8.0 Agricultural land quality around Groby

SURVEY RESULTS

8.1. The agricultural quality of the land is determinedby wetness. Land of grade 3 agricultural quality has been identified: see Map 8 at the end of this Section for their distribution.

Subgrade 3a

8.2. This land grade is found in a small area to the south-west of the village. The moderately high clay content of the topsoil in combination with the impeded drainage of the lower subsoil restricts machineryaccess to land in winter and early spring in an average year.

Subgrade 3b

8.3. Land alongside the M1 was found to comprise heavy clay loams over dense clay at a shallow depth resulting in subgrade 3b land limited by wetness.The poor drainage and high topsoil clay content of the soils combine to restrict machinery accessin spring, constraining arable land use to mainly autumn-sown crops.

ESTIMATED LAND GRADES

Estimated Subgrade 3a

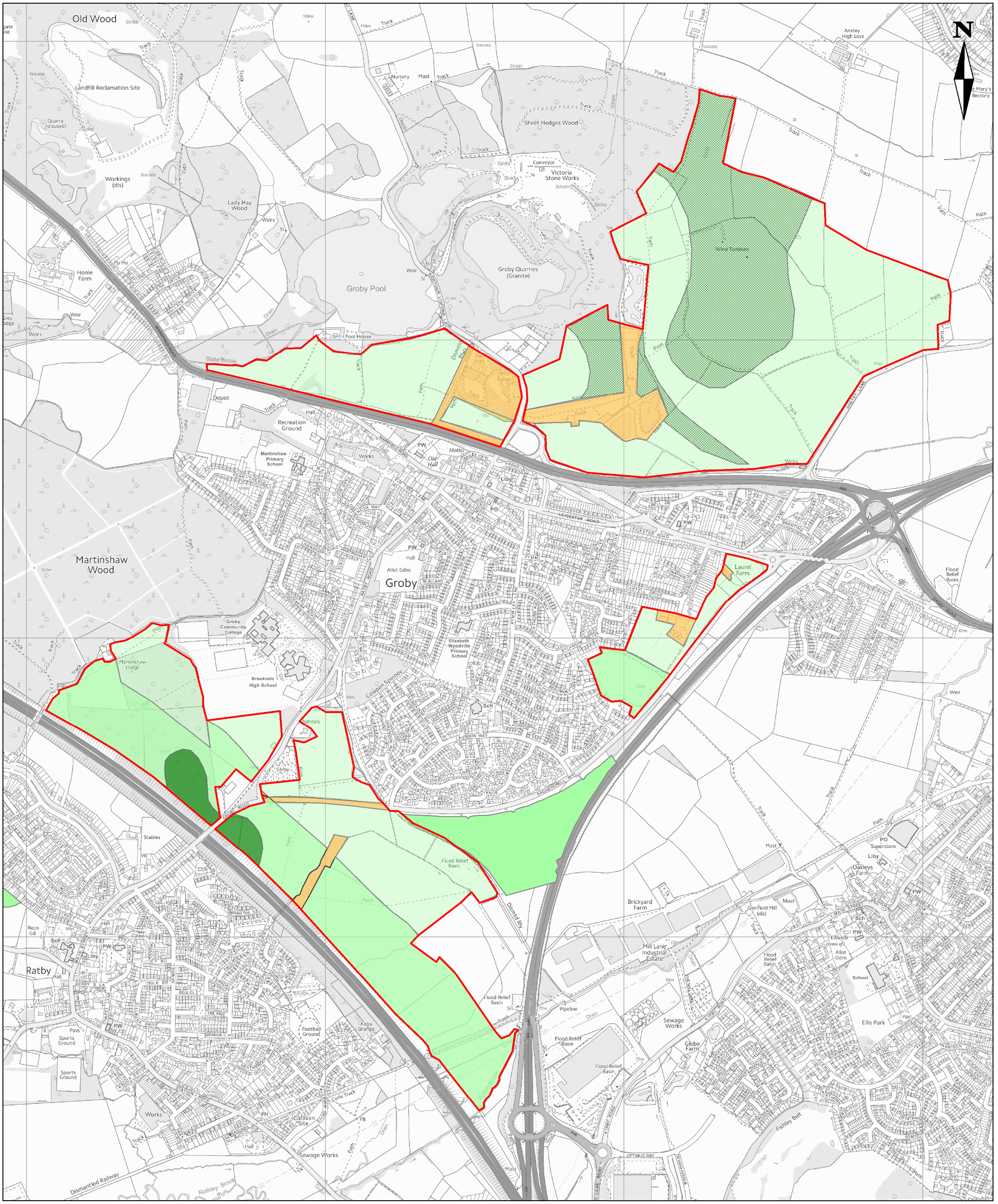
8.4. This land grade is mapped where Oadby till deposits are recorded. These deposits overlie the mudstone geology and typically form deep medium and fine loamy soils over clay that provide higher quality land.

Estimated Subgrade 3b

8.5. This land grade is predicted in areas where land is formed in the mudstone geology or in alluvium. This is likely to provide heavy slowly permeable soils with significant wetness limitations to agriculture.

Table 7: Areas occupied by the different land grades surrounding Groby

Grade/subgrade	***Area (ha)***		***% of the land***	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	0	0	0	0
Subgrade 3a	3.9	38.7	9	21
BMV land total	**3.9**	**38.7**	**9**	**21**
Subgrade 3b	39.9	146.0	91	79
Total land area	**43.8**	**184.7**	**100**	**100**



Client: Hinckley & Bosworth Borough Council

Site: **Hinckley and Bosworth District**

Map title: **Map 8**
Groby
Agricultural Land Classification

KEY

- Subgrade 3a
- Estimated subgrade 3a
- Subgrade 3b
- Estimated subgrade 3b
- Non agricultural
- Survey area

1454

Scale: 1:7,500

Date: 11/3/2019

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
Tel: 01509 670570

SURVEY RESULTS

9.1. The agricultural quality of the land is determined by wetness or droughtiness. Land of grades 2 and 3 has been identified: see Map 9 at the end of this Section for their distribution.

Grade 2

9.2. Land of this agricultural quality is mainly found in the east of the site. Where the land has sandy clay loam soils, their moderate clay content causes slight wetness constraints which restrictsaccess with machinery for the cultivation/harvesting of winter crops in wetyears.

