



Agricultural Land Classification (ALC) Desk-Based Assessment

Mansfield District Agricultural Land

March 2026

Mansfield District Council

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Client: Mansfield District Council

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1. Scope & Objectives

The Services	Agricultural Land Classification (ALC) Desk-Based Assessment	
The Client	Mansfield District Council	
Appointment Details	The Services have been carried out in accordance with the revised Proposal dated 4 September 2025 and REL's Terms and Conditions of Engagement, (together " the Agreement ") as accepted by the Client on 5 August 2025	
Site Name	Mansfield District Council	
Information Sources (Where appropriate documents are contained in appendices with data extracts provided and summarised within pertinent sections of this report. List not exhaustive)	Online Source	Natural England Provisional Agricultural Land Classification Grade (pre-1988), accessed via Magic Web Mapping Service, DEFRA, 2024.
		Natural England Agricultural Land Classification Grades Post-1988 Surveys (Polygons) Database and Mapping, accessed via Magic Web Mapping Service, DEFRA, 2024.
		Natural England Likelihood of 'Best and Most Versatile' (BMV) Agricultural Land Database and Mapping – Yorkshire and Humber Region (ALC015), DEFRA, 2017.
		British Geological Survey (BGS) Database and Mapping.
		BGS Geoindex Web Mapping Service.
		BGS 1: 50,000 scale Provisional Series, Geological Map, England and Wales, available on the BGS Geoindex
		Google Historic Satellite Imagery.
		National Library of Scotland Historical Ordnance Survey England and Wales, 1830-1990 Maps.
	Documentation Source	Soil Classification for Soil Survey, Monographs on Soil Survey, Butler, B E (1980), Clarendon Press, Oxford.
		Hodgson, J.M (ed.) (2022). <i>Soil Survey Field Handbook</i> . Soil Survey Technical Monograph No. 5, Cranfield.
		Meteorological Office (Met Office), 1989, Climatological Data for Agricultural Land Classification – Grid point Datasets of Climatic Variables, at 5km intervals, for England and Wales.
		MAFF, 1988, Agricultural Land Classification of England and Wales – Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.
		Natural England, Technical Information Note TIN049 Second Edition, 2012.
	Previous Reports	Soils and their use in Eastern England, 1984, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map.
		A number of Post-1988 ALC surveys has been available for review. A summary of relevant information is presented within Section 7 .

2. Area Details

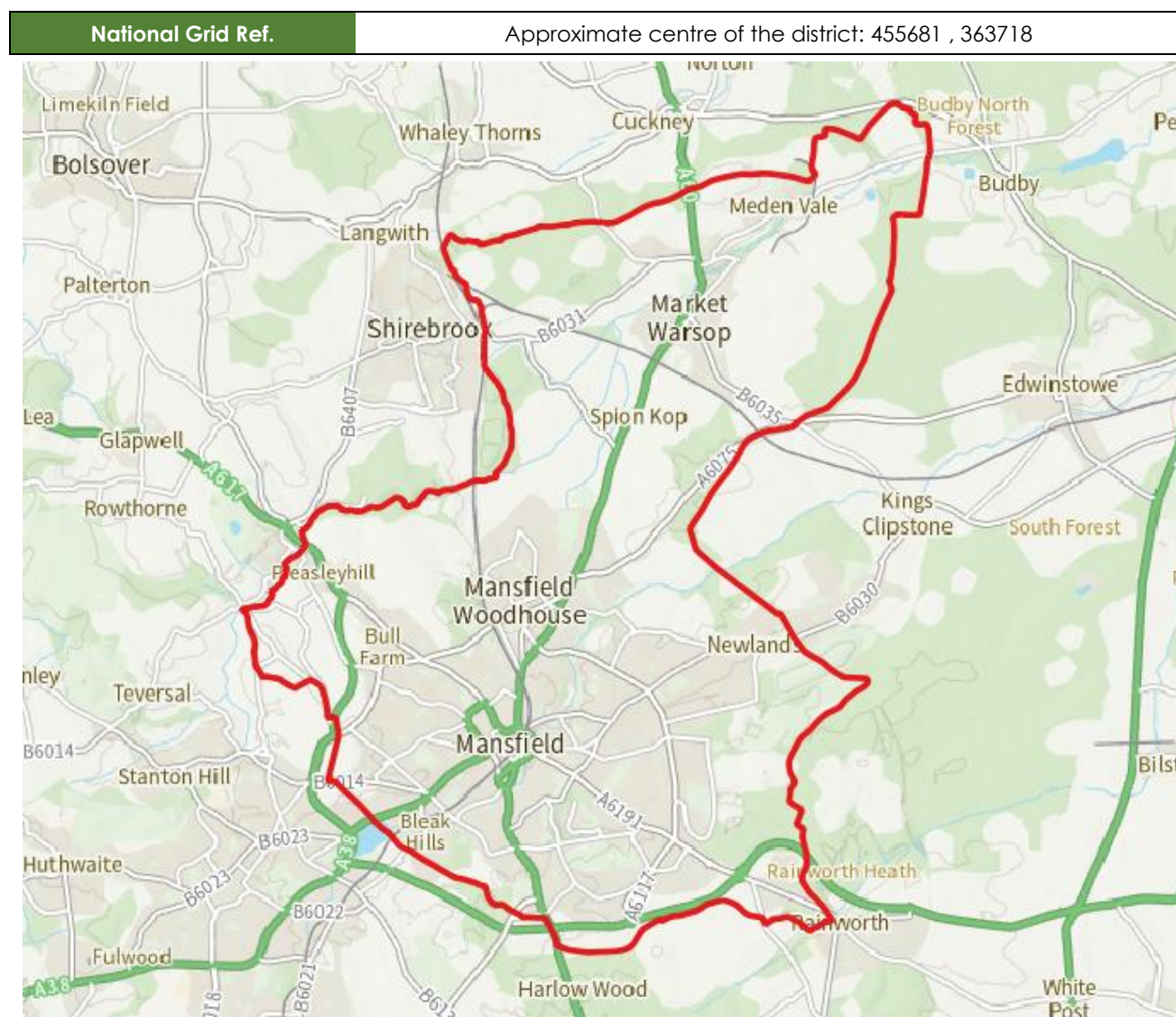


Figure 1: Mansfield district Council boundaries (Highlighted in red)

Document Purpose

An initial desk-based study has been undertaken to provide a reconnaissance of the general characteristics for the Mansfield district, including soil type(s) and Agricultural Land Classification, using published data sources. This assessment has been made using available indicative soils and geology data to provide a predictive ALC grade for the district.

