sent for particle size analysis to validate the hand-texturing results.

[15] Reference 11, ibid

[16] Reference 12, ibid

10.5.5 The factors affecting the ALC are set out in the analysis in **ES Volume 4, Appendix F1**. The Site has no direct climatic or physical limitations to land quality.

10.5.6 Annual rainfall is moderate at 808 mm per annum. Temperature, represented by the accumulated temperature above 0°C between January and June, indicates warm conditions typical of much of lowland Britain. The field capacity period, that period when the soils are at or above field capacity, is around 172 days. The rainfall is sufficient to offset a drought restriction for soils identified across the Site.

10.5.7 As described in detail in **ES Volume 4, Appendix F1**, the majority of the Site comprises brown or dark greyish below medium clay loam, heavy silt clay loam, or silty clay topsoil over clay or silty clay subsoils. The subsoils are generally poorly structured. Most of the Site is Wetness Class IV and falls into ALC Subgrade 3b.

10.5.8 At a small number of sample points there was a moderately structured upper subsoil, and small areas of Subgrade 3a and Grade 2 have been identified.

10.5.9 In the north-east corner of the Site are fine sandy loam topsoils over moderately structured fine sandy subsoils, with no limitation to land grade and falling into ALC Grade 1.

10.5.10 The land quality across the Site comprises a mixture of mostly Subgrade 3b with areas of Subgrade 3a, Grade 2 and a patch of Grade 1. The results are set out in **Table 10.4**.

Table 10.4: Results of ALC of the Site

Grade	Description	Area (ha)	Proportion (%)	Proportion of Agricultural Land
1	Excellent	1.6	2	2
2	Very good	6.6	7	9
3a	Good	5.0	5	7
3b	Moderate	63.5	64	82
N/A	Non-agricultural	21.75	22	-
U	Urban	0.3	0	-
Total		**98.75**	**100.0**	**100.0**

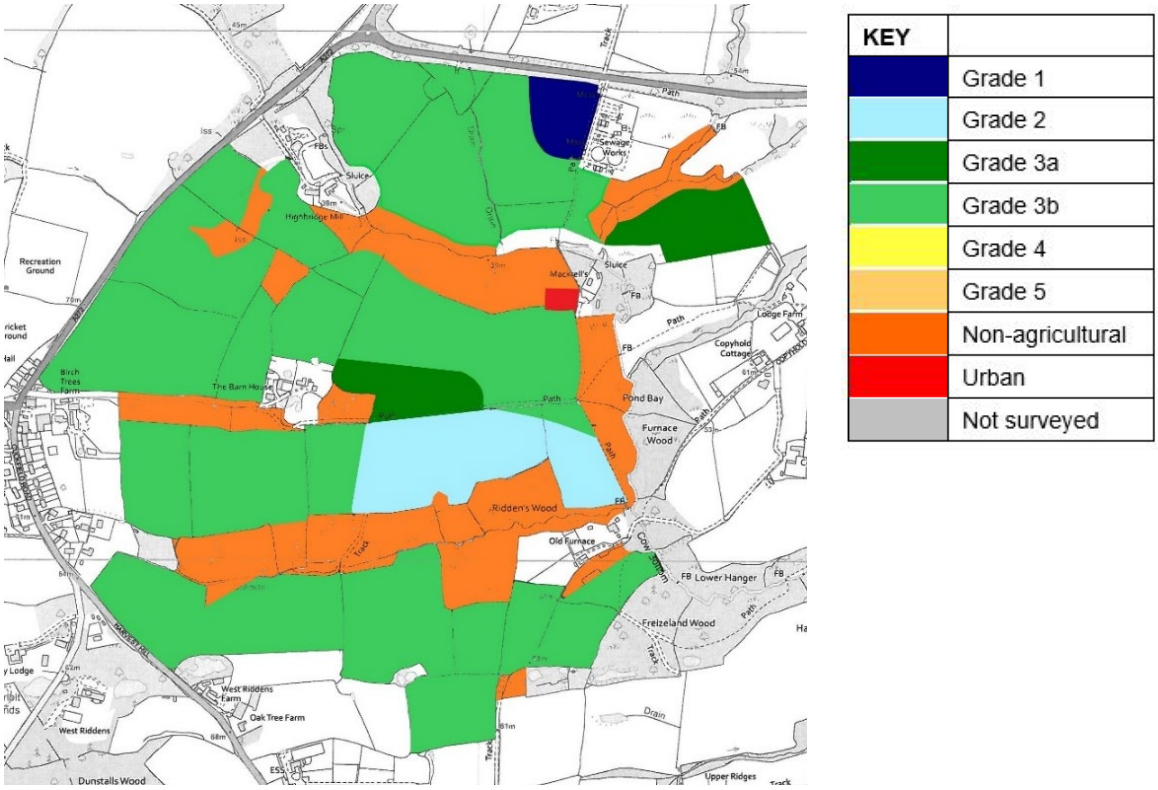
10.5.11 The detailed ALC report is set out in **ES Volume 4, Appendix F1** and the distribution of grades is provided on Plan KCC3307/02, presented at the end of Appendix B of **ES Volume 4, Appendix F1**.