9.3. Landwith sandy loam or loamy sand subsoils also forms grade 2 land. The moderately high sand content of the subsoils means they have a limited moisture storage capacity that will lead to slightly reduced crop yields in dry years under the local climate.

Subgrade 3a

9.4. Land of this quality is mainly found where sandy clay loams overlie slowly permeable clay at depth (around 50 cm). The moderate clay content of the topsoil in combination with the impeded drainage of the lower subsoil restricts access of machinery to land in spring during wet years.

Subgrade 3b

9.5. Land of subgrade 3b agricultural quality is mainly found in thecentre and south of the area, where heavy slowly permeable soils are present. The combination of high clay content topsoil and impeded drainage means access with farm machinery is restricted, with spring cropping rarely possible and arable use mainly limited to autumn sowings.

ESTIMATED LAND GRADES

Estimated Grade 2

9.6. A small area of grade 2 is predicted in the south of the area, where the recorded sand and gravel deposits are likely to give freely-draining soils with slight droughtiness limitations.

Estimated Subgrade 3a

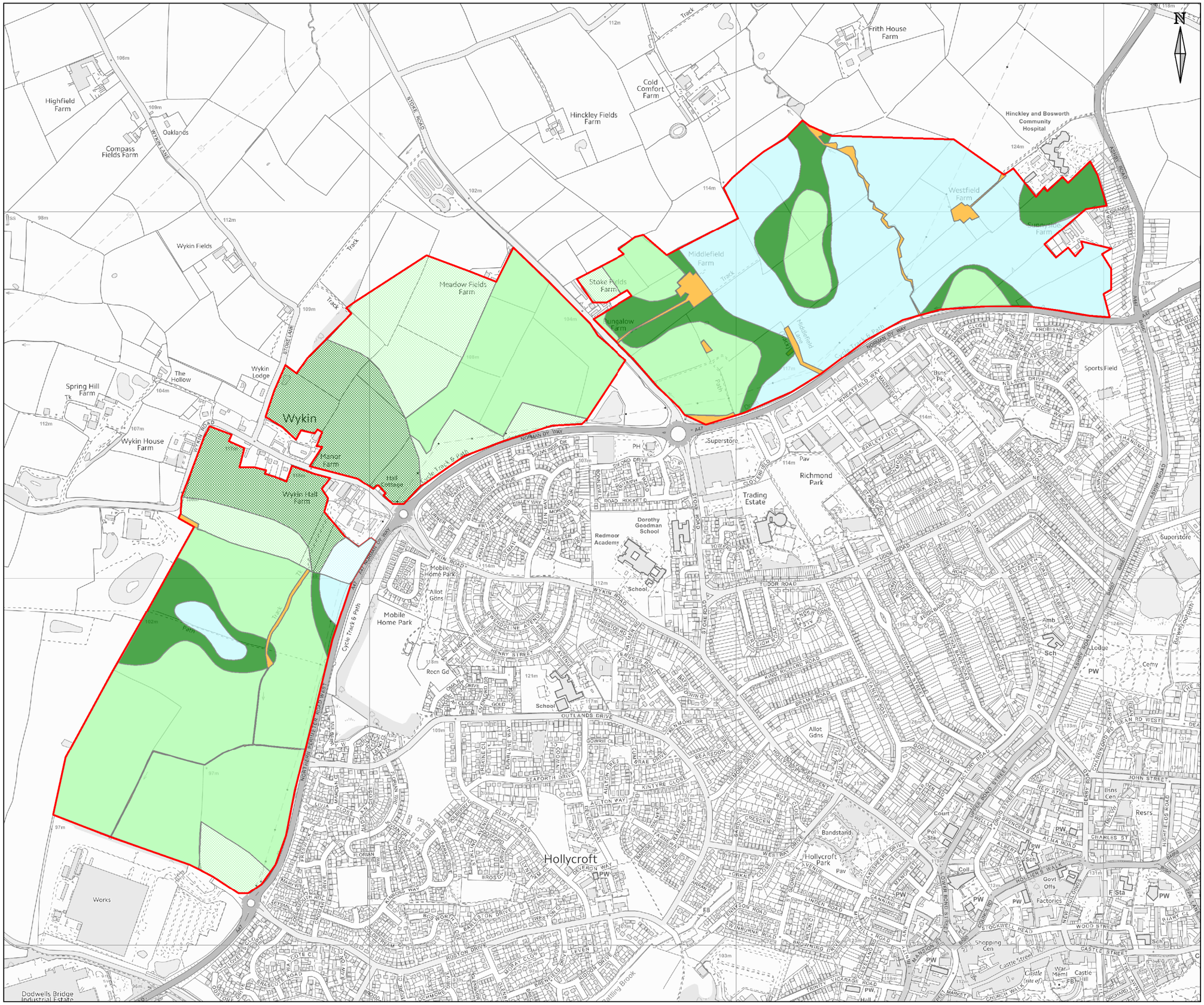
9.7. This land grade was encountered in the area where Oadby till is mappedand is also estimated where similar geology is recorded in the south of the site near Wykin Hall Farm.

Estimated Subgrade 3b

9.8. Subgrade 3b land is predicted overrecorded Bosworth Clay Member in the centre of the site, which mainlygives heavy clay soils with significant wetness limitations.

Table 8: Areas occupied by the different land grades surrounding Hinckley

Grade/subgrade	*Area (ha)*		*% of the land*	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	39.6	40.6	32	25
Subgrade 3a	16.6	33.7	14	21
BMV land total	**56.2**	**74.3**	**46**	**46**
Subgrade 3b	65.9	85.3	54	54
Total land area	**122.1**	**159.6**	**100**	**100**



KEY

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Non agricultural
- Estimated grade 2
- Estimated subgrade 3a
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Hinckley and Bosworth District

Map title:

Map 9
Hinckley
Agricultural Land Classification

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:10,000

Date: 11/3/2019

10.0 Agricultural land quality around Market Bosworth

SURVEY RESULTS

10.1. The agricultural quality of the land is determinedby wetness. Land of grades 2 and 3 has been identified: see Map 10 at the end of this Section for their distribution.

Grade 2

10.2. Land of this quality is found to the south of the area bordering the town. This landis slightly limited by wetness. The land has sandy clay loamsoils and the moderate clay content restricts access with machinery for cultivation in wet winter years.