Where available, Post-1988 ALC Surveys (undertaken at varying scales and levels of detail, ranging from 1:5,000 to 1:50,000 scale) have been consulted. Surveys included on this map provide the most detailed and up to date ALC grading following surveys between 1989 and 1999 by MAFF (now part of DEFRA).

Climatological data provided by the Met Office has been used to determine the overriding agroclimatic site limitations (if any), using interpolated values based on the central point of the site.

Publicly available Flood Risk mapping data, produced by the Environment Agency, has been reviewed as part of the assessment. No site-specific Flood Risk Assessment has been provided to inform this assessment.

A review of publicly available historic maps and Google Earth imagery has been undertaken to assess if significant Made Ground deposits may be anticipated as part of the assessment.

3. Methodology

Agricultural Land Classification Survey Guidance

Ministry of Agricultural, Food and Fisheries (MAFF), *Agricultural Land Classification of England and Wales – Revised October 1988*

The Agricultural Land Classification (ALC) 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 limitations can operate in one or more of four principal ways: they may affect the range of crops which can be grown; the level of yield; the consistency of yield and the cost of obtaining it. The classification system gives considerable weight to flexibility of cropping, whether actual or potential, but the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.

ALC grading is determined using the MAFF 'Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land, October 1988'. The above factors form the basis for classifying agricultural land into one of five grades (with Grade 3 land divided into Subgrades 3a and 3b since the guidelines were revised in 1988), ranked from Excellent (Grade 1) to Very Poor (Grade 5) (see **Table 1**).

Table 1: Definition of Agricultural Land Classification Grades

ALC Grade	Description
Grade 1	Excellent Quality Agricultural Land 'Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality'.
Grade 2	Very Good Quality Agricultural Land 'Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1'.
Subgrade 3a (pre-1988 Grade 3)	Good Quality Agricultural Land 'Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops'.
Subgrade 3b (pre-1988 Grade 3)	Moderate Quality Agricultural Land 'Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year'.

Grade 4	Poor Quality Agricultural Land 'Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land'
Grade 5	Very Poor Quality Agricultural Land 'Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops'.

Best and Most Versatile (BMV) Agricultural Land

The National Planning Policy Framework (NPPF, Department for Levelling Up, Housing and Communities, December 2024) is followed in the UK. The NPPF sets out national planning practice guidance with reference to agricultural land, which regulators need to consider when making planning decisions about applications involving agricultural land.

The NPPF Annex 2 – Glossary defines Best and Most Versatile (BMV) agricultural land as '*Land in grades 1, 2 and 3a of the Agricultural Land Classification*'. BMV land is provided a degree of protection against development within planning policy, with most Local Plans including specific policies which refer to the protection of BMV agricultural land.

Non-BMV agricultural land, i.e. Moderate, Poor and Very Poor-quality agricultural land is designated subgrade 3b or Grades 4 and 5 respectively and is restricted to a narrower range of agricultural uses. Limited to no protection is provided against development on this grade land within planning policy.

4. Climate Data

Using the climatological data set (Met Office, 1989) the following information (**Table 2**) has been calculated for the district. Calculations comprised altitude adjustment and interpolation, using the formula presented within the data set.

Table 2: Summary of Average Agroclimatic Data for the District

(Approximate Centre Grid Reference: 455681, 363718)		
Average Annual Rainfall (mm)	AAR	674.55
Accumulated Temperature (°C)	ATO	1345.94
Field Capacity Duration (Days)	FCD	148.14
Moisture Deficit Wheat (mm)	MDWHT	100.73
Moisture Deficit Potatoes (mm)	MDPOT	89.85

The district is identified to have an average FCD, AAR, and ATO when compared to the mapped values for Mansfield (Soils and their Use in Eastern England, 1984).

Using the AAR and ATO values within **Table 2**, the site is considered to be Grade 1 according to climate (Figure 1 of the MAFF guidance document). Therefore, climate is considered to not be a limiting factor in the region. However, it should be noted that this is based upon an average dataset, results may vary on smaller scale sites.

5. British Geological Survey and Soils Published Data

Geology

Information gathered from the British Geological survey (BGS) database suggests that the district has small, localised areas of Artificial/Made Ground, largely based around urbanised areas with multiple sites infilled from previous quarrying.

The district is largely free from superficial deposits, with small, localised areas underlain by deposits of Mid Pleistocene Till and Glaciofluvial Deposits comprising sand and gravel, as well as deposits of Alluvium comprising clay, silt, sand and gravel (**Figure 2**).