10.5.12 The distribution is as shown on the ALC plan presented in **ES Volume 4, Appendix F1**, with an extract shown in **Figure 10.1**.

10.5.13 Accordingly, the Site is a mixture of land grades. Approximately 13.2 ha, some 13.4 % of the Site, is of Grades 1, 2 and 3a, which is best and most versatile. The Grade 1 and some of the Subgrade 3a land is in small block at the north-east corner of the Site.

There is a larger block of Grade 2 and some Subgrade 3a in the centre of the Site, but this is generally mixed with Subgrade 3b making it difficult to use separately. This is discussed in the 'Assessment of Likely Significant Effect' section of this chapter. The areas of Grades 1, 2 and 3a are of high sensitivity (**Table 10.1**). The areas of subgrade 3b, which amount to 82.8 % of the agricultural land within the Site, are of medium sensitivity, and are not of BMV quality.

Figure 10.1: Extract from ALC Plan showing the ALC Distribution Part of the Site



The Parkland Reserve Site

10.5.14 The ALC of the Parkland Reserve Site is described in the ALC report presented in **ES Volume 4, Appendix F2**. The northern most part of the Parkland Reserve Site is sports pitches and was classified as non-agricultural. 55 % is woodland and was recorded as non-agricultural. The agricultural land quality is influenced by the mostly medium or heavy clay loam soils over clay or clay loam subsoils and is limited by wetness. In some areas, a sandier soil results in no slowly permeable layer and the land is better quality, as described in the detailed ALC report presented in **ES Volume 4, Appendix F2**.

10.5.15 The ALC results from the Parkland Reserve Site are presented in **Table 10.5** and shown on the plan in **ES Volume 4, Appendix F2**.

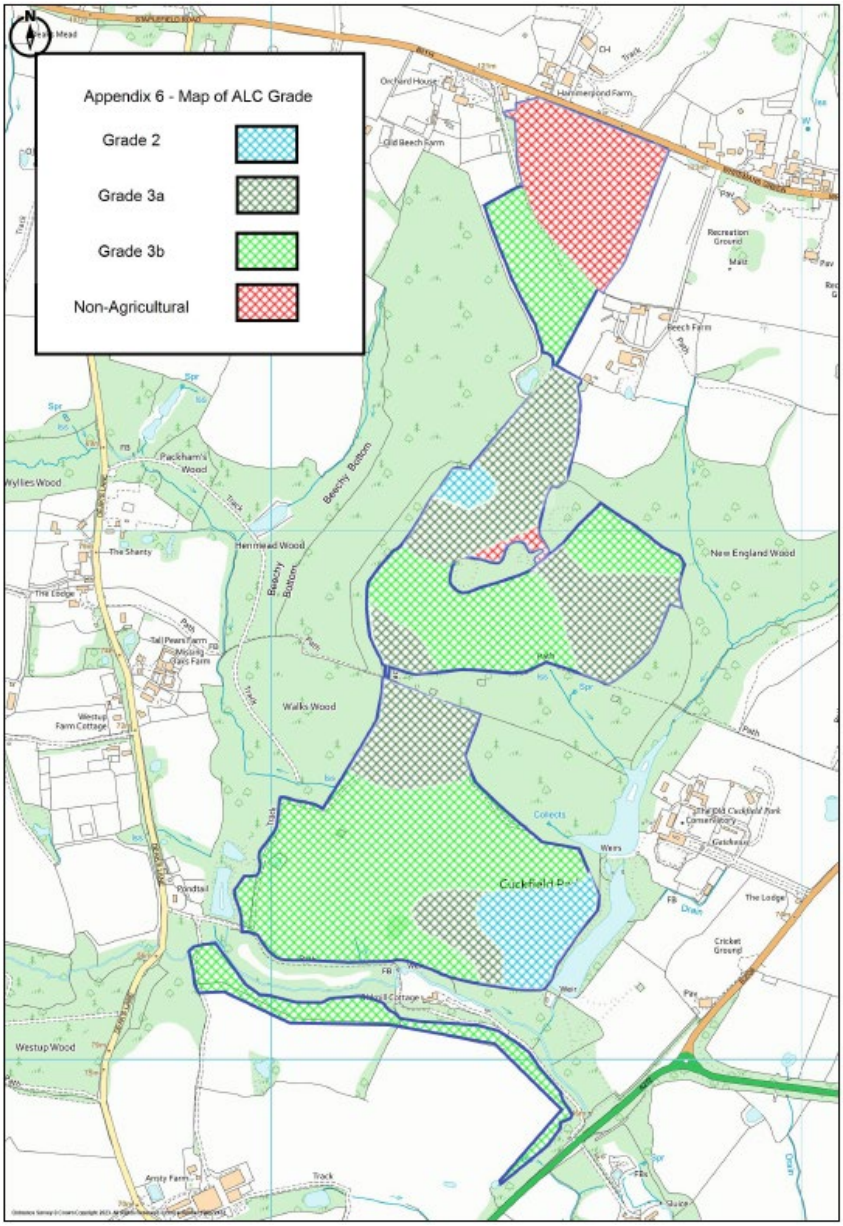
Table 10.5: Results of ALC, of Country Park Site