Subgrade 3a

10.3. Where sandy clay loams overlie slowly permeable clay at depth (around 50-60 cm) land is limited by wetness to subgrade 3a. The moderate clay content of the topsoil in combination with the impeded drainage of the lower subsoil restricts the access of machinery to land in spring during wet years.

Subgrade 3b

10.4. This land has heavy clay loamtopsoils over slowly permeable clay. The combination of poor drainage and high clay content topsoil means access with farm machinery is restricted so that arable land use is constrained to autumn cropping most years.

ESTIMATED LAND GRADES

Estimated Grade 2

10.5. Grade 2 quality land was found over superficial sand and gravel deposits which provides deep loamy soils. These deposits also are mapped in small areas in the north and in the south of the survey area, which are therefore predicted to have the same land grade.

Estimated Subgrade 3a

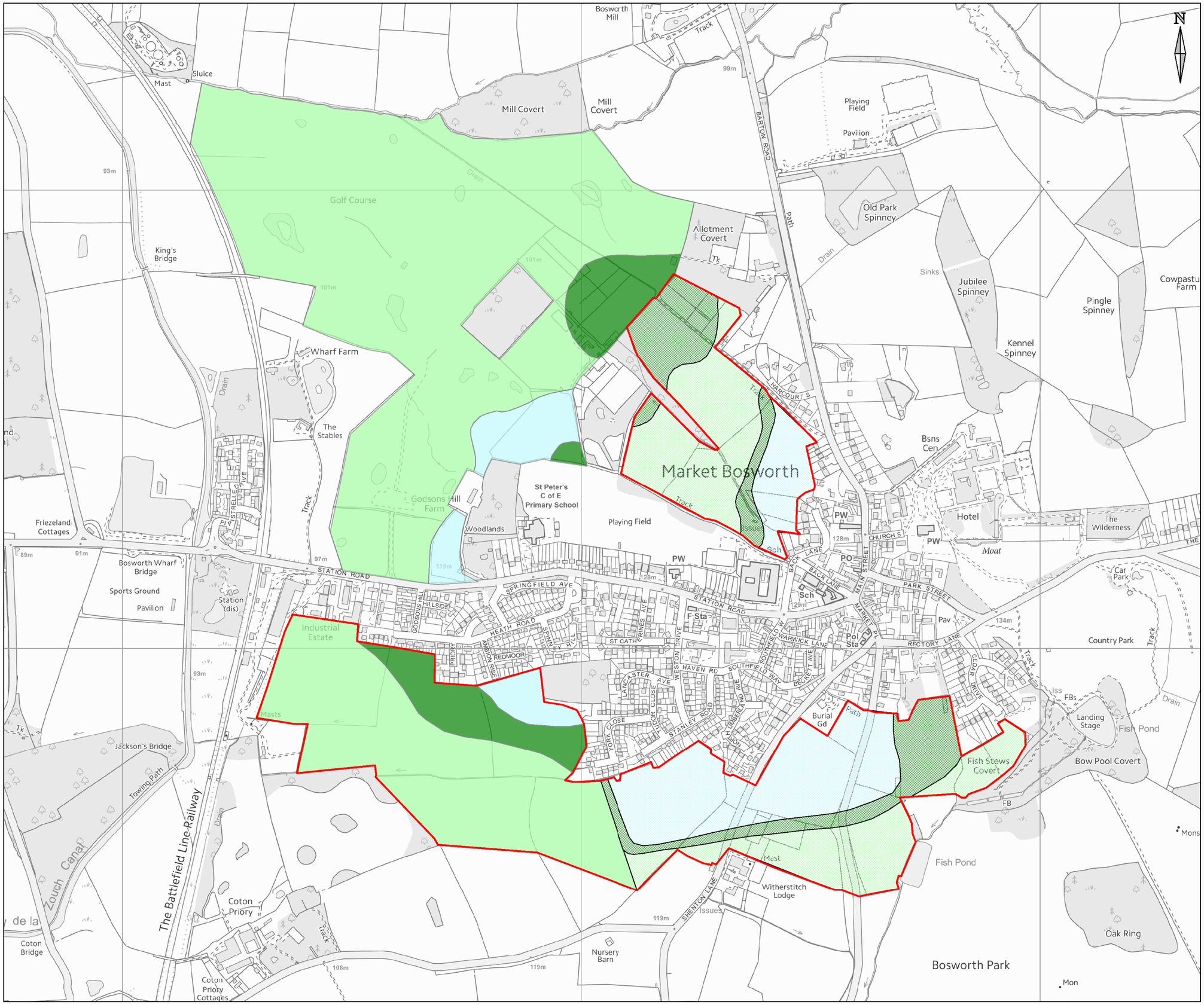
10.6. This sub-grade was encountered where Oadby till is mapped (giving rise to soils with moderate wetness limitations and is also predicted to occur over unsurveyed areas in the south-east and north-east recorded as this geology.

Estimated Subgrade 3b

10.7. Subgrade 3b land is predicted over recorded Bosworth Clay Member in the centre of the site, which mainly gives heavy soils with significant wetness limitations.

Table 9: Areas occupied by the different land grades surrounding Market Bosworth

Grade/subgrade	***Area (ha)***		***% of the land***	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	5.2	18.3	6	15
Subgrade 3a	7.8	16.1	9	13
BMV land total	**13.0**	**34.4**	**15**	**28**
Subgrade 3b	71.9	86.2	85	72
Total land area	**84.9**	**120.6**	**100**	**100**



N

KEY

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Estimated grade 2
- Estimated subgrade 3a
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Hinckley and Bosworth District

Map title:

Map 10
Market Bosworth
Agricultural Land Classification

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:6,000

Date: 11/3/2019

11.0 Agricultural land quality around Markfield

SURVEY RESULTS

11.1 The agricultural quality of the land is determined by wetness. Land of grades 2 and 3 has been identified: see Map 11 at the end of this Section for their distribution.

Grade 2

11.2 Land within grade 2 comprises deep permeable clay loam soils limited by wetness. The moderately high topsoil clay content of these soils leads to slight access restrictions to farm machinery, affecting the cultivation/harvesting of winter crops in wet years under the local climate.

Subgrade 3a

11.3 This subgrade occurs where permeable clay loams overlie clay at a depth of around 60 cm. The moderately high clay content of the topsoil, in combination with the impeded drainage of the lower subsoil restricts machinery access to land in spring during wet years.