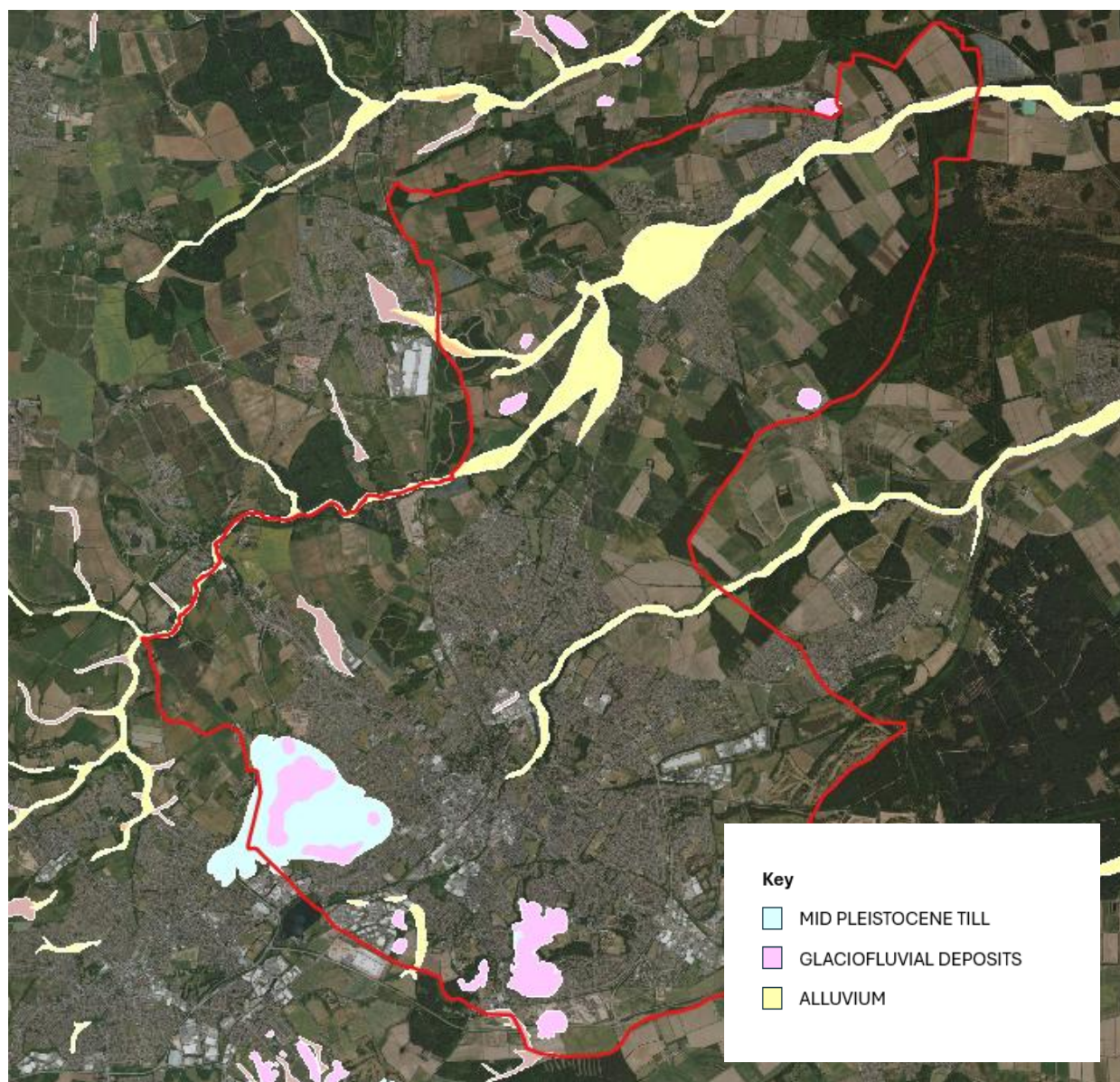


Figure 2: Superficial Deposit Mapping for the District and Surrounding Area (District Boundary shown in red)

The bedrock geology is indicated as the Chester Formation comprising Sandstone in the east of the District, and the Cadeby Formation comprising dolostone in the west of the district. The Centre of the district comprises the Lenton Sandstone Formation and areas of the Edlington Formation comprising Mudstone and sandstone (**Figure 3**).