Grade	Description	Area (ha)	Proportion (%)
1	Excellent	0	0

Grade	Description	Area (ha)	Proportion (%)
2	Very good	3.6	3
3a	Good	14.5	14
3b	Moderate	14.5	14
N/A	Non-agricultural	6.5	7
W	Woodland	63.9	62
Total		**103.0**	**100**

10.5.16 The ALC of the open land part of the Parkland Reserve Site is shown on the extract from the ALC plan in **Figure 10.2**. The land is a mix mostly of Grades 3a and 3b, with some Grade 2. The Grade 2 and subgrade 3a is of high sensitivity, as set out in **Table 10.1**. The moderate quality of land is of medium sensitivity.

Figure 10.2: Extract from the ALC Plan of the Parkland Reserve Site



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Agricultural Land Quality of the Wider Area

10.5.17 In the 1970s, MAFF produced "provisional" ALC maps, for strategic planning purposes. These were based on limited surveys and are not reliable for individual sites; however, these maps show the Site, Parkland Reserve Site and most of the wider area as undifferentiated Grade 3. This is indicated in **Figure 10.3** below. Grade 4 is generally mapped along watercourses.

10.5.18 Recognising the limitations of the "provisional" maps from the 1970s, as described in Natural England's TIN049[17], Natural England has produced predictive "likelihood of best and most versatile" land quality maps. These estimate the proportion of land within an area that is of BMV quality. There are three categories: low (<20% area BMV), moderate (20-60% area BMV), and high (>60% area BMV). For this area, the map shows the Site, and most of the land in the area around Haywards Heath and Cuckfield, as falling into the moderate (20 – 60% area) likelihood of BMV category, as shown on **Figure 10.4**. **Figure 10.4** also shows the Parkland Reserve Site as falling into the low (< = 20% area) to moderate (20 – 60% area) likelihood of BMV category.

10.5.19 There is no detailed ALC data for the Site or the Parkland Reserve Site, but there is data available nearby as shown on **Figure 10.5** below, taken from www.magic.gov.uk[18]. An area of land immediately to the north of the Site has been surveyed in the past by MAFF, and found to comprise a mixture of Grades 1, 2, 3a, 3b and 4, as shown on **Figure 10.5.**

10.5.20 Therefore, within the wider area there is land of high and medium sensitivity, and there are areas of low sensitivity.

[17] Natural England, (2012); Natural England Technical Information Note TIN049 – Agricultural Land Classification: protecting the best and most versatile agricultural land.

[18] www.magic.gov.uk/Landscape/Landscape Classification/Post 1988 ALC

Figure 10.3: The Provisional ALC (Approximate Location of the Sites Indicated)