Subgrade 3b

11.4 Heavy slowly permeable land limited by wetness forms this subgrade and is predominant within the survey area. The high clay content of the topsoil and the impeded drainage of the land combine to cause significant access restrictions to farm machinery. This means arable land use of the land is mainly constrained to autumn-sown crops.

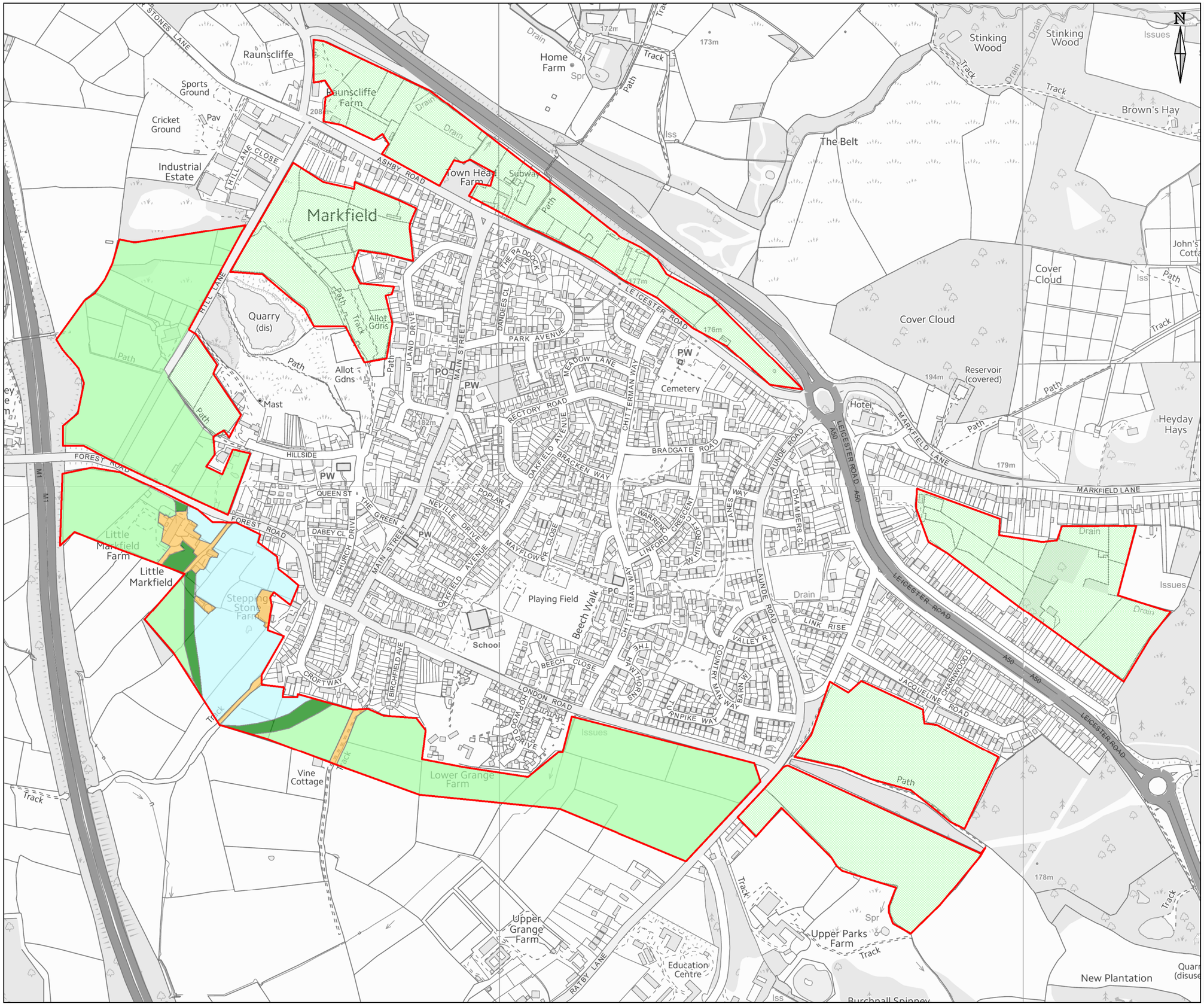
ESTIMATED LAND GRADES

Estimated Subgrade 3b

11.5 Subgrade 3b land was found to surround most of Markfield, where Oadby Member glacial till was recorded; areas not surveyed are recorded to have similar geology, or to be formed directly over mudstone.It is likely these soils are also heavy and slowly permeable and thereforeare also predicted as subgrade 3b.

Table 10: Areas occupied by the different land grades surrounding Markfield

Grade/subgrade	*Area (ha)*		*% of the land*	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	5.2	5.2	17	8
Subgrade 3a	1.1	1.1	3	2
BMV land total	**6.3**	**6.3**	**20**	**10**
Subgrade 3b	25.1	60.3	80	90
Total land area	**31.4**	**66.6**	**100**	**100**



KEY

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Non agricultural
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Hinckley and Bosworth District

Map title:

Map 11
Markfield
Agricultural Land Classification

Land Research Associates

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:7,000

Date: 11/3/2019

12.0 Agricultural land quality around Newbold Verdon

SURVEY RESULTS

12.1 The agricultural quality of the land is determinedby wetness or droughtiness. Land of grades 2 and 3 has been identified: see Map 12 at the end of this Section for their distribution.

Grade 2

12.2 Land of this quality is found to the north, south and west of the village. Areas limited by wetness comprise land with sandy clay loam soil profiles. The moderately high clay content of the soils means access with farm machinery can be limited in wet winters, restricting cultivations/harvesting.

12.3 In other areas, sandy loams form grade 2 land. Thisland is limited by droughtiness as the subsoils store limited moisture for crop uptake in dry summers that will lead to reduced crop yields in under the local climate.

Subgrade 3a

12.4 This land grade mainly comprises sandy clay loam soils overlying slowly permeable clay at around 50 cm depth. The moderately high clay content of the topsoil, in combination with the impeded drainage of the lower subsoil restricts the machinery land access in spring during wet years.

Subgrade 3b

12.5 Land of subgrade 3b agricultural quality is mainly present in the north-west and south-west of the area. This land comprises heavy slowly permeable soils limited by wetness. The poor drainage and high clay content of these soils combine to cause significant access restrictions tofarm machinery in spring, constraining arable land use to autumn-sown crops in most years.