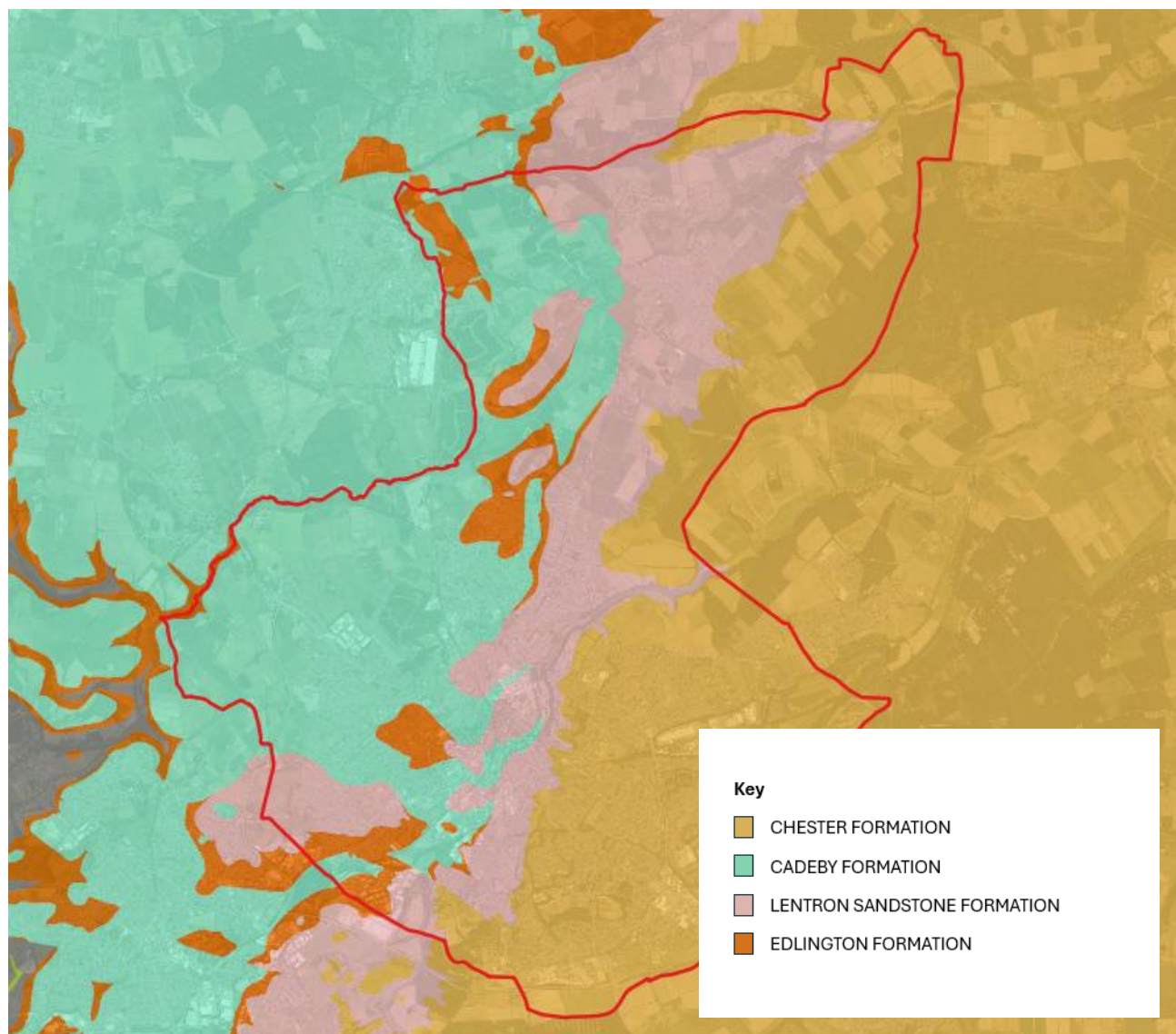


Figure 3: Bedrock Geology Mapping for the District and Surrounding Area (District Boundary indicated in red)

Published Soils Data

Soils mapping for the area as shown on *Soils and their use in Northern England*, 1984, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map has been reviewed as part of this assessment. The location of the site is shown in the soils mapping extract below in **Figure 4**.

The soils mapping suggests the soils across the district comprise:

- **Aberford Association (511a):** Shallow, locally brashy well drained calcareous fine loamy soils over limestone. Some deeper calcareous soils in colluvium.
- **Bearstead 2 Association (541b):** Deep permeable sandy and coarse loamy soils. Groundwater controlled by ditches.
- **Blackwood Association (821b):** Deep permeable sandy and coarse loamy soils. Groundwater controlled by ditches.
- **Brockhurst 2 Association (711c):** Slowly permeable seasonally waterlogged reddish fine loamy over clayey and clayey soils. Some reddish clayey alluvial soils affected by groundwater.
- **Cuckney Association (551b):** Well drained sandy and coarse loamy soils, often over soft sandstone. Risk of wind erosion
- **Delamere Association (631b):** Well drained sandy soils commonly with a bleached subsurface horizon over sandstone. Occasional deeper soils. Very acid where uncultivated.