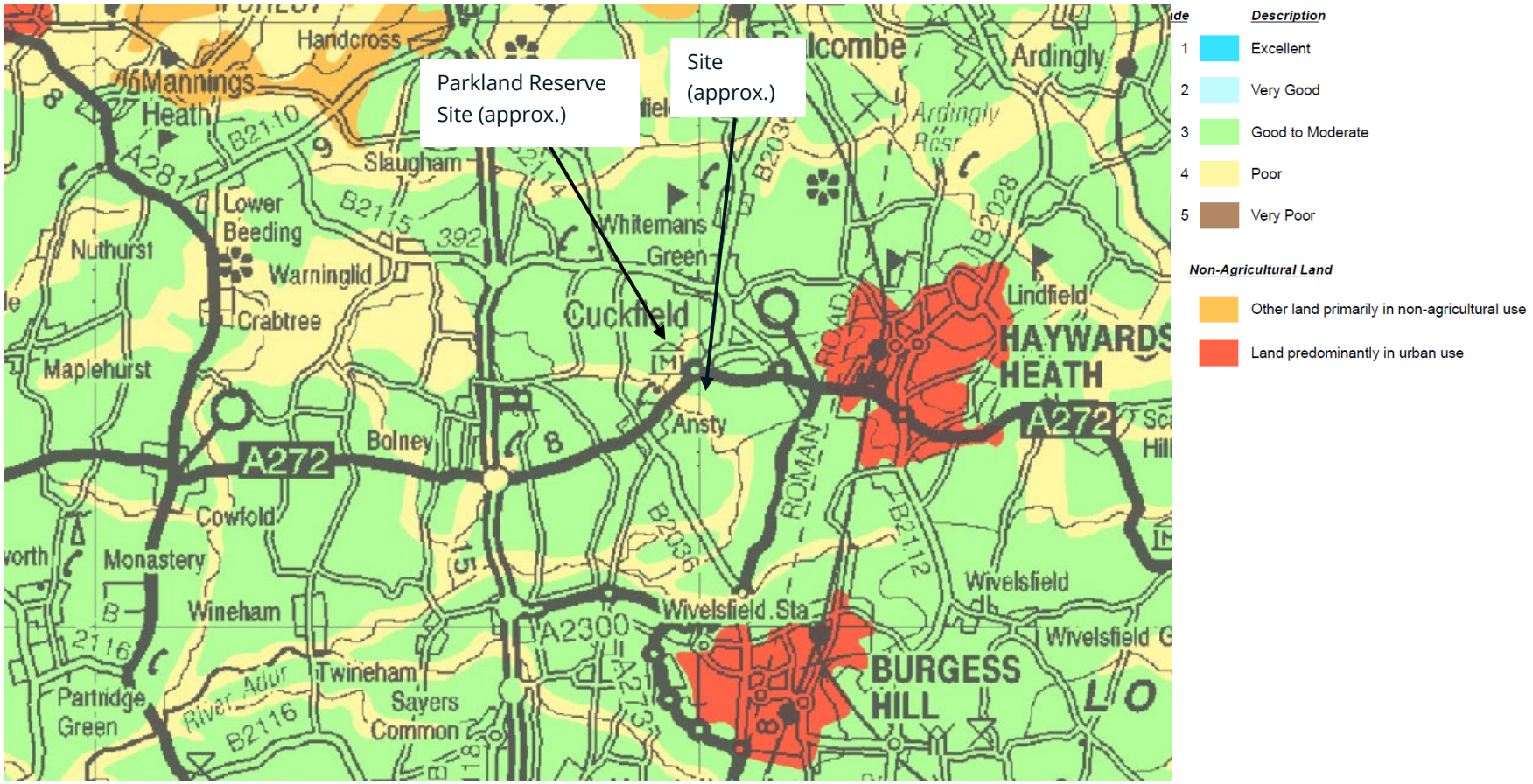

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Figure 10.4: Predictive BMV Land Assessment (Approximate Location of the Sites Indicated)