ESTIMATED LAND GRADES

Estimated Grade 2

12.6 Grade 2 quality land is predicted to the north-east and south of the village, over recorded sand and gravel depositswhich were found to give land of this grade in surveyed parts of the locality.

Estimated Subgrade 3a

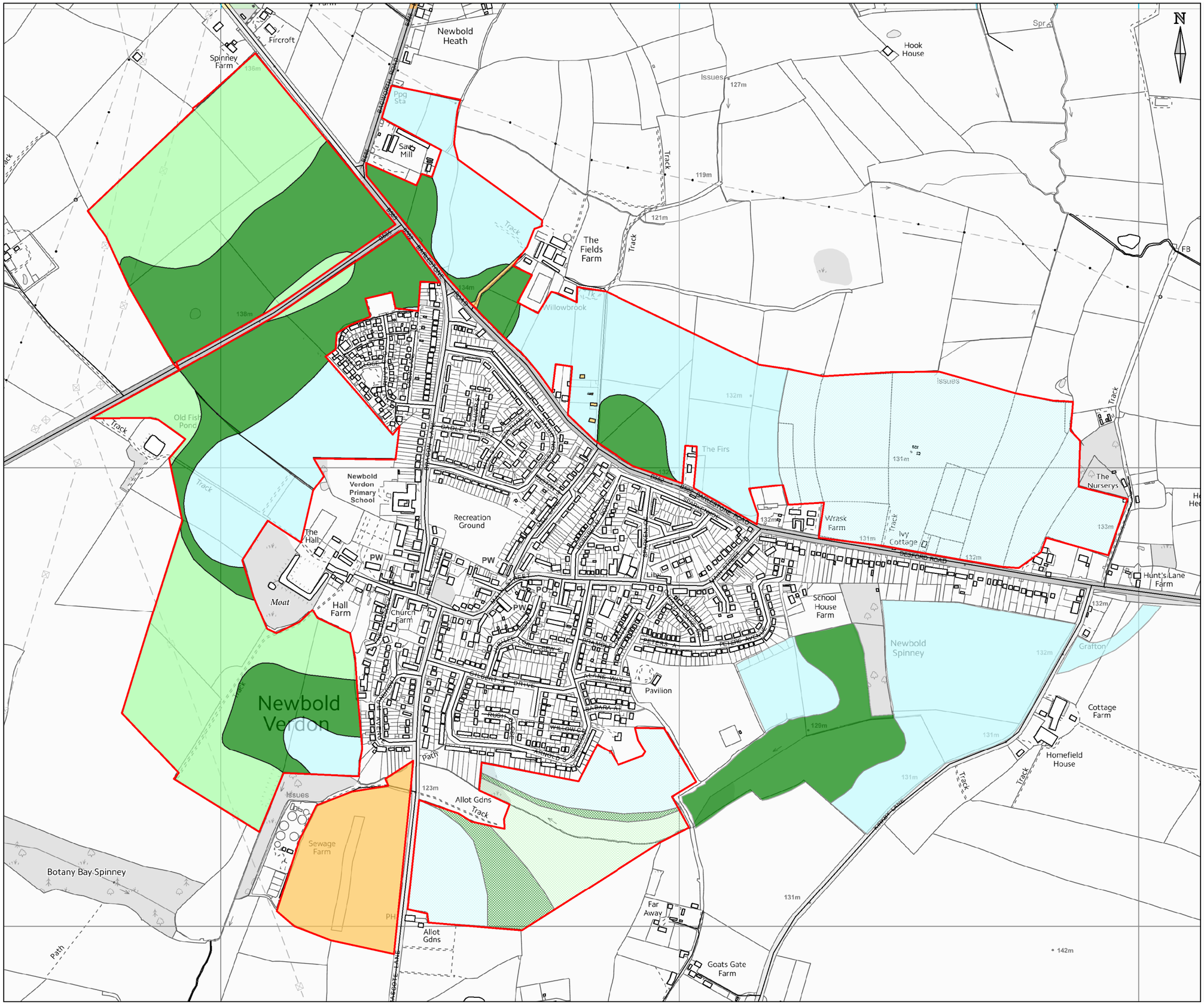
12.7 This land grade was encountered where Oadby till is mapped in this area, and is therefore also predicted where this geology is mapped, predominantly to the north-west of the village and in a small area to the south-east.

Estimated Subgrade 3b

12.8 Subgrade 3b land is predicted where superficial deposits area not recorded and soils are developed in the underlying mudstone; a small area of this land is mapped in the south-east.

Table 11: Areas occupied by the different land grades surrounding Newbold Verdon

Grade/subgrade	***Area (ha)***		***% of the land***	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	47.4	79.1	42	51
Subgrade 3a	36.8	41.6	33	27
BMV land total	**84.2**	**120.7**	**75**	**78**
Subgrade 3b	28.4	33.5	25	22
Total land area	**112.6**	**154.2**	**100**	**100**



KEY

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Non agricultural
- Estimated grade 2
- Estimated subgrade 3a
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Land quality surronding settlements in the HBBC

Map title:

Map 12
Newbold Verdon
Agricultural Land Classification

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:8,000

Date: 11/3/2019

13.0 Agricultural land quality around Ratby

SURVEY RESULTS

13.1 The agricultural quality of the land is determinedby wetness. Land of grade 3 has been identified: see Map 13 at the end of this Section for their distribution.

Subgrade 3a

13.2 This land grade is mainly found to the west of Ratby where sandy clay loams overlie dense clay at depth (around 60 cm). The combination of a moderately high topsoil clay content and impeded drainage leads to farm machinery access restrictions in winter and early spring.

Subgrade 3b

13.3 This land grade is mainly restricted to the west of the site where heavy slowly permeable soils are found. The poor drainage and high topsoil clay content combine to significantly restrict access with farm machinery. This means that arable land use of the land is mainly limited to autumn-sown crops.