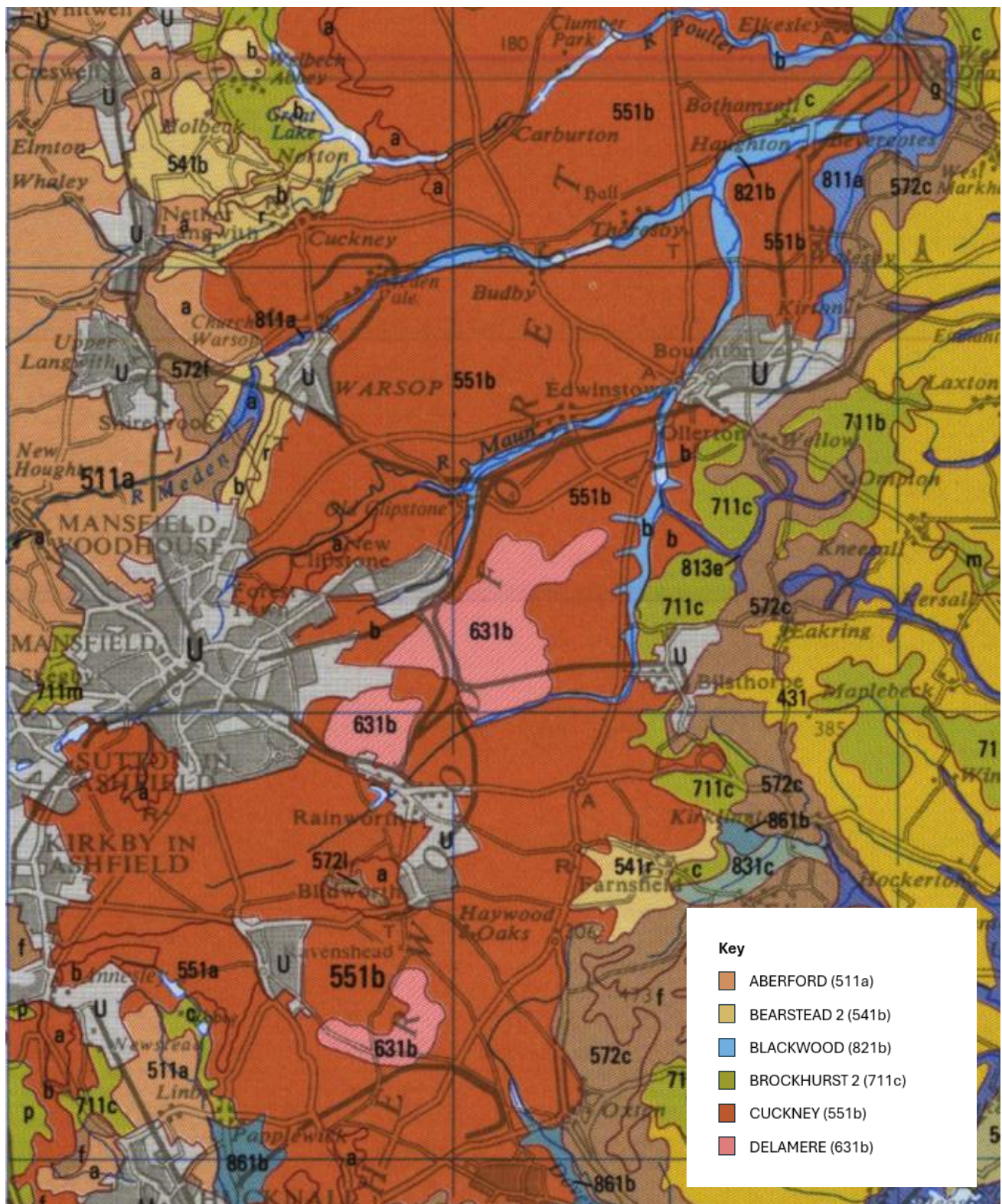


Figure 4: Soils Mapping for the District and Surrounding Area

6. Flood Risk Limitations

The potential limitations due to flood risk on the site have been assessed using publicly available flood risk mapping. Since the ALC guidance document was published in 1988, the Environment Agency (EA) has updated the way the risk of flooding is assessed. Therefore, the terms used in the 1988 guidance (Table 2, MAFF ALC Guidance 1988) have been paired to the current EA flood risk classifications below.

Table 3: Summary of Flood Risk for the Site in Accordance with MAFF Guidance

EA Flood Classification	MAFF Flood Classifications
Zone 3a High Probability	Frequent
Zone 3b Functional Floodplain	Frequent
Zone 2 Medium Probability	Occasional
Zone 1 Low Probability	Rare to Very Rare

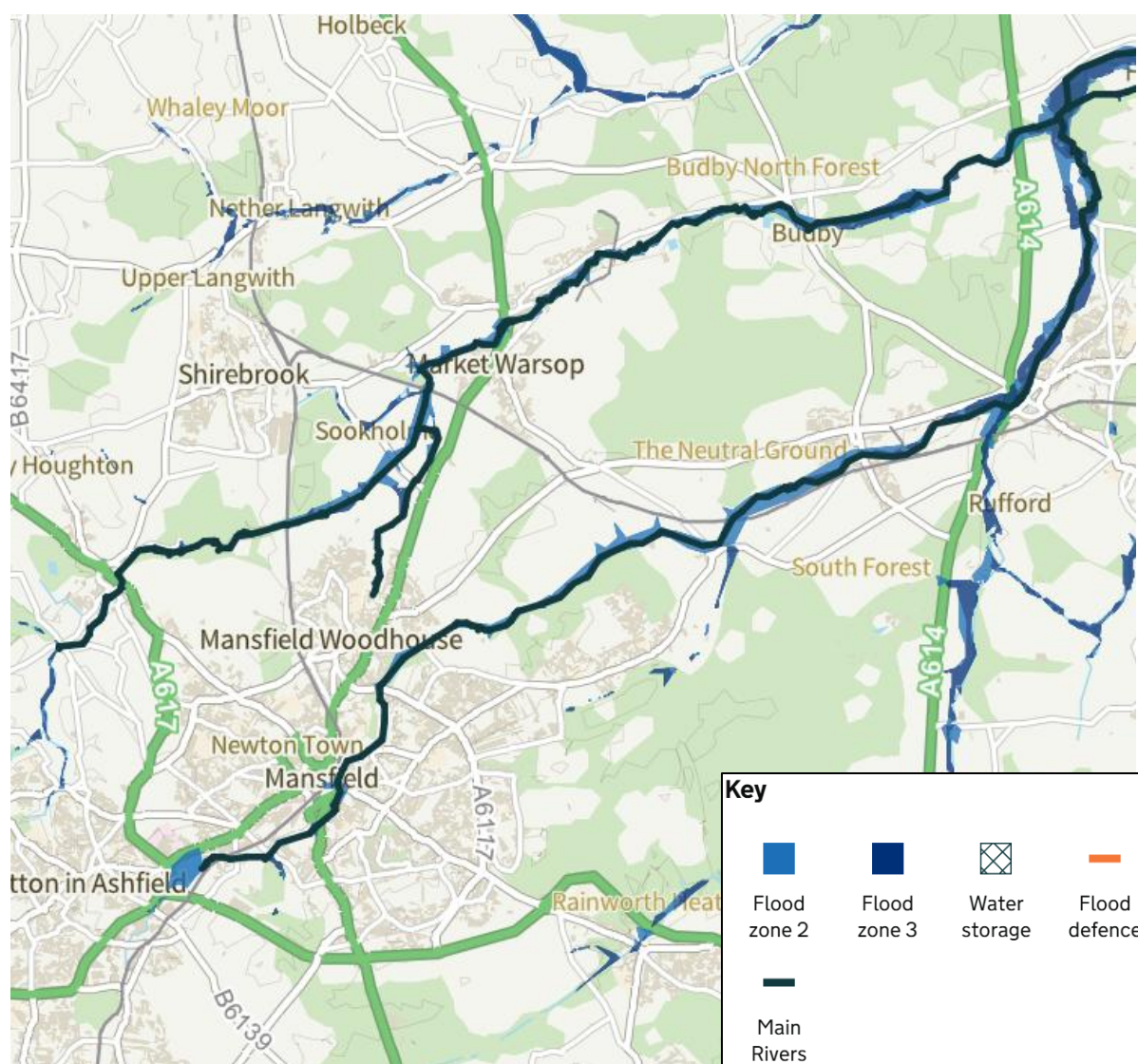


Figure 5: Flood Risk Present from Rivers and the Sea for the Site

The interactive EA Flood Map for Planning on the UK Government website identifies the majority of the district to be within a Flood Zone 1 (Low Probability) area with some discrete areas of Flood Zone 2 and 3 present surrounding main rivers (River Maun & River Meden) (**Figure 5**).

The impact of flood risk is assessed to confirm if it can pose a limitation to the ALC grade of the site, in accordance with the guidance available (MAFF, 1988), see **Table 4** below.