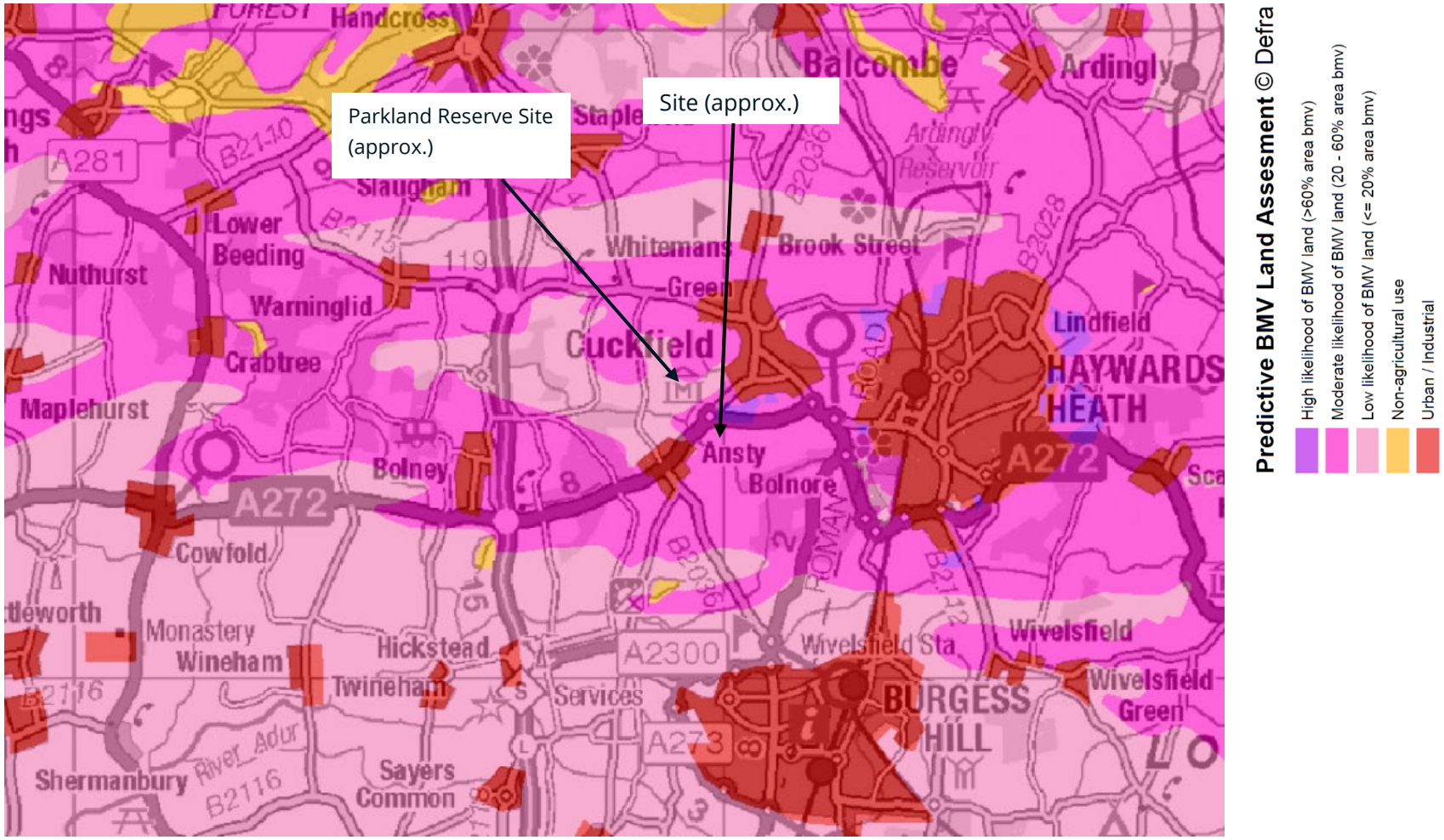

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Figure 10.5: Extract Available Detailed ALC

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Farming Circumstances

10.5.21 The farmland within the Site and the Parkland Reserve Site does not form a secure part of a farm business. It is let on short-term agreements to other farmers to farm. Full time farms are of medium sensitivity.

Future Baseline (the 'do nothing' scenario)

10.5.22 If the Proposed Development or Parkland Reserve Site were to not come forward, it is considered that the future baseline would not change from the existing baseline.

10.6 Identification and Description of Changes Likely to Generate Effect

10.6.1 The effects on agricultural resources are usually permanent and typically take place during the construction phase of a development, when the agricultural land is removed from agriculture and from active farming use. In this case, the change of use of the Parkland Reserve Site will also occur during the construction stage, but the operational effects on soil have also been considered.

10.6.2 The following effects have been considered:

- Temporary effects on any soils being moved for re-use (e.g. in landscaping, gardens etc.) within the Site and Parkland Reserve Site.
- Permanent loss of or damage to soils within the Site and Parkland Reserve Site.
- Permanent loss of function or sealing over of agricultural land within the Site and Parkland Reserve Site.
- Temporary or permanent impacts on farm businesses operating within the Site and Parkland Reserve Site.
- Temporary or permanent disruption to farming activities resulting in adjacent land being of reduced utility, e.g. effects of subsequent trespass.

10.7 Assessment of Likely Significant Effect

Construction Phase

Embedded Mitigation Measures

10.7.1 The Proposed Development of the Site includes built development, sports fields and open space. **Figure 10.6** provides an extract from the Land Use Parameter Plan.

10.7.2 There are only small and localised effects on soils and land quality anticipated within the Parkland Reserve Site. For that area, the potential to return to agricultural use is high and, therefore, these areas are generally considered to be capable of restoration.