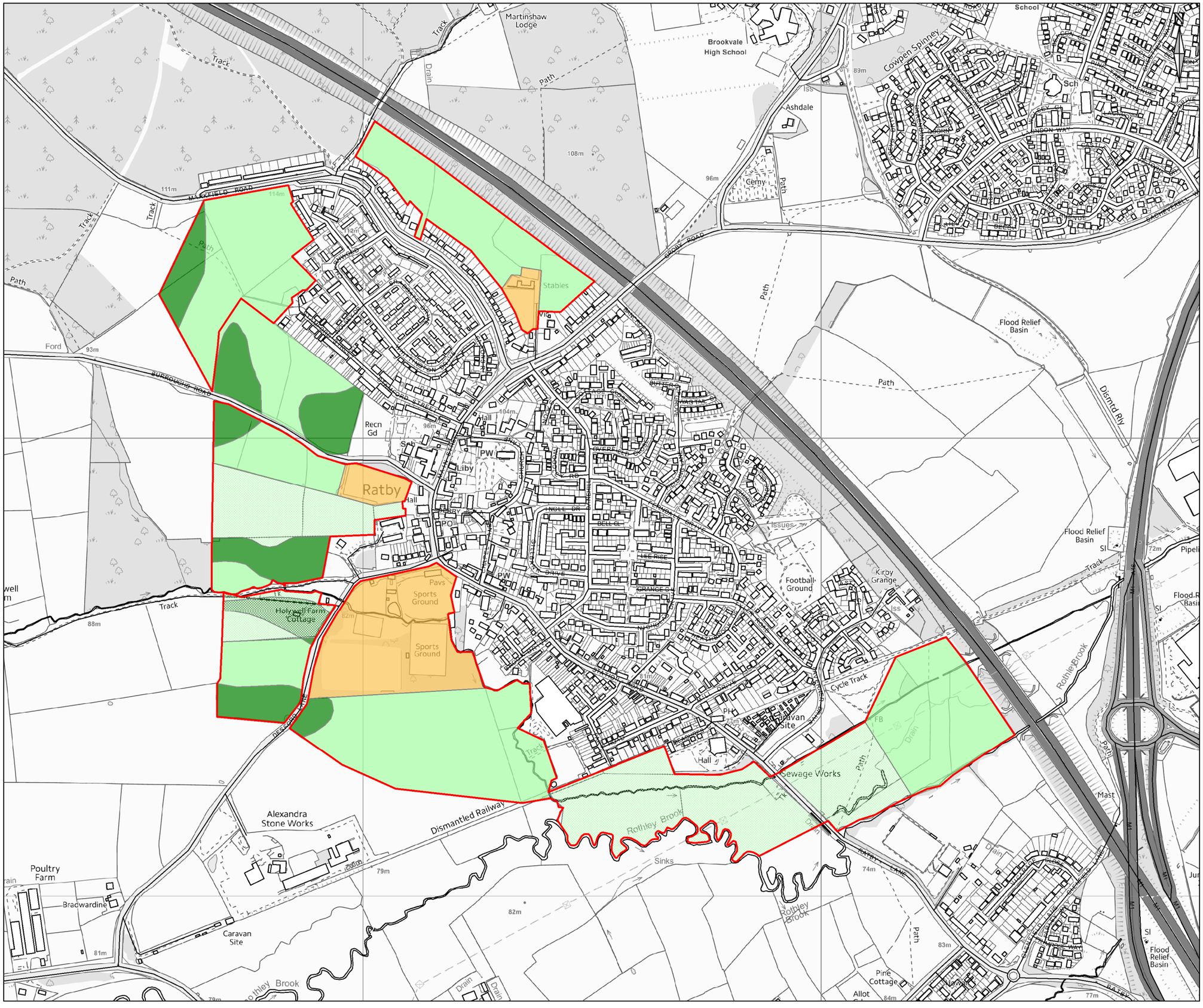
ESTIMATED LAND GRADES

Estimated Subgrade 3b

13.4 This land grade is predicted in the south of the site where soils are formed in clayey alluvium, giving heavy land with wetness limitations.

Table 12: Areas occupied by the different land grades surrounding Ratby

Grade/subgrade	***Area (ha)***		***% of the land***	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	0	0	0	0
Subgrade 3a	8.3	9.5	18	15
BMV land total	**8.3**	**9.5**	**18**	**15**
Subgrade 3b	37.0	53.9	82	85
Total land area	**45.3**	**63.4**	**100**	**100**



KEY

- Subgrade 3a
- Subgrade 3b
- Non agricultural
- Estimated subgrade 3a
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Hinckley and Bosworth District

Map title:

Map 13
Ratby
Agricultural Land Classification

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:8,000

Date: 11/3/2019

14.0 Agricultural land quality around Stoke Golding

SURVEY RESULTS

14.1. The agricultural quality of the land is determinedby wetness or droughtiness. Land of grade 2 and 3 has been identified: see Map 14 at the end of this Section for their distribution.

Grade 2

14.2. Land of this quality is found in the south and north of the survey area, comprising sandy loam over sandy clay loam soils. This land is slightly limited by droughtiness, as the soils have limited moisture storage capacity which can lead to reduced crop yields in dry years.

Subgrade 3a

14.3. This subgrade mainly occurs in the north-west of the site where medium and sandy clay loam topsoils overlie clay at a depth of around 50 cm. The moderately hightopsoil clay content of the topsoil in combination with the impeded drainage of the lower subsoil can cause land access restrictions for spring cultivations during wet years.

Subgrade 3b

14.4. Land of subgrade 3b is mainly located in the south of the site where heavy clay loam topsoils directly overlie slowly permeable clay. The high clay content of the topsoil and impeded drainage of this land combine to restrict access by farm machinery in spring, constraining arable land use to autumn-sown crops in most years.

ESTIMATED LAND GRADES

Estimated Grade 2

14.5. Grade 2 quality land was found to be formed over superficial sand and gravel deposits. Therefore, this land is also predicted to occur in small patches where the deposits are mapped to the east of the village.

Estimated Subgrade 3a

14.6. This land grade was generally identified where Oadbyglacial till is recorded. This subgrade is therefore alsopredicted where this geology is recorded in the east of the survey area.