Table 4: Summary of Flood Risk from Environment Agency Data

ALC Grade	Frequency and Duration
1	Rare (short)
2	Rare (medium)
	Occasional (short)
3a	Rare (long)
	Occasional (medium)
	Frequent (short)
3b	Occasional (long)
	Frequent (medium)
4	Frequent (long)

The mapping identifies minimal risk of flooding from rivers and the sea within the boundary of the district and a Very Low risk of surface water flooding. As such, it is concluded that there is not considered to be any flood risk on agricultural land such to reduce the capability for agriculture. Therefore, it is unlikely that any ALC Grade will be reduced as a result of potential Flood Risk.

7. Available ALC Data

Pre-1988 ALC Grade

ALC Grade	Area (Ha)	Percentage
Grade 1	0.0	0.0%
Grade 2	1183.2	15.4%
Subgrade 3	3305.9	43.1%
Grade 4	0.0	0.0%
Grade 5	0.0	0.0%
Non-Agricultural	925.7	12.0%
Urban	2253.2	29.5%
Total Area	7668	100%

Post-1988 ALC Grade

Several post-1988 surveys have been undertaken in the district area showing a mix of ALC grades 2, 3a and 3b (**Figure 6**)

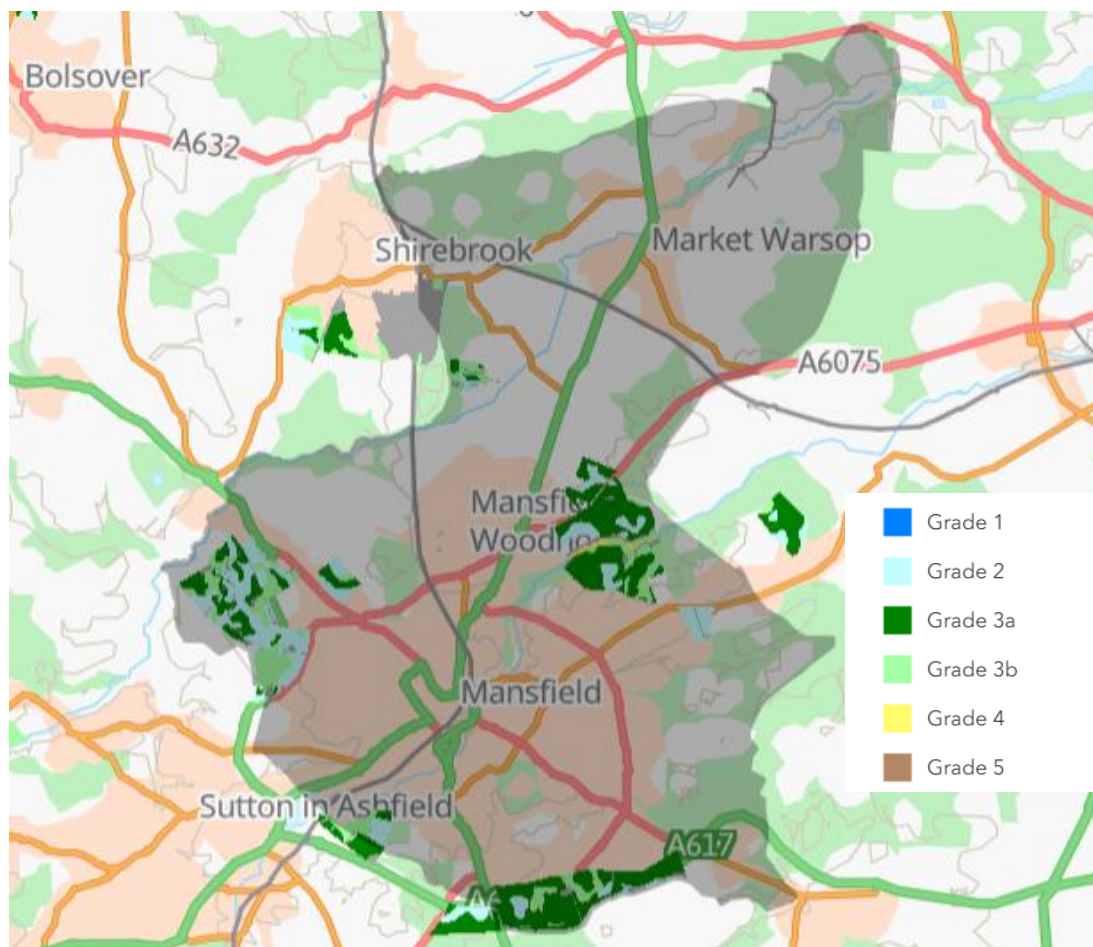


Figure 6: Available Post-1988 ALC mapping. Site area indicated in grey.

Predictive BMV Map

The Natural England predictive BMV land map would indicate the north of the district falls within the High (>60% area BMV) category with the east and south sections in the Moderate likelihood of BMV land (20-60% area BMV) (**Figure 7**).