Figure 10.6: Extract from the Land Use Parameter Plan

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Anticipated Effects

10.7.3 The open space provision within the Proposed Development (on the Site) is approximately 34 hectares in size. This includes the area of Subgrade 3a at the north-east corner of the Site, which is to be retained as open space. The Grade 1 land at the northern end is proposed for sports pitches.

10.7.4 Whilst the disturbance to soils and land quality in these areas may be limited, to ensure a conservative assessment, it is assumed that none of this land will be returned to agricultural use in the future. Accordingly, for the purposes of assessment, all of the Site is considered to be irreversibly developed. Therefore, the Proposed Development is considered to result in the permanent loss of agricultural land, which includes agricultural land of very high and high sensitivity.

10.7.5 The Parkland Reserve Site is not physically disturbed in the same way and is capable of reversion to agricultural use in the future, if required.

Agricultural Land Quality

10.7.6 In respect of agricultural land quality, the losses include BMV agricultural land from the Site, but no loss of BMV land from the Parkland Reserve Site.

10.7.7 Within the Site there is 13.2 ha of ALC Grades 1, 2 and 3a (refer to **Table 10.4**). Under the guidance, as set out in **Table 10.1** to **Table 10.3** above, this equates to a medium magnitude impact (between 5 and 20 ha, as per **Table 10.2**) on a resource of high sensitivity (**Table 10.1**), which equates to a **moderate adverse** impact. This is not considered significant in EIA terms and is below the threshold for consultation with Natural England.

10.7.8 The Parkland Reserve Site involves no significant disturbance to soils, or sealing over of agricultural land. The proposals do not involve significant disturbance to soils or loss of agricultural land, including land of BMV quality. Therefore, the magnitude of impact is assessed as negligible. Some of the land is of high sensitivity. Therefore, the significance of effect is **minor adverse**, which is not significant in EIA terms.

Soils

10.7.9 The soils across the Site are medium clay loams, with some heavy silty clay loams and some silty clays. Heavy clay loams and silty clays fall within the high sensitivity to structural damage category in the IEMA Guide, but cover less than 20 ha of the Site, which is therefore a medium magnitude of impact. The medium clay soils cover over 20 ha, which is a high magnitude effect on a medium sensitivity soil, which is a moderate significance effect. Therefore, the effect on the soils is of **moderate adverse** significance which is not considered significant in EIA terms.

10.7.10 The soils across the Parkland Reserve Site include medium and some heavy clay loam soils. Most of the soil is of medium sensitivity (**Table 10.1**). These soils are not

affected, however, so the magnitude of effect is negligible (**Table 10.2**). Therefore, the significance of effect is **negligible**, which is not significant in EIA terms.

Farming Circumstances

10.7.11 The land on both the Site and the Parkland Reserve Site is let to larger farming businesses to farm and does not form a long-term part of a farm business. The farming business is therefore of medium sensitivity, but the effect will not be a significant effect, and is of low magnitude. The overall impact is therefore of **minor adverse** significance, which is not significant in EIA terms.

10.7.12 There are no anticipated adverse effects on agricultural land without the Site and Parkland Reserve Site being available, therefore there will be a **negligible effect** on agriculture in the wider area, which is not significant in EIA terms.

Operational Phase

Embedded Mitigation Measures

10.7.13 The Site and the Parkland Reserve Site are bordered by hard boundaries (such as roads) or woodland. The Proposed Development is designed with open space around the outer edges. These will provide opportunities for recreational use, and will prevent the export of problems such as trespass onto surrounding land.

Anticipated Effects

10.7.14 The effects on agricultural land, soils and farming businesses are described at the construction phase. There will be no further physical moving of soils, so there should be no further adverse effects on agriculture and soils and farming circumstances within the Site and the Parkland Reserve Site during the operational phase of the Proposed Development.

10.7.15 With the embedded mitigation there should be no adverse effects, such as trespass, onto land surrounding both the Site and the Parkland Reserve Site. Therefore, whilst there will be farms of high or medium sensitivity in the wider area, the effects on them will be negligible, resulting in an effect of **negligible adverse** significance, which is not significant in EIA terms.

10.8 Scope for Additional Mitigation Measures

Potential Additional Mitigation Measures

10.8.1 Soils are in important resource. The Environment Agency estimates that UK soils currently store about 10 billion tonnes of carbon, equal to about 80 years of greenhouse gas emissions[19].

10.8.2 Due to the high clay fraction of some of the soils within the Site and Parkland Reserve Site, they are susceptible to being damaged if handled when conditions are not suitable. This can not only adversely affect the soil's properties, but it can also result in the need for considerable or expensive restoration within the Site and Parkland Reserve Site.