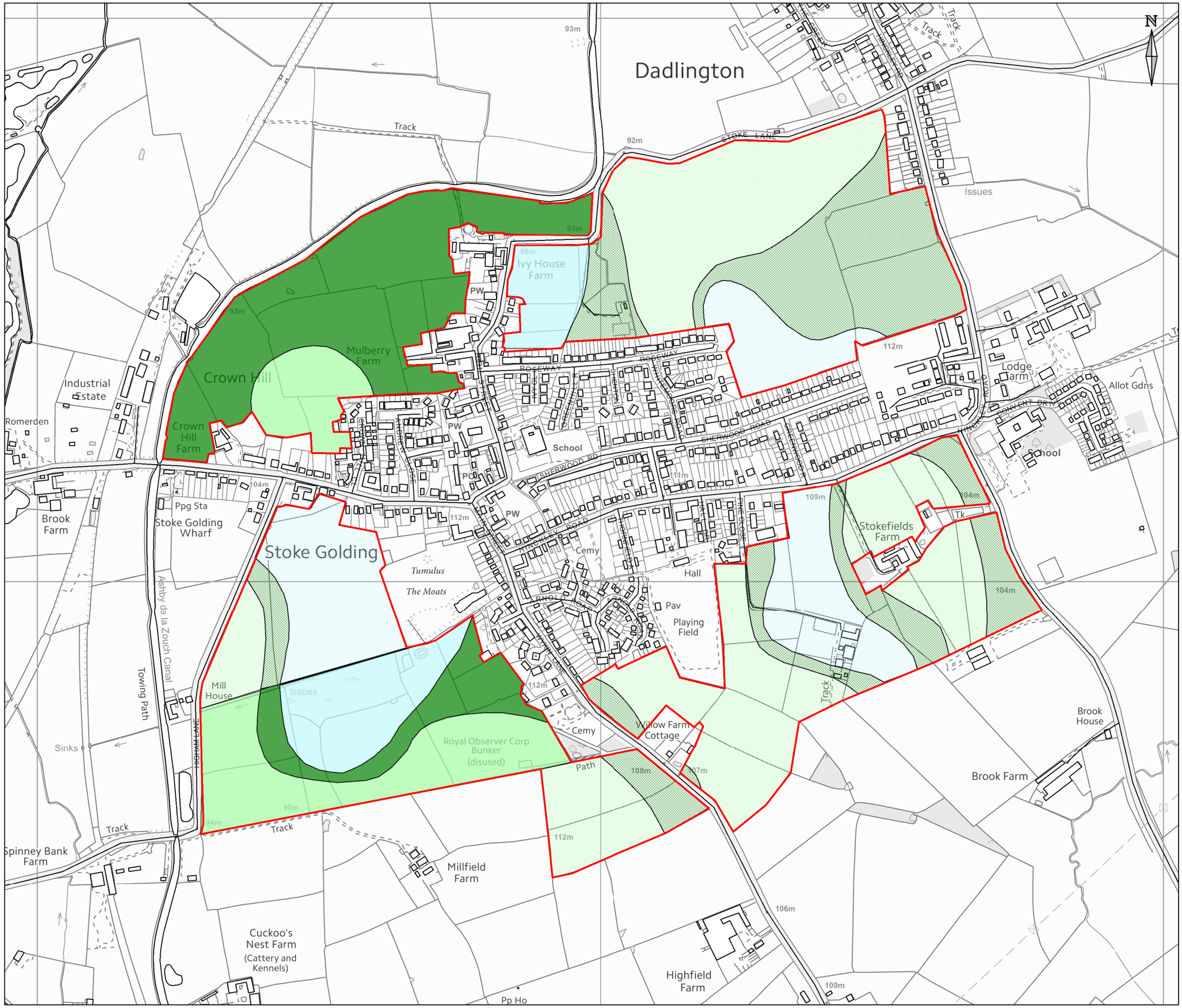
Estimated Subgrade 3b

14.7. Subgrade 3b quality land was identified where soils were formed in Bosworth Clay Member. This geology is also mapped in large areas to the south and north of the village, which are also predicted to be of subgrade 3b agricultural quality

Table 13: Areas occupied by the different land grades surrounding Stoke Golding

Grade/subgrade	*Area (ha)*		*% of the land*	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	4.4	17.3	14	20
Subgrade 3a	18.6	35.8	57	40
BMV land total	**23.0**	**53.1**	**71**	**60**
Subgrade 3b	9.6	35.7	29	40
Total land area	**32.6**	**88.8**	**100**	**100**

.



KEY

- Grade 2
- Subgrade 3a
- Subgrade 3b
- Estimated grade 2
- Estimated subgrade 3a
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Hinckley and Bosworth District

Map title:

Map 14
Stoke Golding
Agricultural Land Classification

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:6,000

Date: 11/3/2019

15.0 Agricultural land quality around Thornton

SURVEY RESULTS

15.1 The agricultural quality of the land is determinedby slope gradient. Land of grade 3 has been identified: see Map 15 at the end of this Section for their distribution.

Subgrade 3b

15.2 Land within this subgrade is limited by the steepness of slope (approximately 10°).Thislimits agricultural quality as modern commercial farm machinery cannotbe used in a safe and efficient manner. The risk of increased soil erosionfor land under cultivation is also a limiting factor.