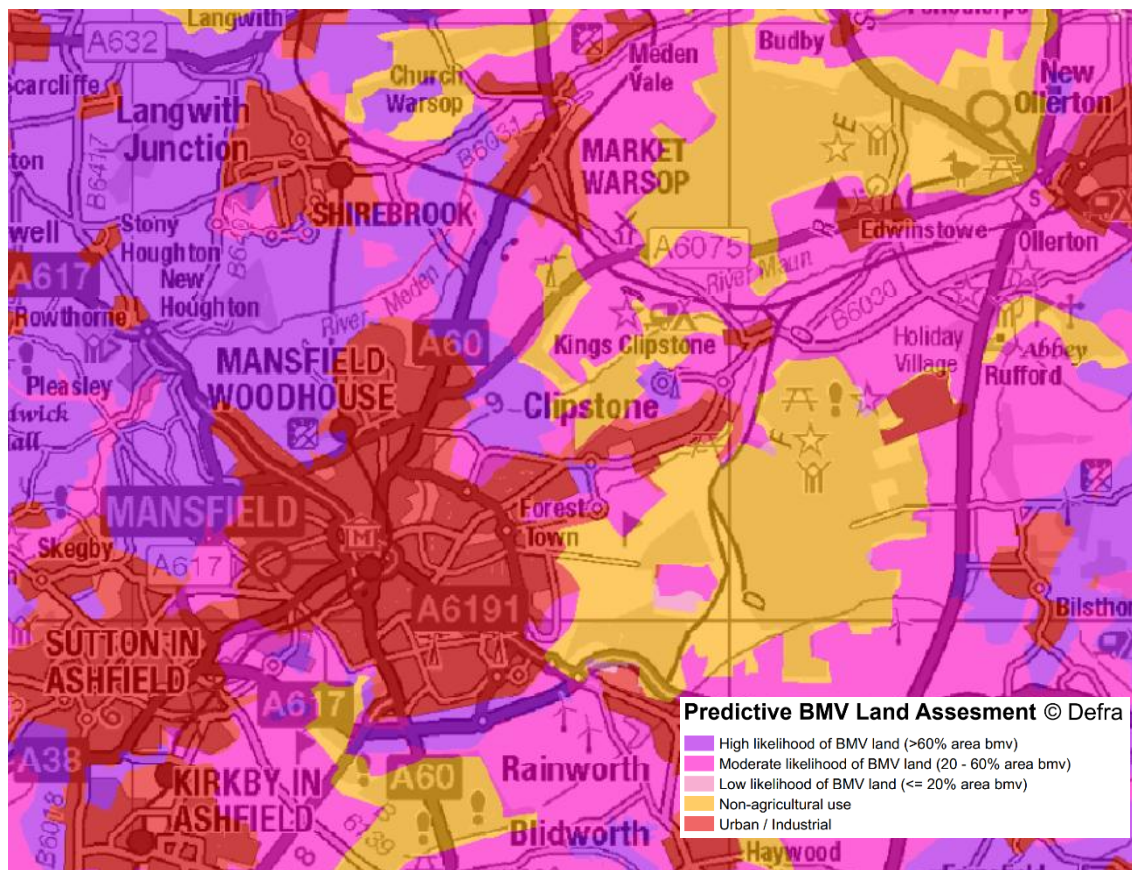


Figure 7: Predictive BMV Land Map Extract

8. Published Soil Descriptions

A generalised profile of the anticipated Soil Types, based on available published mapping is described as below (**Table 5**).

Table 5: Generalised Soil Profiles within the district area

	Depth (cm)	Texture	Colour	Stones (%)	Mottles	Structure	Wetness Class
Aberford	0-25	Clay Loam (calcareous)	Dark Brown	15-35	*	NP	I
	25-55	Clay Loam (calcareous)	Brown	15-35	*	Weak Coarse Subangular Blocky	
	At 55	Rock (Limestone)	NA	100	*	NA	
Bearsted	0-25	Sandy Clay Loam	Dark Brown	5	*	NP	I
	25-45	Sandy Loam	Brown	5	*	Fine Subangular Blocky	
	45-70	Sandy Loam	Brownish Yellow	5-10	*	Coarse Subangular Blocky	
	70-100	Loamy Sand/Sand	Pale Yellow	0	*	Single Grain	
Blackwood	0-20	Loamy Sand	Dark Greyish Brown	0	*	NP	III
	20-35	Loamy Sand	Pale Brown	5	Mottled	Coarse Subangular Blocky	
	35-90	Loamy Sand	Light Brownish Grey	5	Mottled	Medium Subangular Blocky	
	90-100	Sand	Greyish Brown	0	Mottled	Single Grain	
Brockhurst 2	0-20	Clay Loam	Dark Brown	5	NP	NP	IV
	20-40	Clay Loam	Brown	15	Mottled	Moderate Medium Subangular Blocky	
	40-75	Clay	Reddish Brown	0	Mottled	Strong Coarse Prismatic	

	75-100	Clay or Silty Clay	Reddish Brown	0	Mottled	Moderate Coarse Angular Blocky	
	100	Rock (Mudstone)	NA	100	NA	NA	
Cuckney	0-30	Loamy Sand	Dark Brown	0	*	NP	I
	30-70	Loamy Sand	Brown	0	*	Single Grain	
	70-90	Sand	Brown	5	*	Single Grain	
	90-100	Sandstone		100	*	NA	
Delamere	0-15	Loamy Sand	Dark Reddish Brown	0	*	Granular	I
	15-20	Sand	Reddish Grey	0	*	Single Grain	
	20-25	Loamy Sand	Dark Reddish Brown	0	*	Single Grain	
	25-35	Sand	Yellowish Red	0	*	Single Grain	
	35-60	Sand	Reddish Brown	0	*	Single Grain	
	60	Sandstone		100	*	NA	

Notes: NP – Not Provided, NA – Not Applicable

9. Indicative ALC Grade and Conclusions

Using the MAFF 1988 guidance, the following ALC Grades have been calculated (see **Appendix 1** for calculations):

Aberford Series

The combination of the soil textures, climate and the shallow depth to rock results in ALC Grade 3b with a limitation of Droughtiness for Wheat.

Bearsted Series

The combination of the Wetness Class (I), topsoil texture (Sandy Clay Loam – SCL), and the number of Field Capacity Days (148.14) results in an ALC Grade 1.

Blackwood Series

The combination of the Wetness Class (III), topsoil texture (Loamy Sand – LS), and the number of Field Capacity Days (148.14) results in an ALC Grade of 2.

Brockhurst 2 Series

The combination of the Wetness Class (III), topsoil texture (Medium Clay Loam – MCL / Heavy Clay Loam – HCL), and the number of Field Capacity Days (148.14) results in an ALC Grade of 3a (MCL topsoil) or 3b (HCL topsoil) dependent upon the texture.

In addition, should the topsoil be calcareous, this would also result in an increase to the ALC Grade to either ALC Grade 2 (MCL topsoil) or 3a (HCL topsoil) dependent on the texture.

Cuckney Series

The combination of the Wetness Class (I), topsoil texture (Loamy Sand LS), and the number of Field Capacity Days (148.14) results in an ALC Grade of 1.