10.8.3 Additional mitigation of the Site should include a Soil Management Plan, which can be required and governed by condition, which will advise on the suitable handling of soils and will reference the Defra Construction Code of Practice for the Use of Soils on Construction Sites[20]. This will reduce the magnitude of effect on sensitive soils to low, and hence a **minor adverse** effect, which is not significant.

10.8.4 There is no significant soil disturbance proposed for the Parkland Reserve Site, so no Soil Management Plan will be required for that area.

Likely Effectiveness of Additional Mitigation Measures

10.8.5 A well-made and followed Soil Management Plan will be effective at mitigating the moderate or minor significance adverse effects from construction through mis-timed or misguided soil handling. This could reduce a moderate adverse effect to a **minor adverse** effect, but only for any soils which are being retained for reuse within the Site.

10.9 Residual Effects

Agricultural Land Quality

10.9.1 Following the implementation of additional mitigation measures, there will remain a **moderate adverse** (not significant) effect in terms of the loss of agricultural land of BMV quality, from the Proposed Development of the Site.

10.9.2 There will be **negligible** (not significant) effects on the agricultural land on Parkland Reserve Site.

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[19] Environment Agency, The State of the Environment: Soil (June 2019)

[20] Defra, Construction Code of Practice for the Use of Soils on Construction Sites (September 2009)

10.9.3 The BMV land forms small areas mixed with poorer quality land. The BMV land within the Site is generally not, in practical terms, capable of being farmed differently to poorer quality land in the rest of the field within which these areas have been identified.

10.9.4 Any assessment of the significance of losing agricultural land needs to be made in context. Across England, an estimated 42 % of all farmland is within Grades 1, 2 and 3a[21] (Natural England's TIN049), and amounts to 3.7 million hectares in active agricultural use.

10.9.5 To put the impact in context, the Utilised Agricultural Area of England is 8.9 million hectares. Based on Natural England's estimate, some 3.7 million hectares of agricultural land in active agricultural use is of BMV quality, of which about half (1.85 million ha) is Grades 1 and 2.

10.9.6 The Site is mostly poorer quality land, with only 13.4 % of the Site comprising BMV quality.

10.9.7 The "provisional" ALC map from the 1970s shows much of the Site and most of the wider area as undifferentiated Grade 3. This was shown in **Figure 10.3** above. Grade 4 is generally mapped along watercourses, including through the Site and the Parkland Reserve Site.

10.9.8 Therefore, it can be concluded that, in terms of land quality:

- The Site is generally poorer quality land, with 13.4 % of the Site being of BMV quality.
- The wider area is predicted to be mostly of 20 – 60 % area BMV (as shown in **Figure 10.3** and **Figure 10.4**).
- Poorer quality land is generally not available.

Soils

10.9.9 The soils across the Site will be disturbed at the construction phase. The soils across the Parkland Reserve Site will not be disturbed. The effects for soils which are to be retained within the Site can, through careful management and good practice secured via a Soil Management Plan, be reduced to a **minor adverse** significance impact, which is not significant in EIA terms. The effect on the Parkland Reserve Site will remain of **negligible adverse** significance.

[21] Natural England Technical Information Note 049 (2012)

Farming Circumstances

10.9.10 The effects on farm businesses on both the Site and Parkland Reserve Site take place at the construction phase and are permanent. The residual effect is **minor adverse** for both the Site and Parkland Reserve Site, which is not significant in EIA terms.

10.10 Cumulative Effects

10.10.1 Cumulative effects are the combined effects of several development schemes (in conjunction with the Proposed Development and the Parkland Reserve Site) which may, on an individual basis be insignificant but, cumulatively, have a significant effect.

10.10.2 The ES has given consideration to 'Cumulative 'Effects' for schemes located within a 5 km radius from the boundary of the Site and Parkland Reserve Site, as listed in **ES Volume 2, Chapter 3: EIA Methodology, Table 3.6**.

10.10.3 There is no direct connection between the Proposed Development and other committed developments, in terms of agricultural land, other than they are similar resources. Committed developments where planning consent has been granted for non-agricultural use are not, therefore, assessed further.