ESTIMATED LAND GRADES

Estimated Subgrade 3a

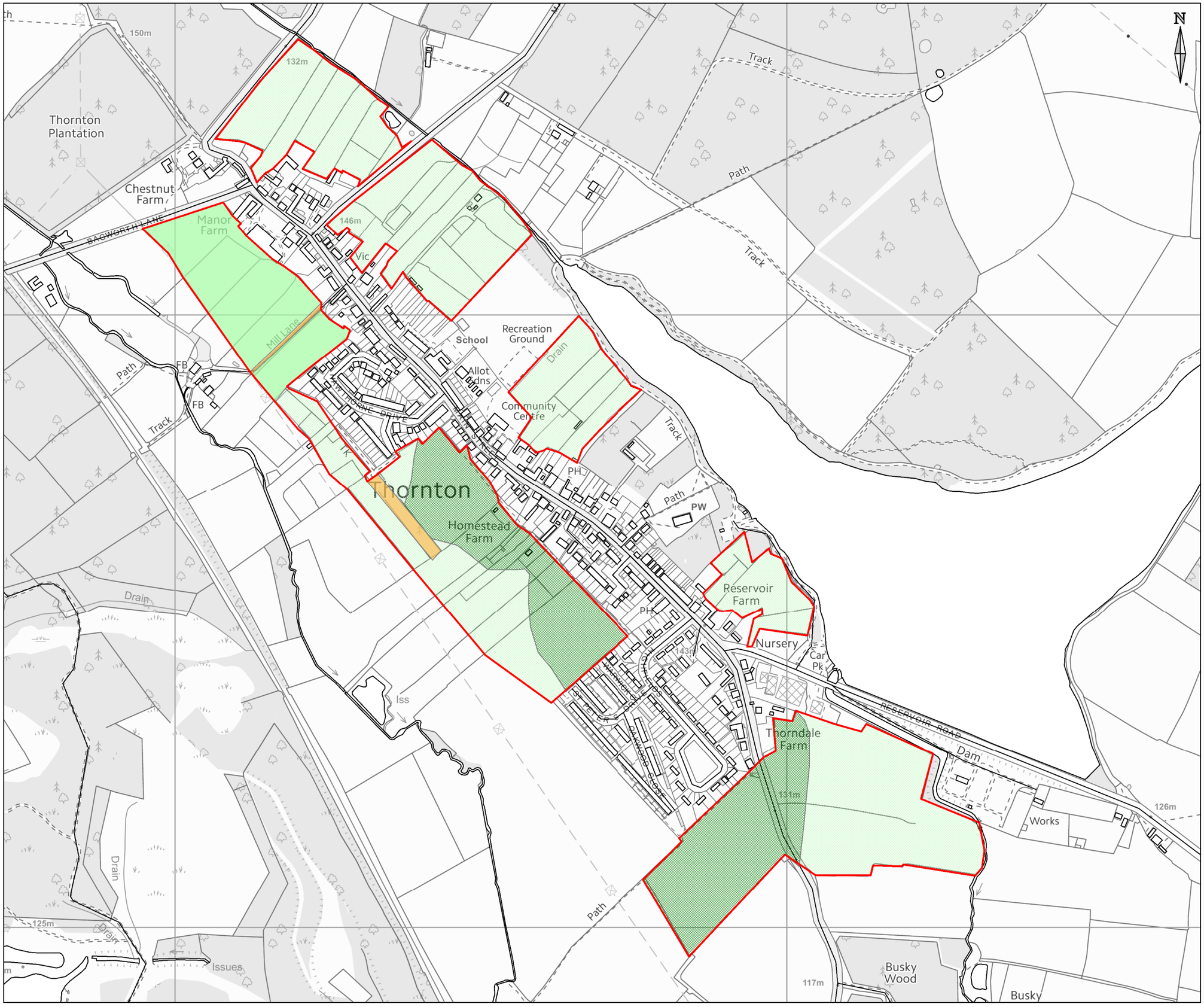
15.3 This land grade is mapped on gentler slopes where land is predicted to have moderate wetness limitations (as found elsewhere in the District) being recorded to be formed inOadbyglacial till.

Estimated Subgrade 3b

15.4 The majority of the land is limited by steep slope gradient (between 7° and 11°) to a maximum of subgrade 3b agricultural quality.

Table 14: Areas occupied by the different land grades surrounding Thornton

Grade/subgrade	***Area (ha)***		***% of the land***	
	Surveyed land	Surveyed and estimated land	Surveyed land	Surveyed and estimated land
Grade 1	0	0	0	0
Grade 2	0	0	0	0
Subgrade 3a	0	9.4	0	25
BMV land total	**0**	**9.4**	**0**	**25**
Subgrade 3b	27.5	27.5	100	75
Total land area	**27.5**	**36.9**	**100**	**100**



KEY

- Subgrade 3b
- Non agricultural
- Estimated subgrade 3a
- Estimated subgrade 3b
- Survey area

Client:

Hinckley & Bosworth Borough Council

Site:

Hinckley and Bosworth District

Map title:

Map 15
Thornton
Agricultural Land Classification

Land Research Associates

Land Research Associates
Lockington Hall
Lockington
Derby DE74 2RH
01509 670570

Scale: 1:6,000 at A3

Date: 11/3/2019

16.0 Summary and conclusions

16.1. Land within the HBBC District is predominantly in agricultural use comprising an evenmixture of best and most versatile (grades 1-3) and lower quality subgrade 3b land (see table 15).

12.1. The poorer quality subgrade 3b land is dominant around six settlements in the District. Two of which, Groby and Thornton, are adjoined almost exclusively by subgrade 3b land. The village of Groby is underlain by glacial till deposits in the south and mudstone in the north found to give heavy land limited by wetness. Land at Thornton is principally limited by steep slope gradients.

16.2. Six settlements in the HBBC District are adjoined by predominantly BMV land. Of these settlements, Barlestone and Newbold Verdon are surrounded almost entirely by BMV grade 2 and subgrade 3a land. Land adjoining Barlestone is formed in sand and gravel deposits and glacial till giving predominantly grade 2 and subgrade 3a quality land slightly limited by droughtiness or wetness. Land around Newbold Verdon is formed in similar geology with glacial till to the east and west and sand and gravel to the north and south.

Table 15: ALC survey findings for Hinckley and Bosworth District

	ALC grade areas (ha)					ALC grade areas %				
	1	**2**	**3a**	**3b**	**Total**	**1**	**2**	**3a**	**3b**	**%BMV**
Bagworth	2	9	12	4	27	7	34	43	16	84
Barlestone	0	28	26	6	60	0	46	44	10	90
Barwell	0	0	2	5	8	0	0	30	70	30
Burbage	22	79	65	56	222	10	36	29	25	75
Desford	0	4	21	12	37	0	11	56	33	67
Earl Shilton	0	33	35	54	122	0	27	29	44	56
Groby	0	0	4	40	44	0	0	9	91	9
Hinckley	0	40	17	66	122	0	32	14	54	46
Market Bosworth	0	5	8	72	85	0	6	9	85	15
Markfield	0	5	1	25	31	0	17	4	80	20
Newbold Verdon	0	47	37	28	113	0	42	33	25	75
Ratby	0	0	8	37	45	0	0	18	82	18
Stoke Golding	0	4	19	10	33	0	13	57	29	71
Thornton	0	0	0	28	28	0	0	0	100	0
Total	**23**	**255**	**254**	**443**	**976**	**2**	**26**	**26**	**45**	**55**

Glossary

ALC – Agricultural Land Classification

AOD – Above Ordnance Datum

BGS – British Geological Society

BMV – best and most versatile

DEFRA – Department for Environment, Food and Rural Affairs

EA – Environment Agency

HBBC – Hinckley and Bosworth Borough Council

NPPF – National Planning Policy Framework

MAFF – former Ministry of Agriculture, Food and Fisheries