The combination of the soil textures, climate and the shallow depth to rock results in ALC Grade 2 with a limitation of Droughtiness for Wheat.

Delamere Series

The combination of the Wetness Class (I), topsoil texture (Loamy Sand LS), and the number of Field Capacity Days (148.14) results in an ALC Grade of 1.

The combination of the soil textures, climate and the shallow depth to rock results in ALC Grade 3b with a limitation of Droughtiness for Wheat and Potatoes.

Conclusions

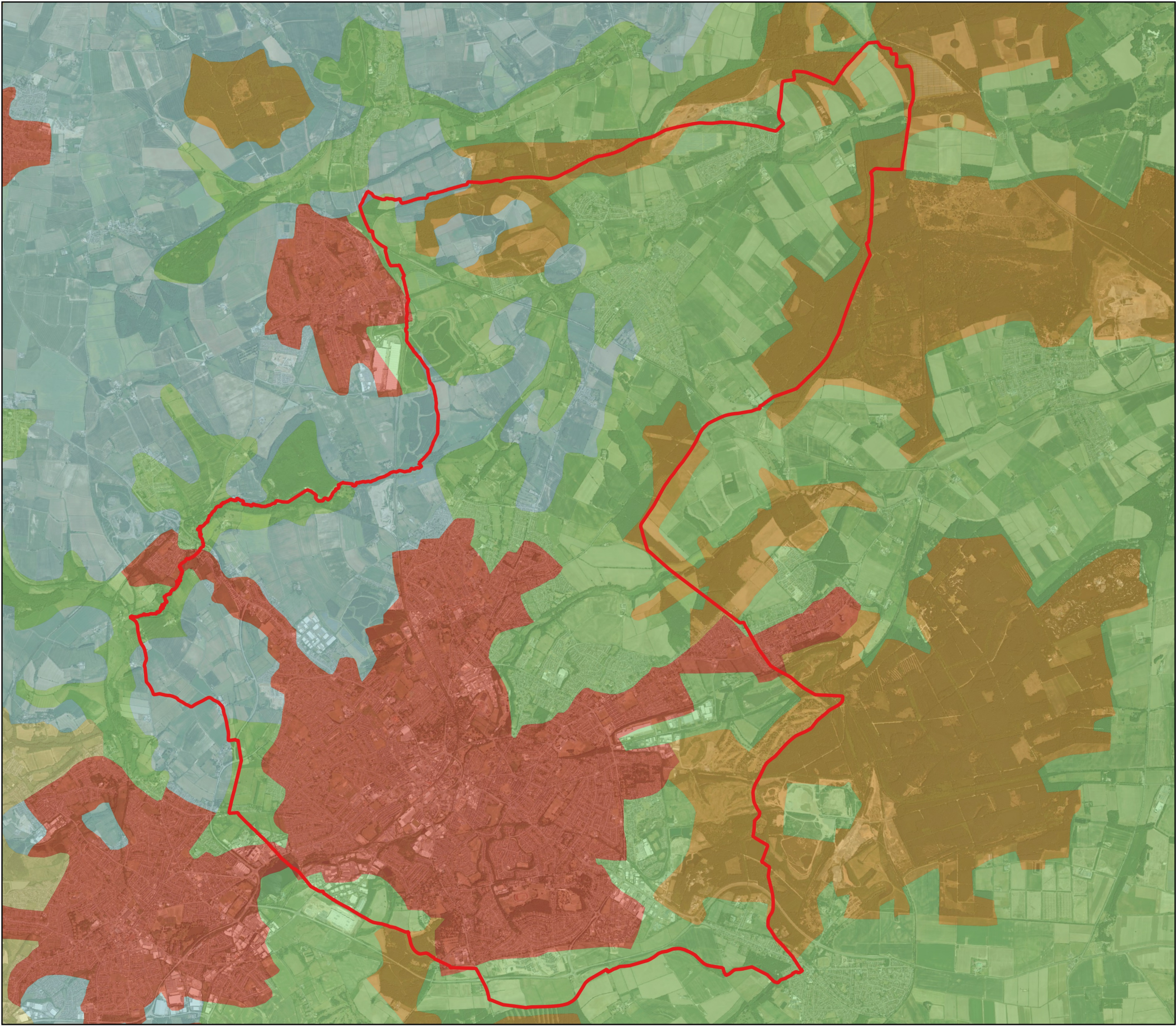
Based on the available information, the desk-based assessment for the Mansfield would indicate a mix of ALC grades ranging from 1 to 3b, with limitations to cultivation of Soil Wetness, Droughtiness and shallow rock.

Variations in ALC grade outcomes will come primarily from actual soil depths present on site which will affect the calculation outcomes of Wetness Class, and Droughtiness calculations.

For areas of the Delamere and Aberford Soils, ALC is likely to be limited by soil depth, with the resultant grade being dependant on the depth at which bedrock is found.

APPENDIX 1

ALC PROVISIONAL GRADE PLAN



Legend

Agricultural_Land_Classification_Provisional_England c

- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Non Agricultural
- Urban

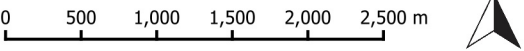


Figure
Provisional ALC mapping MDC

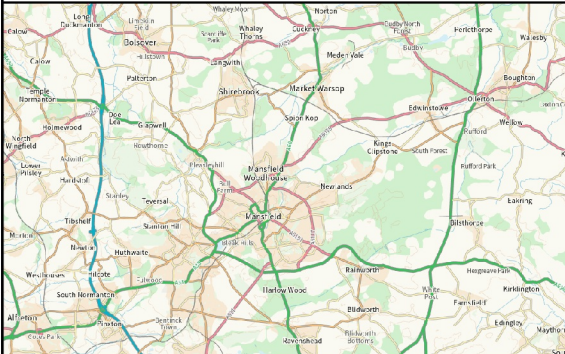
Job
Mansfield District Desk study

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Figure No.	Revision	Date
1	1	03 October 2025

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