Agricultural Land Quality

10.10.4 Only cumulative scheme 4 (Hurst Farm – DM/22/2272) involves the loss of agricultural land. The Hurst Farm site includes 14.4 ha of Grade 2, 0.7 ha of Subgrade 3a and the rest is Subgrade 3b and 4. The Site involves the loss of 13.2 ha of Grades 1, 2 and 3a land, which is of high sensitivity. If added to the 15.1 ha of high sensitivity Grade 2 and 3a at Hurst Farm the total affected is 28.3 ha. Therefore, the cumulative amount of BMV land affected would be over 20 ha, and accordingly a high magnitude effect (**Table 2**) on a resource of high sensitivity (**Table 10.1**) leading to a cumulative **major adverse** effect, which is significant in EIA terms. There would be no potential measures available to mitigate this effect.

10.10.5 The Parkland Reserve Site does not involve the loss of any agricultural land. Therefore, the Parkland Reserve Site has a negligible magnitude effect on a resource of high sensitivity, which is a **negligible effect** and there is no cumulative impact. The cumulative impact is therefore not significant in EIA terms.

Soils

10.10.6 There is insufficient information available to assess the cumulative effect on soils.

Farming Businesses

10.10.7 The cumulative effect on the wider farming business is not anticipated to be any different from the effect of the Proposed Development and Parkland Reserve Site.

10.11 Summary and Conclusions

10.11.1 The soils of the Site are variable. Across the Site, which will be affected by the Proposed Development, the land is mostly moderate quality land but there are areas of good, very good and a small area of excellent quality land.

10.11.2 The soils across the Parkland Reserve Site will not be disturbed. The soils are also variable and a mix of ALC Grades 2, 3a and 3b has been identified.

10.11.3 The Proposed Development of the Site will adversely affect land of BMV quality.

10.11.4 The assessment of the effects on agricultural interests and assets are assessed as follows:

- **Agricultural land**: The Proposed Development of the Site involves the loss of 13.2 ha of BMV land. This land is in patches, and is not easily exploited. In EIA terms this is a medium magnitude of impact on a resource of high sensitivity, which is a moderate adverse effect, and is not significant in EIA terms. The majority of the Site is poorer quality agricultural land. The Parkland Reserve Site does not involve the loss of agricultural land. Overall, therefore, there is a moderate adverse effect on agricultural land, which is not significant in EIA terms.
- **Agricultural soils**: Some of the soils within the Site are heavy clays and are of high sensitivity to being damaged if handled when wet, but the magnitude of impact on those soils within the Site is medium, and the overall effect is moderate or minor adverse, which is not significant in EIA terms. There will be a negligible effect on the Parkland Reserve Site, which is not significant in EIA terms.
- **Farm businesses:** The land on both the Site and the Parkland Reserve Site is let on a short-term arrangement, and does not form a long-term part of any farm business. The magnitude of impact is moderate, and the overall impact is of minor adverse significance, which is not significant in EIA terms.

10.11.5 **Table 10.7** summarises the agricultural effects resulting from the Proposed Development.

Table 10.7: Summary of Residual Effects associated with the Proposed Development and Parkland Reserve Site

Receptor/ Affected Group	Value or Sensitivity (Significance) of Receptor	Activity or Impact	Embedded Design Mitigation	Magnitude/ Spatial Extent/ Duration/ Likelihood of Occurrence	Significance of effect	Additional Mitigation	Residual Magnitude of Impact	Significance of Residual effect
Construction								
Agricultural land of BMV quality	Medium	Removal from agricultural use	None	Medium National Permanent Likely	Moderate Adverse	None	Medium	Minor - Moderate Adverse
Soils	High, Medium	Damage to soil properties for reuse	None	Medium Local Temporary Likely	Moderate Adverse	Soil Management Plan	Medium	Negligible - Minor Adverse
Farm Businesses	Medium	Impact on businesses	None	Medium Local Permanent Likely	Minor Adverse	None	Medium	Negligible - Minor Adverse
Operation								
Effect on adjacent businesses	High or medium	Disturbance	Design for open space	Low Local Permanent Unlikely	Negligible Adverse	None	Negligible	Negligible
Cumulative Effects – Construction								
	High		None	Major		None	High	

Receptor/ Affected Group	Value or Sensitivity (Significance) of Receptor	Activity or Impact	Embedded Design Mitigation	Magnitude/ Spatial Extent/ Duration/ Likelihood of Occurrence	Significance of effect	Additional Mitigation	Residual Magnitude of Impact	Significance of Residual effect
Loss of BMV agricultural land		Removal from agricultural land		National Permanent Likely	Major Adverse			Major Adverse
Cumulative Effects - Operation								
Effect on adjacent businesses	High or medium	Disturbance	Design for open space	Low Local Permanent Unlikely	Negligible Adverse	None	Negligible	Negligible